AMERICAN LUNG ASSOCIATION®

STATE OF THE AIR 2017

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The American Lung Association assumes sole responsibility for the content of the American Lung Association "State of the Air® 2017."

American Lung Association
National Headquarters
55 W. Wacker Drive, Suite 1150
Chicago, IL 60601

Advocacy Office
1331 Pennsylvania Avenue, NW, Suite 1725 North
Washington, DC 20004

Phone: 1 (800) 586-4872
Fax: (202) 452-1805

www.stateoftheair.org
www.Lung.org

Fighting for Air

Designed by Our Designs, Inc., Nashville, TN

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The State of the Air 2017

The "State of the Air 2017" found continued improvement in air quality in 2013-2015 in ozone and year-round particle pollution, but an unrelenting increase in dangerous spikes in particle pollution. These trends demonstrate the continued need to support and enforce the Clean Air Act to protect the nation from unhealthy air.

The "State of the Air 2017" report shows that cleaning up pollution continues successfully in much of the nation. In the 25 cities with the worst ozone and year-round particle pollution, the majority saw improvements from last year. Many again reached their lowest levels ever of these widespread air pollutants.

Yet, even as most cities experienced strong improvement, too many cities suffered worse episodes of unhealthy air. While most of the nation has much cleaner air quality than even a decade ago, many cities reported their highest number of unhealthy days since the report began, including some that experienced extreme weather events.

"State of the Air 2017" shows that more than four in 10 people had unhealthy air quality in their communities.

The "State of the Air 2017" report shows that, even with continued improvement, too many people in the United States live where the air is unhealthy for them to breathe. Despite that continued need and the nation's progress, some people seek to weaken the Clean Air Act, the public health law that has driven the cuts in pollution since 1970, and to undermine the ability of the nation to fight for healthy air.

The "State of the Air 2017" report looks at levels of ozone and particle pollution found in official monitoring sites across the United States in 2013, 2014 and 2015. The report uses the most current quality-assured nationwide data available for these analyses.

The report examines particle pollution ($PM_{2.5}$) in two different ways: averaged year-round (annual average) and over short-term levels (24-hour). For both ozone and short-term particle pollution, the analysis uses a weighted average number of days that allows recognition of places with higher levels of pollution. For the year-round particle pollution rankings, the report uses averages calculated and reported by the U.S. Environmental Protection Agency (EPA). For comparison, the "State of the Air 2016" report covered data from 2012, 2013 and 2014.[1]

Overall Trends

The "State of the Air 2017" found continued improvement in air quality in 2013-2015 in ozone and year-round particle pollution, but an unrelenting increase in dangerous spikes in particle pollution. The number of people exposed to unhealthy levels of air pollution dropped to more than 125 million people, from 166 million in the years covered in the 2016 report (2012-2014).

Four in 10 people live where the air is unhealthy.

Overall, **the best progress came in the continued reduction of ozone and year-round particle pollution,** thanks to cleaner power plants and increased use of cleaner vehicles and engines. Continued progress to cleaner air remains crucial to reduce the risk of premature death, asthma attacks and lung cancer. However, a changing climate is making it harder to protect human health.

Nearly four in 10 people (38.9 percent) in the United States live in counties that have unhealthful levels of either ozone or particle pollution. More than 125 million Americans live in 204 counties where they are exposed to unhealthful levels of air pollution in the form of either ozone or short-term or year-round levels of particles.

Still, this represents a major improvement: One-quarter fewer people now live where the air quality hit unhealthy levels.

Still, this represents a major improvement: **One-quarter fewer people now live where the air quality hit unhealthy levels in 2013-2015** than in the 2016 report. In last year's report, covering 2012-2014, more than 166 million Americans lived in counties with unhealthful levels of air pollution.

Los Angeles improved over last year and again had its best ozone report in the history of the "State of the Air."

More than 18 million people (5.6 percent) live in 12 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution. This is nearly 1.9 million fewer people than in the 2016 report when approximately 6.3 percent were exposed. However, we continue to lack data on particle pollution in all or parts of two states.

Los Angeles remains the city with the worst ozone pollution as it has for nearly the entire history of the report. **Bakersfield, CA, maintains its rank as the city with the worst short-term particle pollution,** while **Visalia-Porterfield-Hanford, CA,** moved for the first time to rank as the **most-polluted city for year-round particle pollution.**

The "State of the Air 2017" report shows the sustained success of the Clean Air Act, continuing to clean up pollution in much of the nation, as it nearly completes its fifth decade of service. Many cities reported fewer days of high ozone and lower levels of year-round particle pollution. Several cities again reported their cleanest years ever during this period, while others had their worst periods of air pollution.

Thanks to the provisions in the Clean Air Act, the United States has continued to **reduce ozone and particle pollution** as well as other pollutants for decades. Figure 1 from EPA shows that since 1970, the air has gotten cleaner while the population, the economy, energy use and miles driven increased greatly. As the economy continues to grow, overall air emissions that create the six most-widespread pollutants continue to drop.

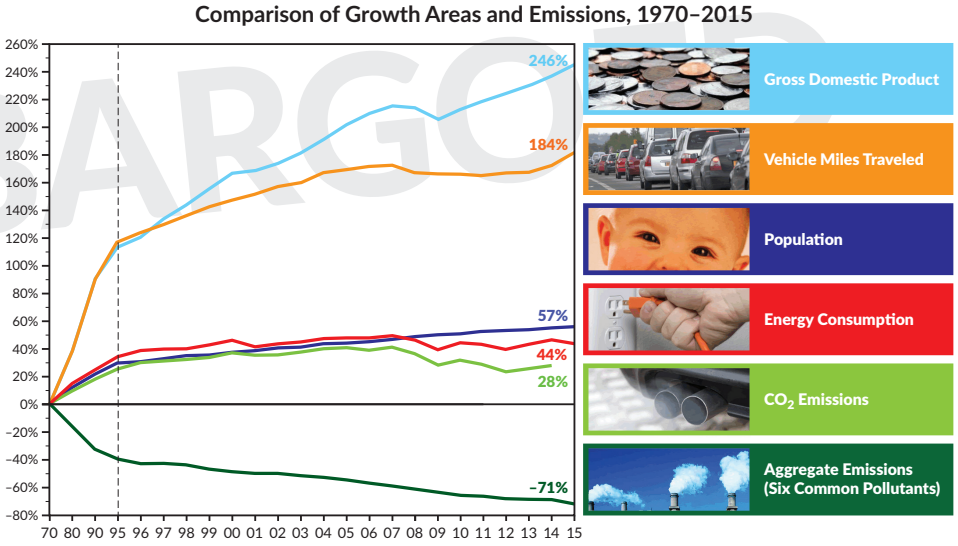

Figure 1: Air pollution emissions continue to drop steadily since 1970 thanks to the Clean Air Act. As the economy continues to grow, emissions that cause ozone and particle pollution continue to drop. Source: U.S. EPA, Air Trends: Air Quality National Summary, 2017.

The Clean Air Act must remain intact and enforced to enable the nation to continue to protect all Americans from the dangers of air pollution. This law has driven improvements in air quality for 47 years, as shown in Figure 1. Since first issued in 2000, the "State of the Air" reports have also documented these improvements, as shown in trend charts for counties and cities available at www.stateoftheair.org. The nation must ensure that the Clean Air Act's tools remain in place, funded and followed.

The "State of the Air 2017" report adds to the evidence that a changing climate in making it harder to protect human health. While most of the nation has much cleaner air quality than even a decade ago, a few cities reported their worst number of unhealthy days since the report began, including many that experienced wildfire smoke.

As climate change continues, cleaning up these pollutants will become ever more challenging. Climate change poses many threats to human health, including worsened air quality and extreme weather events. The nation must continue to reduce emissions that worsen climate.

Ozone Pollution

Twenty of the 25 cities with the worst ozone pollution reduced the number of high-ozone days they experienced each year, improving over the previous report. Twelve experienced their best ozone seasons ever during 2013-2015, reaching their lowest weighted average number of days of unhealthy levels each year.

Los Angeles remains at the top of this list as it has for all but one of the 18 reports. Los Angeles also continues its success at cleaning up ozone, dropping its average number of unhealthy days to its lowest level ever.

Also **experiencing their fewest high-ozone days on average were 10 other cities** among the 25 most polluted by ozone. They include Bakersfield, CA; Visalia-Porterville-Hanford, CA; Modesto-Merced, CA; Sacramento, CA; Las Vegas; Dallas-Fort Worth; El Centro, CA; San Jose-San Francisco; Philadelphia; and Chico, CA.

Nine others improved, though not reaching their lowest level: Fresno-Madera, CA; Phoenix; Denver-Aurora, CO; El Centro, CA; Fort Collins, CO; El Paso-Las Cruces, TX-NM; San Antonio; Hartford, CT; Sheboygan, WI. One city—Redding-Red Bluff, CA—had the same number of unhealthy ozone days on average in this year's report.

Four cities suffered more high-ozone days on average than in last year's report: San Diego; Houston; Salt Lake City; and Baton Rouge, LA.

These comparisons are all based on the Air Quality Index adopted with the 2015 ozone standard. Although EPA has yet to designate any places for cleanup based on that standard, it remains the current official national ambient air quality standard.

Regional differences. Cities in the West and Southwest continue to dominate the most ozone-polluted list. California retains its historic challenge with seven of the 10 most polluted metropolitan areas in that state and 11 of the worst 25. California's weather and geography complicate the strong effort the state continues to make to reduce emissions. The Southwest continues to fill most of the remaining slots, with nine of the 25 most ozone-polluted cities. Texas has four cities in the 25 most-polluted list: Houston, Dallas-Fort Worth, El Paso and San Antonio. Colorado has two: Denver and Fort Collins. Arizona, Nevada and Utah each have one. The Northeast also has three metro areas on the list, two of which cover parts of multiple states: New York City, Philadelphia, and Hanford, CT. The Midwest has only Sheboygan, WI. in the 25 most-polluted list. The only southern city to remain on the list is Baton Rouge, LA.

Those changes reflect changes seen in the past two reports, where increased oil and gas extraction especially in the Southwest and cleanup of power plants in the eastern U.S. have shifted the cities that experienced the greatest number of unhealthy air days.

Twelve cities improved to their lowest levels of year-round particle pollution.

Year-round Particles

Fifteen of the 25 cities with the highest year-round particle pollution reduced their levels, including 12 that reached or matched their lowest levels ever in 2013-2015. The 10 most polluted remain the only metropolitan areas in the nation that fail to meet the official national limits on annual fine particle pollution.

Eight of the 25 cities suffered higher annual particle pollution levels, including Visalia-Porterfield-Hanford, CA, the city that ranked as the most polluted for year-round levels. In addition to Visalia, three other California cities—Bakersfield; San Jose-San Francisco; and San Luis Obispo—and two other cities in the western states—Medford-Grants Pass, OR, and Fairbanks, AK—had worse year-round levels. The two remaining cities with higher year-round average levels were in the east: Johnstown-Somerset, PA and New York City metro area. San Luis Obispo reached its worst level ever.

Two cities in the list of the 25 most-polluted maintained the same level as in the 2016 report: Cleveland and Houston.

Regional differences. Much of the eastern and middle parts of the country have improved significantly since the report first started to track these fine particles. Much of that improvement came from reducing emissions from coal-fired power plants, as well as benefiting from nationwide cleanup of diesel engines. However, the western states' burden of so much wildfire smoke and high inversions seems to have moved from just being a short-term problem to adding to the burden year-round. Cities in California's San Joaquin valley were hit hard, as were other locations where particle pollution is usually limited to short spikes, including Fairbanks, AK, and Medford-Grants Pass, OR.

Data remain missing in all of Illinois, most of Tennessee and parts of Maine. That means that millions of people, including in large cities Chicago, Memphis and St. Louis (which is missing suburban counties in Illinois), cannot know how much particulate matter they are breathing.

Short-Term Particle Pollution

Bakersfield, CA retains its ranking as the most polluted city for spikes in particle pollution in this report, as it had in the 2016 report and in four other reports since 2010. Unfortunately, Bakersfield suffered more unhealthy days on average in this year's report.

Eight cities suffered their highest number of spikes in particle pollution since the reporting began.

Fifteen of the 25 most-polluted cities had more days with higher episodes of particle pollution, including eight that suffered their most days since the report started and one that maintained its worst report ever.

Cities recording their worst short-term particle episodes in 2013-2015 concentrated in the western states: Visalia-Porterfield-Hanford, CA; Fairbanks, AK; San Jose-San Francisco; Reno, NV; El Centro, CA; Lancaster, PN; Anchorage, AK; and Bend-Redmond-Prineville, OR, marking that city's first time on this list.

Seven other western cities recorded more unhealthy days than in the previous report: Bakersfield, CA; Salt Lake City, UT; Logan, UT-ID; Los Angeles; Sacramento, CA; Seattle-Tacoma, WA; and Medford-Grants Pass, OR.

Fortunately, **eight cities improved with fewer days of spikes in particle levels** in 2013-2015 than in 2012-2014. Six of these are western cities: Fresno-Madera, CA; Modesto-Merced, CA; Missoula, MT; Yakima, WA; Eugene, OR; and Phoenix, AZ. Two cities in Pennsylvania also improved: Harrisburg-York-Lebanon; and notably, Pittsburgh. Pittsburgh, which had been ranked the most polluted city in the same category in the 2008 report, experienced its fewest unhealthy days ever in 2013-2015.

Philadelphia and South Bend, IN recorded the same number of days in this year's report as in last year's report. However, as noted above, that kept South Bend stuck at its worst average number of unhealthy particle pollution days.

Regional differences. Locations with many days of spikes shows the burden of **concentrated smoke from wildfires, brushfires and wood-burning devices**. For example, Reno, NV, suffered wildfires, and Logan, UT-ID; Eugene, OR, and Fairbanks and Anchorage, AK, rely heavily on wood burning devices for heat. Wildfires have increased, in part, from drought and heat enhanced by climate change. Inversions trap particles in place behind mountains and ridgelines. For example, inversions in the San Joaquin Valley in California and in the Wasatch Ridge in Utah contributed to high pollution days in both states.

Cleanest Cities

Six cities ranked on all three cleanest cities lists in 2013-2015. These cities had zero high ozone or high particle pollution days, and were among the 25 cities with the lowest year-round particle levels. Five have repeated their ranking on this list, but Wilmington, NC, joins this list for the first time. Listed alphabetically below, these six cities are:

- Burlington-South Burlington, VT
- Cape Coral-Fort Myers-Naples, FL
- Elmira-Corning, NY
- Honolulu, HI
- Palm Bay-Melbourne-Titusville, FL
- Wilmington, NC

Eleven other cities ranked among the cleanest cities for both year-round and short-term levels of particle pollution. That means they had no days in the unhealthy level for short-term particle pollution and were on the list of the cleanest cities for year-round particle pollution. They are:

- Bangor, ME
- Casper, WY
- Colorado Springs, CO
- Farmington, NM
- Homosassa Springs, FL
- Lakeland Winter Haven, FL
- North Port Sarasota, FL
- Orlando-Deltona-Daytona Beach, FL
- Pueblo-Canon City, CO
- Sierra Vista-Douglas, AZ
- Syracuse-Auburn, NY

Twenty-three other cities ranked among the cleanest for ozone and short-term particle pollution. That means they had no days in the unhealthy level for ozone or short-term particle pollution. They are:

- Bellingham, WA
- Brunswick, GA
- Charlottesville, VA
- Columbia-Orangeburg-Newberry, SC
- Des Moines-Ames-West Des Moines, IA
- Dothan-Enterprise-Ozark, AL
- Eau Claire-Menomonie, WI
- Fayetteville-Springdale-Rogers, AK-MO
- Florence, SC
- Florence-Muscle Shoals, AL
- Gadsden, AL
- Gainesville-Lake City, FL
- Greenville-Washington, NC
- Harrisonburg-Staunton-Waynesboro, VA
- Jackson-Vicksburg-Brookhaven, MS
- La Crosse-Onalaska, WI-MN
- McAllen-Edinburg, TX
- Monroe-Ruston-Bastrop, LA
- Rome-Summerville, GA
- Savannah-Hinesville-Statesboro, GA
- Springfield-Branson, MO
- Tuscaloosa, AL
- Waterloo-Cedar Falls, IA

Two cities ranked on both lists for ozone and year-round particle pollution levels. Fargo-Wahpeton, ND-MN and Salinas, CA had no days in the unhealthy level for ozone pollution and were on the list of the cleanest cities for year-round particle pollution.

People at Risk

Looking at the nation as a whole, the **"State of the Air 2017" shows that, even with ongoing improvement, too many people in the United States live where the air is unhealthy for them to breathe.**

Nearly four in 10 people (38.9 percent) in the United States live in counties that have unhealthful levels of either ozone or particle pollution. More than 125 million Americans live in 204 counties where they breathe unhealthful levels of air pollution in the form of either ozone or short-term or year-round levels of particles.

This represents a major improvement: One-quarter fewer people now live where the air quality hit unhealthy levels in 2013-2015 than in the 2016 report. In last year's report, covering 2012-2014, more than 166 million Americans lived in counties with unhealthful levels of air pollution.

This improvement reflects continued progress in reducing harmful air pollution under the Clean Air Act. Progress would have been greater if climate change had not helped to create conditions that can worsen air quality.

More than one-third (36 percent) of the people in the United States live in areas with unhealthy levels of ozone pollution, but that is far fewer in 2013-2015 than in the previous report. Approximately 116.5 million people live in 161 counties that earned an F for ozone this year's report, a significant drop from the approximately 162.9 million who lived in counties earning an F in 2012-2014.

More than 18 million people in the U.S. live in counties where the outdoor air failed all three tests.

Nearly 19.9 million people (6.2 percent) suffered from unhealthy year-round levels of particle pollution in 2013-2015. These people lived in 18 counties where the annual average concentration of particle pollution was too high. Although still too high, fewer people face those dangerous year-round concentrations during this period than in last year's report. That report covered 2012-2014 when approximately 22.8 million people lived where monitors recorded unhealthy levels of year-round particle pollution.

More than 13 percent of people in the United States—more than 43 million—live in an area with too many days with unhealthful levels of particle pollution. Slightly fewer people lived where those episodes of unhealthy spikes in particle pollution in 2013-2015, despite many cities reaching their worst number of spikes since the report began. The total population exposed to unhealthy air dropped slightly to 43.03 million, down from 44.97 million in the 2016 report. Some counties with large populations had fewer high days, so they no longer received an F, while smaller population counties had more high pollution days. Those shifts resulted in slight changes to the population totals.

More than 18 million people (5.6 percent) live in 12 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution. This is nearly 1.9 million fewer people than in the 2016 report when approximately 6.3 percent were exposed. However, data on particle pollution remains missing in all or parts of three states.

With the risks from airborne pollution so great, the Lung Association seeks to inform people who may be in danger. Many people are at greater risk because of their age or because they have asthma or other chronic lung disease, cardiovascular disease or diabetes. The following list identifies the numbers of people in each at-risk group. Because of the missing data on particle pollution in Illinois, Tennessee and Maine, the numbers of people living in counties that fail all three tests may be actually higher.

Older and Younger—Nearly 16.7 million adults age 65 and over and more than 29.5 million children under 18 years old live in counties that received an F for at least one pollutant. More than 2.3 million seniors and more than 4.3 million children live in counties failing all three tests.

People with Asthma—Nearly 2.5 million children and nearly 8.3 million adults with asthma live in counties of the United States that received an F for at least one pollutant. Nearly 322,000 children and close to 1.1 million adults with asthma live in counties failing all three tests.

Chronic Obstructive Pulmonary Disease (COPD)—More than 5.1 million people with COPD live in counties that received an F for at least one pollutant. More than 575,000 people with COPD live in counties failing all three tests.

Lung Cancer—More than 68,000 people with lung cancer live in counties that received an F for at least one pollutant. More than 8,000 people with lung cancer live in counties failing all three tests.

Cardiovascular Disease—More than 7.1 million people with cardiovascular diseases live in counties that received an F for at least one pollutant; more than 88,000 people live in counties failing all three tests.

Diabetes—Nearly 3.3 million people with diabetes live in counties that received an F for either short-term or year-round particle pollution; more than 1.3 million live in counties failing both tests. Having diabetes increases the risk of harm from particle pollution.

Poverty—More than 17.7 million people with incomes meeting the federal poverty definition live in counties that received an F for at least one pollutant. Nearly 3.2 million people in poverty live in counties failing all three tests. Evidence shows that people who have low incomes may face higher risk from air pollution.

What Needs to Be Done

Our nation has made significant strides in cleaning up our air, as the progress in the 18 years of this report has shown. Stopping or retreating cannot be an option. Our nation's historic, legal commitment to protect the health of millions of Americans requires more work to reduce the burden of air pollution. Cleaning up air pollution requires a strong and coordinated effort on the part of our federal and state leaders. The President, the EPA administrator, members of Congress, governors and state leaders all have a key role to play. These leaders must support steps to improve the air we breathe so that it does not cause or worsen lung disease. The American Lung Association urges our nation's leaders to stand up for public health and take these important steps to improve the air we all breathe.

Congress must make certain that the Clean Air Act remains strong, fully implemented and enforced.

Protect the Clean Air Act

Our nation's continued air quality improvement shown in the "State of the Air 2017" report is possible only because of the Clean Air Act, a strong public health law put in place by an overwhelming bipartisan majority in Congress more than 45 years ago. Congress wrote the Clean Air Act to set up science-based, technology-fostering steps to protect public health by reducing pollution. Under the Clean Air Act, Congress directed that the EPA and each state take steps to clean up the air. As the "State of the Air 2017" report documents, those steps have reduced ozone and particle pollution in much of the nation.

Unfortunately, some in Congress seek changes to the Clean Air Act that would dismantle key provisions of the law and threaten progress made over nearly five decades. To protect the lives and health of millions of Americans, Congress must protect the Clean Air Act—making certain it remains strong, fully implemented and enforced.

Fight Climate Change by Reducing Carbon Pollution from Power Plants

Power plants comprise the largest stationary source of carbon pollution in the United States. The electric sector contributed 30 percent of all energy-related carbon dioxide (CO_2) emissions in 2014.[2] Scientists tell us that carbon pollution contributes to a warming climate, enhancing conditions for ozone formation and making it harder to reduce this lethal pollutant. Climate change also leads to particle pollution from increased droughts and wildfires. Taking steps to reduce carbon pollution from electricity generation will also reduce ozone and particle pollution from these plants at the same time. EPA's analysis shows that these co-benefits can prevent up to 3,600 premature deaths and up to 90,000 asthma attacks in children in 2030. The American Lung Association calls on governors to direct their states to develop strong plans to reduce carbon pollution from power plants and protect public health.

In 2015, EPA adopted the Clean Power Plan, a flexible, practical tool kit for the states to reduce carbon pollution from power plants approximately 32 percent (below 2005 levels) by 2030. States can choose a variety of ways to cut carbon pollution with the Clean Power Plan. They can choose to require cleaner fuels for existing utilities, improve energy efficiency, produce more clean energy and partner with other states to jointly reduce carbon pollution. In February 2015, the Supreme Court issued a stay on the plan, putting EPA's enforcement of the plan on a temporary hold while the courts hear the case.

Even before the lower court released its decision on the Clean Power Plan, President Trump issued an Executive Order directing EPA Administrator Scott Pruitt to roll back the plan. However, the Lung Association and others will continue to fight to secure reductions in carbon dioxide emissions from power plants and other sources.

Retain the Clean Vehicle Emissions Standards.

Transportation produces more than one quarter of the nation's greenhouse gases that worsen climate change.[3] In 2012, EPA and the National Highway Traffic Safety Administration announced new standards for reducing greenhouse gas emissions from cars, SUVs and light-duty trucks in model years 2017-2025. The emissions standards would reduce 2 billion metric tons of carbon dioxide emissions over the lifetime of the vehicles and would improve fuel efficiency. EPA committed to doing an interim review after the initial phase was in place to see if the longer-term standards for 2012-2025 should still be in place. In January 2017, EPA announced that it had completed its mid-term review and that these emissions standards were appropriate and achievable by the automobile industry for model years 2022-2025. However, in March 2017, EPA Administrator Scott Pruitt and Transportation Secretary Elaine Chao announced the reconsideration of the final determination and reopened EPA's review.

The Lung Association opposed the decision to reopen the review, as EPA had taken an extensive, in-depth examination with public comments before reaching their conclusion. Based on the evidence EPA found before, the Lung Association expects EPA to conclude, again, that the targets should remain in place.

Reduce Emissions from Existing and New Oil and Gas Operations

Oil and gas production wells, processing plants, transmission pipelines and storage units have long emitted harmful gases including methane, volatile organic compounds and other pollutants. As noted earlier, this report found high levels of unhealthy ozone in places where oil and gas production has expanded in the last few years. In May 2016, EPA adopted health-protective standards to reduce harmful emissions of these gases from new and modified sources within the oil and natural gas industry.

However, that action did not affect emissions from the existing oil and gas infrastructure. In November 2016, EPA requested essential information from the oil and gas industry about the location and size of their facilities. Gathering this information is a required step for EPA to eventually limit harmful emissions from these existing sources. The industry objected and, unfortunately, in March 2017, the EPA withdrew its request to the updated information on their facilities, with the explanation that the administrator needed to review the request. The Lung Association calls on the administrator to move forward and set strong pollution control standards for existing oil and gas operations.

These standards would not only help to mitigate climate change and its associated health risks by curtailing emissions of methane—an especially potent greenhouse gas—but would also limit emissions of major precursors to ozone, as well as other toxic and carcinogenic air pollutants, benefiting public health in communities across the country.

Improve the Air Pollution Monitoring Network

The grades in this report come from information from the nationwide air pollution-monitoring network. That network forms the infrastructure for healthy air. States and local governments use monitors to accurately measure the amount of air pollution in the community.

Less than one-third of all counties have ozone or particle pollution monitors, seriously limiting the ability to adequately detect and track the levels of harmful air pollution. Unfortunately, funds for existing air pollution monitors have been cut across the nation. More monitoring is needed near roadways to measure the highest levels of exposures from air pollution related to traffic. Communities that have expanded oil and gas extraction operations need more monitoring.

The President has proposed to cut EPA's budget by 31 percent, including dramatic cuts for state air pollution grants that fund monitoring. With such challenges to our monitoring infrastructure, it may be harder for the nation to ensure accurate, reliable quality data in the future.

What You Can Do

You can do a great deal to help reduce air pollution outdoors. Here's how to speak up and step up:

Speak up for Healthy Air Protections.

Send a message to Congress and to the White House: Protect the Clean Air Act! Urge the President and Congress to support cleaner, healthier air and oppose measures to block or delay the cleanup of air pollution. The President and all members of Congress should support and protect the Clean Air Act.

Tell Congress to support adequate funds for the EPA to implement and enforce the Clean Air Act. EPA works with the states to make sure that the pollution is cleaned up, but they need the resources to do that work.

Tell EPA to follow the law to protect your health. EPA is required to follow the Clean Air Act, completing regular reviews of the science and putting in place steps to clean up sources of pollution to provide that protection. That includes taking steps to reduce pollution that causes climate change. You can provide comments to EPA at public hearings or in writing online. Sign up for more information about times when your voice is needed at www.FightingForAir.org.

Share your story. Do you or any member of your family have a personal reason to fight for healthier, cleaner air? Go to www.FightingForAir.org to let us know how healthy air affects you. Your story helps us remind decision makers what is at stake when it comes to clean air.

Get involved locally. Participate in state and local efforts to clean up air pollution and address climate change. To find your local air pollution control agency, go to www.4cleanair.org.

Step up to Curb Pollution in Your Community.

Drive less. 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.

Use less electricity. Turn out the lights and use energy-efficient appliances. Generating electricity is one of the biggest sources of pollution, particularly in the eastern United States.

Don't burn wood or trash. Burning firewood and trash is among the largest sources of particle pollution in many parts of the country. If you must use a fireplace or stove for heat, convert your woodstove to natural gas, which has far fewer polluting emissions. Compost and recycle as much as possible and dispose of other waste properly; don't burn it. Support efforts in your community to ban outdoor burning of construction and yard wastes. Avoid the use of outdoor hydronic heaters, also called outdoor wood boilers, which are frequently much more polluting than woodstoves.

Make sure your local school system requires clean school buses, which includes replacing or retrofitting old school buses with filters and other equipment to reduce emissions. Make sure your local schools don't idle their buses, a step that can immediately reduce emissions.

1 A complete discussion of the sources of data and the methodology is included in Methodology.

2 U.S. Environmental Protection Agency. *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2014.* Washington, DC: U.S. EPA, 2016. EPA 430-R-16-002.

3 EPA, 2016.

People at Risk from Short-Term Particle Pollution (24-Hour $PM_{2.5}$)

	Chronic Diseases							Age Groups			
In Counties where the Grades were:	Adult Asthma	Pediatric Asthma	COPD	Lung Cancer	CV Disease	Diabetes	Poverty	Under 18	65 and Over	Total Population	Number of Counties
Grade A (0.0)	5,992,655	1,802,928	4,289,711	53,062	5,519,300	6,813,373	12,296,314	19,154,928	12,637,796	85,841,453	288
Grade B (0.3-0.9)	2,487,361	710,302	1,707,641	22,079	2,257,763	2,798,334	5,296,773	8,482,854	5,136,291	36,961,630	111
Grade C (1.0-2.0)	1,497,678	418,793	1,017,268	13,031	1,354,796	1,698,140	3,133,628	5,062,225	3,014,053	21,607,181	54
Grade D (2.1-3.2)	1,034,136	260,265	627,358	8,067	847,006	1,130,589	2,203,289	3,452,500	2,064,381	15,344,010	23
Grade F (3.3+)	2,758,254	821,980	1,571,574	20,540	2,256,027	3,140,522	6,585,074	10,434,818	5,634,316	43,036,931	69
National Population in Counties with $PM_{2.5}$ Monitors	15,156,120	4,405,144	10,236,303	129,977	13,557,088	17,166,636	32,430,455	51,249,670	31,374,325	223,082,364	636

People at Risk from Year-Round Particle Pollution (Annual $PM_{2.5}$)

	Chronic Diseases							Age Groups			
In Counties where the Grades were:	Adult Asthma	Pediatric Asthma	COPD	Lung Cancer	CV Disease	Diabetes	Poverty	Under 18	65 and Over	Total Population	Number of Counties
Pass	11,727,392	3,421,296	7,938,618	100,393	10,429,084	13,115,687	24,212,629	38,997,449	23,983,876	170,682,208	468
Fail	1,215,259	349,400	673,296	9,220	1,011,474	1,495,671	3,455,844	4,738,182	2,612,834	19,870,106	18
National Population in Counties with $PM_{2.5}$ Monitors	15,156,120	4,405,144	10,236,303	129,977	13,557,088	17,166,636	32,430,455	51,249,670	31,374,325	223,082,364	636

People at Risk from Ozone

	Chronic Diseases					Age Groups			
In Counties where the Grades were:	Adult Asthma	Pediatric Asthma	COPD	CV Disease	Poverty	Under 18	65 and Over	Total Population	Number of Counties
Grade A (0.0)	2,135,734	592,588	1,591,631	2,084,164	4,515,103	7,034,893	4,934,132	31,578,049	218
Grade B (0.3-0.9)	1,866,933	547,662	1,429,515	1,831,132	4,001,141	6,187,522	4,137,336	27,423,560	159
Grade C (1.0-2.0)	2,625,700	740,239	1,949,579	2,496,364	4,762,756	8,192,247	5,655,800	36,787,108	167
Grade D (2.1-3.2)	1,752,575	487,238	1,199,321	1,527,279	3,307,983	5,233,129	3,456,203	23,537,106	62
Grade F (3.3+)	7,629,719	2,304,667	4,743,298	6,576,087	16,529,442	27,566,927	15,417,092	116,502,119	161
National Population in Counties with Ozone Monitors	16,218,750	4,732,885	11,069,317	14,726,495	33,546,429	54,859,943	34,098,150	238,804,343	803

Note: *The State of the Air 2017* covers the period 2013-2015. The Appendix provides a full discussion of the methodology.

People at Risk In 25 U.S. Cities Most Polluted by Short-Term Particle Pollution (24-hour $PM_{2.5}$)

2017 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma [4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Diabetes[10]	Poverty[11]
1	Bakersfield, CA	882,176	257,727	88,992	18,417	47,777	23,732	384	36,297	57,322	185,990
2	Visalia-Porterville-Hanford, CA	610,828	185,471	63,293	13,253	32,579	16,291	266	24,985	39,208	154,039
2	Fresno-Madera, CA	1,129,859	322,159	132,448	23,021	62,047	31,883	490	49,778	77,435	274,927
4	Modesto-Merced, CA	806,843	226,215	95,841	16,165	44,619	23,071	350	36,214	56,432	171,672
5	Fairbanks, AK	99,631	24,116	8,349	2,045	7,139	2,756	56	3,943	4,891	7,671
6	San Jose-San Francisco-Oakland, CA	8,713,914	1,877,655	1,214,016	134,173	526,751	280,172	3,779	448,510	696,765	933,311
7	Salt Lake City-Provo-Orem, UT	2,467,709	757,422	231,853	53,789	154,727	60,714	653	90,218	115,839	255,652
8	Logan, UT-ID	133,857	41,508	12,489	3,008	8,322	3,200	38	4,693	5,854	19,910
9	Los Angeles-Long Beach, CA	18,679,763	4,383,662	2,376,130	313,246	1,099,027	571,985	8,096	902,929	1,409,515	2,928,894
10	Reno-Carson City-Fernley, NV	605,706	131,049	102,549	7,661	38,311	33,137	356	39,626	49,111	81,422
11	El Centro, CA	180,191	51,119	22,442	3,653	9,934	5,187	78	8,178	12,647	41,685
12	Lancaster, PA	536,624	128,793	89,727	14,397	41,751	28,456	353	38,439	42,053	55,725
13	Missoula, MT	114,181	22,154	16,172	1,404	8,203	4,628	66	5,905	6,350	17,461
14	Sacramento-Roseville, CA	2,544,026	593,452	374,195	42,407	150,701	81,902	1,102	132,685	204,433	379,600
14	Anchorage, AK	399,790	101,387	38,009	8,596	27,941	11,714	223	17,279	21,498	34,981
16	Yakima, WA	248,830	74,063	32,662	4,838	16,416	10,504	138	13,029	14,296	46,794
17	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,648,605	509,215	497,830	56,223	218,112	158,026	1,748	213,287	232,472	327,752
17	Seattle-Tacoma, WA	4,602,591	1,000,111	626,375	65,324	339,697	216,668	2,557	263,773	293,479	482,638
19	Medford-Grants Pass, OR	297,312	60,886	65,587	5,714	26,407	14,726	167	21,709	28,402	58,695
20	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,183,479	1,592,239	1,085,893	162,777	525,438	349,693	4,605	470,916	542,896	916,171
21	South Bend-Elkhart-Mishawaka, IN-MI	725,065	178,459	113,087	13,523	56,107	43,911	511	54,707	62,712	109,079
21	Harrisburg-York-Lebanon, PA	1,247,235	272,926	209,814	30,509	99,682	68,539	820	92,638	101,485	126,887
23	Eugene, OR	362,895	68,799	64,973	6,456	33,296	16,555	204	23,240	31,518	67,777
24	Phoenix-Mesa-Scottsdale, AZ	4,574,531	1,127,596	670,488	122,981	324,484	214,829	2,233	264,628	340,926	727,788
25	Bend-Redmond-Prineville, OR	196,898	41,110	38,464	3,858	17,521	9,377	111	13,392	17,982	26,721

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
3. Those **under 18** 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.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2013 .
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 U.S. Cities Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

2017 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Diabetes[10]	Poverty[11]
1	Visalia-Porterville-Hanford, CA	610,828	185,471	63,293	13,253	32,579	16,291	266	24,985	39,208	154,039
2	Bakersfield, CA	882,176	257,727	88,992	18,417	47,777	23,732	384	36,297	57,322	185,990
3	Fresno-Madera, CA	1,129,859	322,159	132,448	23,021	62,047	31,883	490	49,778	77,435	274,927
4	San Jose-San Francisco-Oakland, CA	8,713,914	1,877,655	1,214,016	134,173	526,751	280,172	3,779	448,510	696,765	933,311
5	Los Angeles-Long Beach, CA	18,679,763	4,383,662	2,376,130	313,246	1,099,027	571,985	8,096	902,929	1,409,515	2,928,894
6	Modesto-Merced, CA	806,843	226,215	95,841	16,165	44,619	23,071	350	36,214	56,432	171,672
7	El Centro, CA	180,191	51,119	22,442	3,653	9,934	5,187	78	8,178	12,647	41,685
8	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,648,605	509,215	497,830	56,223	218,112	158,026	1,748	213,287	232,472	327,752
9	Cleveland-Akron-Canton, OH	3,493,596	756,784	597,001	54,482	274,623	222,765	2,401	263,764	312,145	497,987
10	San Luis Obispo-Paso Robles-Arroyo Grande, CA	281,401	50,837	51,231	3,633	17,910	10,097	122	16,633	25,113	38,448
11	Medford-Grants Pass, OR	297,312	60,886	65,587	5,714	26,407	14,726	167	21,709	28,402	58,695
11	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,183,479	1,592,239	1,085,893	162,777	525,438	349,693	4,605	470,916	542,896	916,171
13	Indianapolis-Carmel-Muncie, IN	2,372,530	583,997	313,675	43,916	184,825	139,575	1,738	171,702	200,542	329,297
13	Louisville/Jefferson County—Elizabethtown—Madison, KY-IN	1,504,559	346,616	219,919	35,200	133,941	130,160	1,365	133,904	150,903	200,814
13	Johnstown-Somerset, PA	211,933	40,095	44,363	4,482	17,358	12,999	140	18,031	19,502	29,615
16	Houston-The Woodlands, TX	6,855,069	1,829,561	703,418	144,776	382,312	248,754	3,705	381,501	552,311	988,741
17	Fairbanks, AK	99,631	24,116	8,349	2,045	7,139	2,756	56	3,943	4,891	7,671
18	Detroit-Warren-Ann Arbor, MI	5,319,913	1,196,787	801,027	92,712	424,024	314,167	3,379	372,872	436,925	847,421
18	Altoona, PA	125,593	25,939	24,852	2,900	10,102	7,381	82	10,174	11,031	18,616
20	Lancaster, PA	536,624	128,793	89,727	14,397	41,751	28,456	353	38,439	42,053	55,725
20	Cincinnati-Wilmington-Maysville, OH-KY-IN	2,216,735	531,163	311,427	42,406	176,287	145,299	1,650	160,014	188,672	287,495
22	Birmingham-Hoover-Talladega, AL	1,360,082	312,528	209,403	41,245	103,803	110,714	933	116,412	141,142	222,890
22	Harrisburg-York-Lebanon, PA	1,247,235	272,926	209,814	30,509	99,682	68,539	820	92,638	101,485	126,887
22	New York-Newark, NY-NJ-CT-PA	23,723,696	5,178,719	3,461,559	505,108	1,708,629	1,001,947	14,302	1,340,765	1,727,386	3,178,139
25	Erie-Meadville, PA	364,529	78,960	61,087	8,827	29,248	19,931	240	26,881	29,464	57,949

Notes:

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4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2013 .
8. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
9. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 Most Ozone-Polluted Cities

2017 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	CV Disease[8]	Poverty[9]
1	Los Angeles-Long Beach, CA	18,679,763	4,383,662	2,376,130	313,246	1,099,027	571,985	8,096	1,409,515
2	Bakersfield, CA	882,176	257,727	88,992	18,417	47,777	23,732	384	57,322
3	Fresno-Madera, CA	1,129,859	322,159	132,448	23,021	62,047	31,883	490	77,435
4	Visalia-Porterville-Hanford, CA	610,828	185,471	63,293	13,253	32,579	16,291	266	39,208
5	Phoenix-Mesa-Scottsdale, AZ	4,574,531	1,127,596	670,488	122,981	324,484	214,829	2,233	340,926
6	Modesto-Merced, CA	806,843	226,215	95,841	16,165	44,619	23,071	350	56,432
7	San Diego-Carlsbad, CA	3,299,521	728,037	431,999	52,024	197,708	102,514	1,433	250,288
8	Sacramento-Roseville, CA	2,544,026	593,452	374,195	42,407	150,701	81,902	1,102	204,433
9	New York-Newark, NY-NJ-CT-PA	23,723,696	5,178,719	3,461,559	505,108	1,708,629	1,001,947	14,302	1,727,386
10	Las Vegas-Henderson, NV-AZ	2,362,015	543,472	358,944	33,670	149,068	120,361	1,367	179,273
11	Denver-Aurora, CO	3,418,876	802,008	408,996	68,001	237,472	108,795	1,453	169,116
12	Houston-The Woodlands, TX	6,855,069	1,829,561	703,418	144,776	382,312	248,754	3,705	552,311
13	Dallas-Fort Worth, TX-OK	7,538,055	1,990,630	826,555	157,759	422,482	282,033	4,071	625,563
14	El Centro, CA	180,191	51,119	22,442	3,653	9,934	5,187	78	12,647
15	Fort Collins, CO	333,577	67,793	47,570	5,748	24,144	11,356	142	17,585
16	El Paso-Las Cruces, TX-NM	1,053,267	288,219	129,282	23,423	61,859	39,643	538	84,514
17	Redding-Red Bluff, CA	242,841	53,749	47,109	3,841	14,771	8,761	105	22,350
18	San Jose-San Francisco-Oakland, CA	8,713,914	1,877,655	1,214,016	134,173	526,751	280,172	3,779	696,765
19	San Antonio-New Braunfels, TX	2,384,075	612,614	296,086	48,477	134,762	91,254	1,286	202,041
20	Salt Lake City-Provo-Orem, UT	2,467,709	757,422	231,853	53,789	154,727	60,714	653	115,839
21	Hartford-West Hartford, CT	1,483,187	305,454	239,202	35,791	123,794	60,395	936	109,140
22	Baton Rouge, LA	830,480	197,739	105,468	17,303	51,764	45,903	579	76,252
22	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,183,479	1,592,239	1,085,893	162,777	525,438	349,693	4,605	542,896
24	Sheboygan, WI	115,569	26,084	19,254	1,917	8,460	4,412	69	7,810
25	Chico, CA	225,411	45,348	39,543	3,240	13,978	7,812	98	19,274

Notes:

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5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
9. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk in 25 Counties Most Polluted by Short-Term Particle Pollution (24-hour $PM_{2.5}$)

2017 Rank[1]	County	ST	Total Population[2]	At-Risk Groups									High $PM_{2.5}$ Days in Unhealthy Ranges, 2013–2015	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[8]	Diabetes[9]	Poverty[10]	Weighted Avg.[11]	Grade[12]
1	Kern	CA	882,176	257,727	88,992	18,417	47,777	23,732	384	36,297	57,322	185,990	52.7	F
2	Fresno	CA	974,861	279,544	112,074	19,976	53,384	27,289	423	42,457	66,139	241,669	41.2	F
2	Kings	CA	150,965	41,435	14,146	2,961	8,357	4,026	66	6,015	9,555	30,117	41.2	F
4	Stanislaus	CA	538,388	146,063	67,324	10,437	30,189	15,817	233	25,049	38,935	103,646	29.8	F
5	Fairbanks North Star Borough	AK	99,631	24,116	8,349	2,045	7,139	2,756	56	3,943	4,891	7,671	25.8	F
6	Madera	CA	154,998	42,615	20,374	3,045	8,663	4,595	67	7,321	11,296	33,258	24.7	F
7	San Joaquin	CA	726,106	199,894	87,579	14,284	40,454	21,053	315	33,228	51,852	124,606	22.8	F
8	Salt Lake	UT	1,107,314	311,386	109,258	22,113	72,084	28,671	293	42,720	54,993	117,311	21.7	F
9	Cache	UT	120,783	37,123	10,685	2,636	7,531	2,768	32	4,057	5,140	18,657	20.2	F
10	Merced	CA	268,455	80,152	28,517	5,727	14,430	7,254	117	11,165	17,497	68,026	19.5	F
11	Shoshone	ID	12,432	2,464	2,772	209	909	576	6	892	988	2,577	16.8	F
12	Utah	UT	575,205	198,953	42,066	14,129	33,832	12,002	152	17,123	21,908	70,537	15.5	F
13	Lemhi	ID	7,735	1,398	2,193	119	574	398	4	642	694	1,347	14.3	F
14	Riverside	CA	2,361,026	612,848	320,086	43,793	134,810	71,829	1,024	114,813	177,144	377,244	14.0	F
15	Douglas	NV	47,710	8,500	12,234	497	3,145	3,277	28	4,072	4,863	4,459	13.3	F
16	Franklin	ID	13,074	4,385	1,804	372	791	432	6	636	714	1,253	12.7	F
17	Tulare	CA	459,863	144,036	49,147	10,292	24,222	12,265	200	18,970	29,653	123,922	12.5	F
17	Ravalli	MT	41,373	8,214	9,904	521	2,901	2,193	24	3,088	3,060	6,129	12.5	F
19	Plumas	CA	18,409	3,149	4,729	225	1,206	785	8	1,395	2,065	2,503	11.3	F
20	Weber	UT	243,645	70,325	27,606	4,994	15,725	6,546	64	10,045	12,791	29,768	11.0	F
20	Santa Cruz	CA	274,146	54,183	38,794	3,872	16,944	8,989	119	14,364	22,322	40,480	11.0	F
22	Los Angeles	CA	10,170,292	2,279,839	1,277,335	162,912	606,055	312,736	4,407	490,888	767,731	1,675,802	10.5	F
23	Inyo	CA	18,260	3,769	4,044	269	1,139	706	8	1,227	1,827	2,222	9.7	F
23	Lincoln	MT	19,052	3,491	4,903	221	1,360	1,072	11	1,523	1,499	3,817	9.7	F
25	Washoe	NV	446,903	99,275	67,548	5,804	28,100	23,194	263	27,431	34,367	61,017	9.5	F

Notes:

1. Counties are ranked by weighted average. See note 11 below.
2. **Total Population** represents the at-risk populations in counties with PM2.5 monitors.
3. Those **under 18** and **65 and over** are vulnerable to PM2.5 and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2013 .
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
12. The **Weighted Average** was derived by counting the number of days in each unhealthful range (orange, red, purple, maroon) in each year (2013-2015), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple, 2.5 for maroon), and calculating the average.
13. **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

People at Risk In 25 Counties Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

2017 Rank[1]	County	ST	Total Population[2]	At-Risk Groups									$PM_{2.5}$ Annual, 2013–2015	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Diabetes[10]	Poverty[11]	Design Value[12]	Pass/ Grade[13]
1	Kings	CA	150,965	41,435	14,146	2,961	8,357	4,026	66	6,015	9,555	30,117	22.2	Fail
2	Kern	CA	882,176	257,727	88,992	18,417	47,777	23,732	384	36,297	57,322	185,990	20.8	Fail
3	Tulare	CA	459,863	144,036	49,147	10,292	24,222	12,265	200	18,970	29,653	123,922	17.6	Fail
4	Fresno	CA	974,861	279,544	112,074	19,976	53,384	27,289	423	42,457	66,139	241,669	15.4	Fail
5	Madera	CA	154,998	42,615	20,374	3,045	8,663	4,595	67	7,321	11,296	33,258	15.2	Fail
6	Plumas	CA	18,409	3,149	4,729	225	1,206	785	8	1,395	2,065	2,503	14.9	Fail
7	San Joaquin	CA	726,106	199,894	87,579	14,284	40,454	21,053	315	33,228	51,852	124,606	14.2	Fail
8	Riverside	CA	2,361,026	612,848	320,086	43,793	134,810	71,829	1,024	114,813	177,144	377,244	14.1	Fail
9	Stanislaus	CA	538,388	146,063	67,324	10,437	30,189	15,817	233	25,049	38,935	103,646	13.8	Fail
10	Shoshone	ID	12,432	2,464	2,772	209	909	576	6	892	988	2,577	13.7	Fail
11	Imperial	CA	180,191	51,119	22,442	3,653	9,934	5,187	78	8,178	12,647	41,685	13.1	Fail
12	Lemhi	ID	7,735	1,398	2,193	119	574	398	4	642	694	1,347	12.7	Fail
13	Allegheny	PA	1,230,459	233,675	217,210	26,121	102,088	69,398	807	93,646	102,520	145,454	12.6	Fail
14	Merced	CA	268,455	80,152	28,517	5,727	14,430	7,254	117	11,165	17,497	68,026	12.5	Fail
15	Cuyahoga	OH	1,255,921	268,170	210,832	19,306	99,147	79,368	861	93,526	110,646	224,256	12.4	Fail
16	Los Angeles	CA	10,170,292	2,279,839	1,277,335	162,912	606,055	312,736	4,407	490,888	767,731	1,675,802	12.3	Fail
17	San Luis Obispo	CA	281,401	50,837	51,231	3,633	17,910	10,097	122	16,633	25,113	38,448	12.1	Fail
17	Hawaii	HI	196,428	43,217	35,851	4,291	15,151	6,892	99	10,359	13,874	35,294	12.1	Fail
19	San Bernardino	CA	2,128,133	572,173	228,666	40,886	119,170	59,986	923	92,725	146,418	394,031	12.0	Pass
20	Jackson	OR	212,567	44,332	44,244	4,160	18,855	10,252	119	14,926	19,715	40,427	11.8	Pass
20	Philadelphia	PA	1,567,442	346,932	198,475	38,782	127,499	74,034	1,024	94,862	106,183	385,781	11.8	Pass
22	Lincoln	MT	19,052	3,491	4,903	221	1,360	1,072	11	1,523	1,499	3,817	11.7	Pass
22	Marion	IN	939,020	234,220	108,060	17,613	73,292	52,169	686	63,121	75,137	189,323	11.7	Pass
22	Jefferson	KY	763,623	171,811	113,444	18,636	70,483	70,948	727	70,423	78,758	115,246	11.7	Pass
22	Cambria	PA	136,411	26,377	28,534	2,949	11,114	8,324	90	11,550	12,488	19,450	11.7	Pass
22	Washington	PA	208,261	41,143	40,169	4,599	16,954	12,373	137	17,016	18,497	20,501	11.7	Pass

Notes:

1. Counties are ranked by Design Value. See note 11 below.
2. **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those under 18 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.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2014 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma in 2014 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2013 .
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
12. The **Design Value** is the calculated concentration of a pollutant based on the form of the Annual $PM_{2.5}$ National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).
13. **Grades** are based on EPA's determination of meeting or failure to meet the NAAQS for annual $PM_{2.5}$ levels during 2012-2014. Counties meeting the NAAQS received grades of Pass; counties not meeting the NAAQS received grades of Fail.

People at Risk in 25 Most Ozone-Polluted Counties

2017 Rank[1]	County	ST	Total Population[2]	At-Risk Groups							High Ozone Days in Unhealthy Ranges, 2013–2015	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	CV Disease[8]	Poverty[9]	Weighted Avg.[10]	Grade[11]
1	San Bernardino	CA	2,128,133	572,173	228,666	40,886	119,170	59,986	92,725	394,031	142.3	F
2	Riverside	CA	2,361,026	612,848	320,086	43,793	134,810	71,829	114,813	377,244	122.0	F
3	Los Angeles	CA	10,170,292	2,279,839	1,277,335	162,912	606,055	312,736	490,888	1,675,802	108.3	F
4	Kern	CA	882,176	257,727	88,992	18,417	47,777	23,732	36,297	185,990	100.5	F
5	Fresno	CA	974,861	279,544	112,074	19,976	53,384	27,289	42,457	241,669	92.8	F
6	Tulare	CA	459,863	144,036	49,147	10,292	24,222	12,265	18,970	123,922	92.5	F
7	Madera	CA	154,998	42,615	20,374	3,045	8,663	4,595	7,321	33,258	46.8	F
8	Kings	CA	150,965	41,435	14,146	2,961	8,357	4,026	6,015	30,117	44.5	F
9	Maricopa	AZ	4,167,947	1,030,669	592,961	112,410	295,494	193,792	237,849	667,637	34.7	F
10	Uintah	UT	37,928	12,923	3,410	918	2,262	889	1,322	3,733	34.0	F
11	Merced	CA	268,455	80,152	28,517	5,727	14,430	7,254	11,165	68,026	33.3	F
12	San Diego	CA	3,299,521	728,037	431,999	52,024	197,708	102,514	161,074	445,948	31.2	F
13	El Dorado	CA	184,452	37,919	34,393	2,710	11,424	6,776	11,581	16,634	31.0	F
14	Stanislaus	CA	538,388	146,063	67,324	10,437	30,189	15,817	25,049	103,646	30.0	F
15	Sacramento	CA	1,501,335	361,617	198,168	25,840	87,748	46,278	73,651	250,325	26.0	F
16	Nevada	CA	98,877	17,428	24,201	1,245	6,422	4,090	7,193	12,137	25.7	F
17	Fairfield	CT	948,053	220,906	137,799	25,884	76,395	36,729	51,524	83,612	24.0	F
18	Clark	NV	2,114,801	498,564	290,001	29,147	130,554	103,810	121,424	321,755	23.8	F
19	Jefferson	CO	565,524	116,627	85,287	9,889	40,386	20,708	29,549	44,068	23.7	F
20	Harris	TX	4,538,028	1,224,413	428,697	96,889	252,264	158,961	240,522	744,712	23.3	F
21	Tarrant	TX	1,982,498	533,475	208,355	42,215	110,194	72,657	111,992	255,993	23.2	F
21	Denton	TX	780,612	201,646	70,965	15,957	44,046	27,885	42,057	61,186	23.2	F
23	Imperial	CA	180,191	51,119	22,442	3,653	9,934	5,187	8,178	41,685	22.5	F
24	Duchesne	UT	20,862	7,230	2,283	513	1,236	517	802	2,247	21.3	F
25	Larimer	CO	333,577	67,793	47,570	5,748	24,144	11,356	16,259	39,648	19.7	F

Notes:

1. Counties are ranked by weighted average. See note 10 below.
2. **Total Population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **under 18** 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.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2015 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
9. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
10. The **Weighted Average** was derived by counting the number of days in each unhealthful range (orange, red, purple) in each year (2013-2015), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple), and calculating the average.
11. Grade is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Cleanest U.S. Cities for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1]

Metropolitan Statistical Area	Population
Albany-Schenectady, NY	1,173,891
Alexandria, LA	154,484
Asheville-Brevard, NC	480,051
Atlanta—Athens-Clarke County—Sandy Springs, GA	6,365,108
Augusta-Richmond County, GA-SC	590,146
Austin-Round Rock, TX	2,000,860
Bangor, ME	152,692
Beckley, WV	122,507
Bellingham, WA	212,284
Birmingham-Hoover-Talladega, AL	1,360,082
Bowling Green-Glasgow, KY	221,915
Brunswick, GA	116,003
Buffalo-Cheektowaga, NY	1,213,152
Burlington-South Burlington, VT	217,042
Cape Coral-Fort Myers-Naples, FL	1,059,287
Casper, WY	82,178
Charleston-Huntington-Ashland, WV-OH-KY	693,726
Charlotte-Concord, NC-SC	2,583,956
Charlottesville, VA	229,514
Chattanooga-Cleveland-Dalton, TN-GA-AL	950,005
Colorado Springs, CO	697,856
Columbia-Orangeburg-Newberry, SC	937,288
Columbus-Auburn-Opelika, GA-AL	504,865
Columbus-Marion-Zanesville, OH	2,424,831
Corpus Christi-Kingsville-Alice, TX	526,068
Des Moines-Ames-West Des Moines, IA	782,390
Dothan-Enterprise-Ozark, AL	248,947
Eau Claire-Menomonie, WI	210,133
Edwards-Glenwood Springs, CO	129,487
Elmira-Corning, NY	184,702
Erie-Meadville, PA	364,529
Evansville, IN-KY	315,693
Farmington, NM	118,737
Fayetteville-Lumberton-Laurinburg, NC	546,215
Fayetteville-Springdale-Rogers, AR-MO	513,559
Florence, SC	206,448
Florence-Muscle Shoals, AL	146,950
Fort Smith, AR-OK	280,241
Gadsden, AL	103,057
Gainesville-Lake City, FL	345,511
Goldsboro, NC	124,132
Grand Island, NE	85,066
Greensboro—Winston-Salem—High Point, NC	1,642,506
Greenville-Washington, NC	223,493
Gulfport-Biloxi-Pascagoula, MS	389,255
Harrisonburg-Staunton-Waynesboro, VA	251,352
Homosassa Springs, FL	141,058
Hot Springs-Malvern, AR	130,603
Houma-Thibodaux, LA	212,297
Huntsville-Decatur-Albertville, AL	763,287
Jackson-Vicksburg-Brookhaven, MS	670,061
La Crosse-Onalaska, WI-MN	136,985
Lafayette-Opelousas-Morgan City, LA	627,146
Lake Charles-Jennings, LA	237,044
Lakeland-Winter Haven, FL	650,092
Lansing-East Lansing-Owosso, MI	540,895
Lexington-Fayette—Richmond—Frankfort, KY	723,849
Lima-Van Wert-Celina, OH	219,831
Longview-Marshall, TX	284,527
Lynchburg, VA	259,950
McAllen-Edinburg, TX	906,099
Milwaukee-Racine-Waukesha, WI	2,046,692
Mobile-Daphne-Fairhope, AL	619,104
Monroe-Ruston-Bastrop, LA	253,407
Montgomery, AL	373,792
Morgantown-Fairmont, WV	195,101
New Orleans-Metairie-Hammond, LA-MS	1,493,205
North Port-Sarasota, FL	977,491
Oklahoma City-Shawnee, OK	1,430,327
Orlando-Deltona-Daytona Beach, FL	3,129,308
Owensboro, KY	117,463
Palm Bay-Melbourne-Titusville, FL	568,088
Parkersburg-Marietta-Vienna, WV-OH	153,444
Pensacola-Ferry Pass, FL-AL	515,832
Pittsfield, MA	127,828
Pueblo-Cañon City, CO	210,283
Richmond, VA	1,271,334
Rochester-Batavia-Seneca Falls, NY	1,175,724
Rome-Summerville, GA	121,426
Saginaw-Midland-Bay City, MI	382,598
Salisbury, MD-DE	395,300
San Antonio-New Braunfels, TX	2,384,075
Santa Maria-Santa Barbara, CA	444,769
Savannah-Hinesville-Statesboro, GA	532,048
Scranton—Wilkes-Barre—Hazleton, PA	558,166
Sierra Vista-Douglas, AZ	126,427
Springfield-Branson, MO	541,991
Springfield-Greenfield Town, MA	702,583
St. George, UT	155,602
Syracuse-Auburn, NY	738,746
Tampa-St. Petersburg-Clearwater, FL	2,975,225
Texarkana, TX-AR	149,769
Tulsa-Muskogee-Bartlesville, OK	1,151,172
Tuscaloosa, AL	239,908
Urban Honolulu, HI	998,714
Valdosta, GA	142,875
Virginia Beach-Norfolk, VA-NC	1,828,187
Waterloo-Cedar Falls, IA	170,612
Wilmington, NC	277,969

Note:

1. Monitors in these cities reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.

Top 25 Cleanest U.S. Cities for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

Rank[2]	Design Value[3]	Metropolitan Statistical Area	Population
1	4.1	Cheyenne, WY	97,121
1	4.1	Farmington, NM	118,737
3	4.6	Casper, WY	82,178
4	4.8	Kahului-Wailuku-Lahaina, HI	164,726
5	5.3	Bismarck, ND	129,517
6	5.4	Urban Honolulu, HI	998,714
7	5.6	Palm Bay-Melbourne-Titusville, FL	568,088
8	5.7	Colorado Springs, CO	697,856
8	5.7	Elmira-Corning, NY	184,702
10	5.8	Pueblo-Cañon City, CO	210,283
11	5.9	Cape Coral-Fort Myers-Naples, FL	1,059,287
12	6.0	Miami-Fort Lauderdale-Port St. Lucie, FL	6,654,565
13	6.1	North Port-Sarasota, FL	977,491
14	6.2	Redding-Red Bluff, CA	242,841
14	6.2	Homosassa Springs, FL	141,058
14	6.2	Orlando-Deltona-Daytona Beach, FL	3,129,308
17	6.3	Salinas, CA	433,898
17	6.3	Burlington-South Burlington, VT	217,042
19	6.4	Fargo-Wahpeton, ND-MN	256,634
19	6.4	Yuma, AZ	204,275
19	6.4	Bangor, ME	152,692
19	6.4	Syracuse-Auburn, NY	738,746
23	6.5	Lakeland-Winter Haven, FL	650,092
23	6.5	Sierra Vista-Douglas, AZ	126,427
23	6.5	Wilmington, NC	277,969

Notes:

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

2. Cities are ranked by using the highest design value for any county within that metropolitan area.

3. The **Design Value** is the calculated concentration of a pollutant based on the form of the Annual $PM_{2.5}$ National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).

Cleanest U.S. Cities for Ozone Air Pollution[1]

Metropolitan Statistical Area	Population
Bellingham, WA	212,284
Blacksburg-Christiansburg-Radford, VA	181,747
Brownsville-Harlingen-Raymondville, TX	444,059
Brunswick, GA	116,003
Burlington-South Burlington, VT	217,042
Cape Coral-Fort Myers-Naples, FL	1,059,287
Cedar Rapids-Iowa City, IA	432,538
Charleston-North Charleston, SC	744,526
Charlottesville, VA	229,514
Columbia-Moberly-Mexico, MO	226,174
Columbia-Orangeburg-Newberry, SC	937,288
Decatur, IL	107,303
Des Moines-Ames-West Des Moines, IA	782,390
Dothan-Enterprise-Ozark, AL	248,947
Eau Claire-Menomonie, WI	210,133
Elmira-Corning, NY	184,702
Fairbanks, AK	99,631
Fargo-Wahpeton, ND-MN	256,634
Fayetteville-Springdale-Rogers, AR-MO	513,559
Florence, SC	206,448
Florence-Muscle Shoals, AL	146,950
Fort Wayne-Huntington-Auburn, IN	626,124
Gadsden, AL	103,057
Gainesville-Lake City, FL	345,511
Greenville-Washington, NC	223,493
Harrisonburg-Staunton-Waynesboro, VA	251,352
Hickory-Lenoir, NC	407,499
Idaho Falls-Rexburg-Blackfoot, ID	235,829
Ithaca-Cortland, NY	153,420
Jackson-Vicksburg-Brookhaven, MS	670,061
Jefferson City, MO	151,145
Johnson City-Kingsport-Bristol, TN-VA	507,768
La Crosse-Onalaska, WI-MN	136,985
Lincoln-Beatrice, NE	345,478
McAllen-Edinburg, TX	906,099
Missoula, MT	114,181
Monroe-Ruston-Bastrop, LA	253,407
New Bern-Morehead City, NC	195,124
Ocala, FL	343,254
Palm Bay-Melbourne-Titusville, FL	568,088
Peoria-Canton, IL	413,717
Quincy-Hannibal, IL-MO	116,296
Rapid City-Spearfish, SD	168,961
Roanoke, VA	314,560
Rochester-Austin, MN	252,989
Rome-Summerville, GA	121,426
Salinas, CA	433,898
Savannah-Hinesville-Statesboro, GA	532,048
Sebring, FL	99,491
Sioux City-Vermillion, IA-SD-NE	183,033
Sioux Falls, SD	251,854
Springfield-Branson, MO	541,991
Springfield-Jacksonville-Lincoln, IL	314,212
Steamboat Springs-Craig, CO	37,067
Tallahassee-Bainbridge, FL-GA	405,098
Terre Haute, IN	171,019
Tuscaloosa, AL	239,908
Urban Honolulu, HI	998,714
Utica-Rome, NY	295,600
Waterloo-Cedar Falls, IA	170,612
Williamsport-Lock Haven, PA	155,489
Wilmington, NC	277,969

Notes:

1. This list represents cities with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 NAAQS.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1]

County	State	MSAs and Respective CSA[2]
Baldwin	AL	Mobile-Daphne-Fairhope, AL
Clay	AL	
Colbert	AL	Florence-Muscle Shoals, AL
DeKalb	AL	Huntsville-Decatur-Albertville, AL
Etowah	AL	Gadsden, AL
Houston	AL	Dothan-Enterprise-Ozark, AL
Jefferson	AL	Birmingham-Hoover-Talladega, AL
Madison	AL	Huntsville-Decatur-Albertville, AL
Mobile	AL	Mobile-Daphne-Fairhope, AL
Montgomery	AL	Montgomery, AL
Morgan	AL	Huntsville-Decatur-Albertville, AL
Russell	AL	Columbus-Auburn-Opelika, GA-AL
Shelby	AL	Birmingham-Hoover-Talladega, AL
Talladega	AL	Birmingham-Hoover-Talladega, AL
Tuscaloosa	AL	Tuscaloosa, AL
Arkansas	AR	
Ashley	AR	
Garland	AR	Hot Springs-Malvern, AR
Jackson	AR	
Polk	AR	
Union	AR	
Washington	AR	Fayetteville-Springdale-Rogers, AR-MO
Cochise	AZ	Sierra Vista-Douglas, AZ
Mohave	AZ	Las Vegas-Henderson, NV-AZ
Pima	AZ	Tucson-Nogales, AZ
San Benito	CA	San Jose-San Francisco-Oakland, CA
Santa Barbara	CA	Santa Maria-Santa Barbara, CA
Sonoma	CA	San Jose-San Francisco-Oakland, CA
Ventura	CA	Los Angeles-Long Beach, CA
Yolo	CA	Sacramento-Roseville, CA
Arapahoe	CO	Denver-Aurora, CO
El Paso	CO	Colorado Springs, CO
Garfield	CO	Edwards-Glenwood Springs, CO
La Plata	CO	
Montezuma	CO	
Pueblo	CO	Pueblo-Cañon City, CO
Rio Blanco	CO	
Hartford	CT	Hartford-West Hartford, CT
Litchfield	CT	New York-Newark, NY-NJ-CT-PA
District of Columbia	DC	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Kent	DE	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Sussex	DE	Salisbury, MD-DE
Alachua	FL	Gainesville-Lake City, FL
Brevard	FL	Palm Bay-Melbourne-Titusville, FL
Broward	FL	Miami-Fort Lauderdale-Port St. Lucie, FL
Citrus	FL	Homosassa Springs, FL
Escambia	FL	Pensacola-Ferry Pass, FL-AL
Hillsborough	FL	Tampa-St. Petersburg-Clearwater, FL
Lee	FL	Cape Coral-Fort Myers-Naples, FL
Orange	FL	Orlando-Deltona-Daytona Beach, FL
Palm Beach	FL	Miami-Fort Lauderdale-Port St. Lucie, FL
Pinellas	FL	Tampa-St. Petersburg-Clearwater, FL
Polk	FL	Lakeland-Winter Haven, FL
Sarasota	FL	North Port-Sarasota, FL
Seminole	FL	Orlando-Deltona-Daytona Beach, FL
Volusia	FL	Orlando-Deltona-Daytona Beach, FL
Chatham	GA	Savannah-Hinesville-Statesboro, GA
Clarke	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Clayton	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Cobb	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
DeKalb	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Floyd	GA	Rome-Summerville, GA
Fulton	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Glynn	GA	Brunswick, GA
Gwinnett	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Hall	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Houston	GA	Macon-Bibb County—Warner Robins, GA
Lowndes	GA	Valdosta, GA
Muscogee	GA	Columbus-Auburn-Opelika, GA-AL
Paulding	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Richmond	GA	Augusta-Richmond County, GA-SC
Walker	GA	Chattanooga-Cleveland-Dalton, TN-GA-AL
Washington	GA	
Honolulu	HI	Urban Honolulu, HI
Kauai	HI	
Black Hawk	IA	Waterloo-Cedar Falls, IA
Delaware	IA	
Lee	IA	
Palo Alto	IA	
Polk	IA	Des Moines-Ames-West Des Moines, IA
Van Buren	IA	
Dubois	IN	

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the current (2006) standard (U.S. EPA).
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statisical Area and includes one or more counties. CSA stands for Combined Statistical Area and may include multiple MSAs and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Greene	IN	
Spencer	IN	
Vanderburgh	IN	Evansville, IN-KY
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Bell	KY	
Boyd	KY	Charleston-Huntington-Ashland, WV-OH-KY
Campbell	KY	Cincinnati-Wilmington-Maysville, OH-KY-IN
Carter	KY	
Christian	KY	Clarksville, TN-KY
Daviess	KY	Owensboro, KY
Fayette	KY	Lexington-Fayette—Richmond—Frankfort, KY
Hardin	KY	Louisville/Jefferson County—Elizabethtown—Madison, KY-IN
Henderson	KY	Evansville, IN-KY
Madison	KY	Lexington-Fayette—Richmond—Frankfort, KY
McCracken	KY	Paducah-Mayfield, KY-IL
Perry	KY	
Pulaski	KY	
Warren	KY	Bowling Green-Glasgow, KY
Calcasieu Parish	LA	Lake Charles-Jennings, LA
Iberville Parish	LA	Baton Rouge, LA
Jefferson Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Lafayette Parish	LA	Lafayette-Opelousas-Morgan City, LA
Ouachita Parish	LA	Monroe-Ruston-Bastrop, LA
Rapides Parish	LA	Alexandria, LA
St. Bernard Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Tangipahoa Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Terrebonne Parish	LA	Houma-Thibodaux, LA
West Baton Rouge Parish	LA	Baton Rouge, LA
Berkshire	MA	Pittsfield, MA
Bristol	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Essex	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Hampden	MA	Springfield-Greenfield Town, MA
Plymouth	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Suffolk	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Worcester	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Anne Arundel	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Baltimore	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Dorchester	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Garrett	MD	
Harford	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Kent	MD	
Montgomery	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Prince George's	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Penobscot	ME	Bangor, ME
Allegan	MI	Grand Rapids-Wyoming-Muskegon, MI
Bay	MI	Saginaw-Midland-Bay City, MI
Berrien	MI	South Bend-Elkhart-Mishawaka, IN-MI
Chippewa	MI	
Ingham	MI	Lansing-East Lansing-Owosso, MI
Lenawee	MI	Detroit-Warren-Ann Arbor, MI
Missaukee	MI	
Washtenaw	MI	Detroit-Warren-Ann Arbor, MI
Dakota	MN	Minneapolis-St. Paul, MN-WI
Scott	MN	Minneapolis-St. Paul, MN-WI
Wright	MN	Minneapolis-St. Paul, MN-WI
Cedar	MO	
Greene	MO	Springfield-Branson, MO
Grenada	MS	
Hancock	MS	Gulfport-Biloxi-Pascagoula, MS
Harrison	MS	Gulfport-Biloxi-Pascagoula, MS
Hinds	MS	Jackson-Vicksburg-Brookhaven, MS
Jackson	MS	Gulfport-Biloxi-Pascagoula, MS
Alamance	NC	Greensboro—Winston-Salem—High Point, NC
Buncombe	NC	Asheville-Brevard, NC
Caswell	NC	
Catawba	NC	Hickory-Lenoir, NC
Cumberland	NC	Fayetteville-Lumberton-Laurinburg, NC
Davidson	NC	Greensboro—Winston-Salem—High Point, NC
Duplin	NC	
Durham	NC	Raleigh-Durham-Chapel Hill, NC
Forsyth	NC	Greensboro—Winston-Salem—High Point, NC
Gaston	NC	Charlotte-Concord, NC-SC
Guilford	NC	Greensboro—Winston-Salem—High Point, NC
Haywood	NC	Asheville-Brevard, NC
Jackson	NC	
Johnston	NC	Raleigh-Durham-Chapel Hill, NC
Martin	NC	
Mecklenburg	NC	Charlotte-Concord, NC-SC
Mitchell	NC	
Montgomery	NC	
New Hanover	NC	Wilmington, NC
Pitt	NC	Greenville-Washington, NC
Rowan	NC	Charlotte-Concord, NC-SC
Swain	NC	

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the current (2006) standard (U.S. EPA).
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statisical Area and includes one or more counties. CSA stands for Combined Statistical Area and may include multiple MSAs and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Wayne	NC	Goldsboro, NC
Hall	NE	Grand Island, NE
Scotts Bluff	NE	
Belknap	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Grafton	NH	
Hillsborough	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Rockingham	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Atlantic	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Bergen	NJ	New York-Newark, NY-NJ-CT-PA
Gloucester	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Mercer	NJ	New York-Newark, NY-NJ-CT-PA
Middlesex	NJ	New York-Newark, NY-NJ-CT-PA
Morris	NJ	New York-Newark, NY-NJ-CT-PA
Passaic	NJ	New York-Newark, NY-NJ-CT-PA
Warren	NJ	New York-Newark, NY-NJ-CT-PA
San Juan	NM	Farmington, NM
Albany	NY	Albany-Schenectady, NY
Bronx	NY	New York-Newark, NY-NJ-CT-PA
Chautauqua	NY	
Erie	NY	Buffalo-Cheektowaga, NY
Essex	NY	
Kings	NY	New York-Newark, NY-NJ-CT-PA
Monroe	NY	Rochester-Batavia-Seneca Falls, NY
New York	NY	New York-Newark, NY-NJ-CT-PA
Onondaga	NY	Syracuse-Auburn, NY
Orange	NY	New York-Newark, NY-NJ-CT-PA
Queens	NY	New York-Newark, NY-NJ-CT-PA
Richmond	NY	New York-Newark, NY-NJ-CT-PA
Steuben	NY	Elmira-Corning, NY
Suffolk	NY	New York-Newark, NY-NJ-CT-PA
Allen	OH	Lima-Van Wert-Celina, OH
Athens	OH	
Butler	OH	Cincinnati-Wilmington-Maysville, OH-KY-IN
Clark	OH	Dayton-Springfield-Sidney, OH
Franklin	OH	Columbus-Marion-Zanesville, OH
Greene	OH	Dayton-Springfield-Sidney, OH
Lake	OH	Cleveland-Akron-Canton, OH
Lawrence	OH	Charleston-Huntington-Ashland, WV-OH-KY
Lorain	OH	Cleveland-Akron-Canton, OH
Mahoning	OH	Youngstown-Warren, OH-PA
Medina	OH	Cleveland-Akron-Canton, OH
Portage	OH	Cleveland-Akron-Canton, OH
Preble	OH	
Scioto	OH	Charleston-Huntington-Ashland, WV-OH-KY
Trumbull	OH	Youngstown-Warren, OH-PA
Oklahoma	OK	Oklahoma City-Shawnee, OK
Sequoyah	OK	Fort Smith, AR-OK
Tulsa	OK	Tulsa-Muskogee-Bartlesville, OK
Armstrong	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
Erie	PA	Erie-Meadville, PA
Lackawanna	PA	Scranton—Wilkes-Barre—Hazleton, PA
Monroe	PA	New York-Newark, NY-NJ-CT-PA
Westmoreland	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
Kent	RI	Boston-Worcester-Providence, MA-RI-NH-CT
Washington	RI	Boston-Worcester-Providence, MA-RI-NH-CT
Chesterfield	SC	
Edgefield	SC	Augusta-Richmond County, GA-SC
Florence	SC	Florence, SC
Lexington	SC	Columbia-Orangeburg-Newberry, SC
Richland	SC	Columbia-Orangeburg-Newberry, SC
Spartanburg	SC	Greenville-Spartanburg-Anderson, SC
Brown	SD	
Hamilton	TN	Chattanooga-Cleveland-Dalton, TN-GA-AL
McMinn	TN	Chattanooga-Cleveland-Dalton, TN-GA-AL
Bexar	TX	San Antonio-New Braunfels, TX
Bowie	TX	Texarkana, TX-AR
Ellis	TX	Dallas-Fort Worth, TX-OK
Galveston	TX	Houston-The Woodlands, TX
Harrison	TX	Longview-Marshall, TX
Hidalgo	TX	McAllen-Edinburg, TX
Nueces	TX	Corpus Christi-Kingsville-Alice, TX
Travis	TX	Austin-Round Rock, TX
Washington	UT	St. George, UT
Albemarle	VA	Charlottesville, VA
Arlington	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Bristol City	VA	Johnson City-Kingsport-Bristol, TN-VA
Charles City	VA	Richmond, VA
Chesterfield	VA	Richmond, VA
Fairfax	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Hampton City	VA	Virginia Beach-Norfolk, VA-NC
Henrico	VA	Richmond, VA
Loudoun	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Lynchburg City	VA	Lynchburg, VA
Norfolk City	VA	Virginia Beach-Norfolk, VA-NC
Page	VA	
Rockingham	VA	Harrisonburg-Staunton-Waynesboro, VA

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the current (2006) standard (U.S. EPA).
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statisical Area and includes one or more counties. CSA stands for Combined Statistical Area and may include multiple MSAs and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Salem City	VA	Roanoke, VA
Virginia Beach City	VA	Virginia Beach-Norfolk, VA-NC
Bennington	VT	
Chittenden	VT	Burlington-South Burlington, VT
Kitsap	WA	Seattle-Tacoma, WA
Skagit	WA	Seattle-Tacoma, WA
Whatcom	WA	Bellingham, WA
Ashland	WI	
Dodge	WI	Milwaukee-Racine-Waukesha, WI
Eau Claire	WI	Eau Claire-Menomonie, WI
Forest	WI	
Grant	WI	
La Crosse	WI	La Crosse-Onalaska, WI-MN
Milwaukee	WI	Milwaukee-Racine-Waukesha, WI
Ozaukee	WI	Milwaukee-Racine-Waukesha, WI
Sauk	WI	Madison-Janesville-Beloit, WI
Taylor	WI	
Vilas	WI	
Waukesha	WI	Milwaukee-Racine-Waukesha, WI
Brooke	WV	Pittsburgh-New Castle-Weirton, PA-OH-WV
Cabell	WV	Charleston-Huntington-Ashland, WV-OH-KY
Hancock	WV	Pittsburgh-New Castle-Weirton, PA-OH-WV
Harrison	WV	
Kanawha	WV	Charleston-Huntington-Ashland, WV-OH-KY
Marion	WV	Morgantown-Fairmont, WV
Marshall	WV	Wheeling, WV-OH
Monongalia	WV	Morgantown-Fairmont, WV
Raleigh	WV	Beckley, WV
Wood	WV	Parkersburg-Marietta-Vienna, WV-OH
Albany	WY	
Carbon	WY	
Natrona	WY	Casper, WY
Park	WY	
Sublette	WY	
Sweetwater	WY	
Teton	WY	

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the current (2006) standard (U.S. EPA).
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statistical Area and includes one or more counties. CSA stands for Combined Statistical Area and may include multiple MSAs and individual counties.

Top 25 Cleanest Counties for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

2017 Rank[2]	County	State	Design Value[3]
1	Custer	SD	3.2
2	McKenzie	ND	3.4
3	Kauai	HI	3.9
3	Lake	CA	4.0
4	San Juan	NM	4.1
4	Laramie	WY	4.1
4	Essex	NY	4.1
4	Park	WY	4.1
9	Campbell	WY	4.2
10	Albany	WY	4.3
11	Fergus	MT	4.5
12	Natrona	WY	4.6
13	Jackson	SD	4.7
13	Teton	WY	4.7
15	Sweetwater	WY	4.8
15	Lake	MN	4.8
15	Maui	HI	4.8
18	Kent	RI	4.9
18	Oliver	ND	4.9
18	Phillips	MT	4.9
18	Billings	ND	4.9
22	San Benito	CA	5.0
22	Vilas	WI	5.0
22	Sublette	WY	5.0
22	Belknap	NH	5.0

Notes:

1. This list represents counties with the lowest levels of monitored long term $PM_{2.5}$ air pollution.
2. Counties are ranked by Design Value.
3. The Design Value is the calculated concentration of a pollutant based on the form of the Annual PM2.5 National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).

Cleanest Counties for Ozone Air Pollution[1]

County	State	Metropolitan Statistical Area
Denali Borough	AK	
Fairbanks North Star Borough	AK	Fairbanks, AK
Colbert	AL	Florence-Muscle Shoals, AL
Etowah	AL	Gadsden, AL
Houston	AL	Dothan-Enterprise-Ozark, AL
Madison	AL	Huntsville-Decatur-Albertville, AL
Morgan	AL	Huntsville-Decatur-Albertville, AL
Sumter	AL	
Tuscaloosa	AL	Tuscaloosa, AL
Newton	AR	
Polk	AR	
Washington	AR	Fayetteville-Springdale-Rogers, AR-MO
Colusa	CA	
Humboldt	CA	
Lake	CA	
Marin	CA	San Jose-San Francisco-Oakland, CA
Mendocino	CA	
Monterey	CA	Salinas, CA
San Francisco	CA	San Jose-San Francisco-Oakland, CA
Santa Cruz	CA	San Jose-San Francisco-Oakland, CA
Sonoma	CA	San Jose-San Francisco-Oakland, CA
Moffat	CO	Steamboat Springs-Craig, CO
Montezuma	CO	
Alachua	FL	Gainesville-Lake City, FL
Baker	FL	Jacksonville-St. Marys-Palatka, FL-GA
Brevard	FL	Palm Bay-Melbourne-Titusville, FL
Collier	FL	Cape Coral-Fort Myers-Naples, FL
Columbia	FL	Gainesville-Lake City, FL
Flagler	FL	Orlando-Deltona-Daytona Beach, FL
Highlands	FL	Sebring, FL
Holmes	FL	
Lee	FL	Cape Coral-Fort Myers-Naples, FL
Leon	FL	Tallahassee-Bainbridge, FL-GA
Liberty	FL	
Marion	FL	Ocala, FL
Seminole	FL	Orlando-Deltona-Daytona Beach, FL
Wakulla	FL	Tallahassee-Bainbridge, FL-GA
Chatham	GA	Savannah-Hinesville-Statesboro, GA
Chattooga	GA	Rome-Summerville, GA
Clarke	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Columbia	GA	Augusta-Richmond County, GA-SC
Glynn	GA	Brunswick, GA
Muscogee	GA	Columbus-Auburn-Opelika, GA-AL
Paulding	GA	Atlanta—Athens-Clarke County—Sandy Springs, GA
Richmond	GA	Augusta-Richmond County, GA-SC
Sumter	GA	
Honolulu	HI	Urban Honolulu, HI
Bremer	IA	Waterloo-Cedar Falls, IA
Linn	IA	Cedar Rapids-Iowa City, IA
Polk	IA	Des Moines-Ames-West Des Moines, IA
Scott	IA	Davenport-Moline, IA-IL
Story	IA	Des Moines-Ames-West Des Moines, IA
Van Buren	IA	
Warren	IA	Des Moines-Ames-West Des Moines, IA
Butte	ID	Idaho Falls-Rexburg-Blackfoot, ID
Adams	IL	Quincy-Hannibal, IL-MO
Clark	IL	
Effingham	IL	
Hamilton	IL	
Macon	IL	Decatur, IL
Macoupin	IL	St. Louis-St. Charles-Farmington, MO-IL
Peoria	IL	Peoria-Canton, IL
Sangamon	IL	Springfield-Jacksonville-Lincoln, IL
Will	IL	Chicago-Naperville, IL-IN-WI
Allen	IN	Fort Wayne-Huntington-Auburn, IN
Delaware	IN	Indianapolis-Carmel-Muncie, IN
Elkhart	IN	South Bend-Elkhart-Mishawaka, IN-MI
Hamilton	IN	Indianapolis-Carmel-Muncie, IN
Hancock	IN	Indianapolis-Carmel-Muncie, IN
Hendricks	IN	Indianapolis-Carmel-Muncie, IN
Huntington	IN	Fort Wayne-Huntington-Auburn, IN
Johnson	IN	Indianapolis-Carmel-Muncie, IN
Knox	IN	
Madison	IN	Indianapolis-Carmel-Muncie, IN
Morgan	IN	Indianapolis-Carmel-Muncie, IN
Shelby	IN	Indianapolis-Carmel-Muncie, IN
Vigo	IN	Terre Haute, IN
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Trego	KS	
Bell	KY	
Carter	KY	
Morgan	KY	
Perry	KY	
Pike	KY	
Pulaski	KY	
Warren	KY	Bowling Green-Glasgow, KY
Ouachita Parish	LA	Monroe-Ruston-Bastrop, LA
Androscoggin	ME	Portland-Lewiston-South Portland, ME
Aroostook	ME	
Oxford	ME	
Chippewa	MI	
Becker	MN	
Crow Wing	MN	

Notes:

1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 NAAQS.

Cleanest Counties for Ozone Air Pollution[1] (cont.)

County	State	Metropolitan Statistical Area
Goodhue	MN	Minneapolis-St. Paul, MN-WI
Hennepin	MN	Minneapolis-St. Paul, MN-WI
Lake	MN	
Mille Lacs	MN	Minneapolis-St. Paul, MN-WI
Olmsted	MN	Rochester-Austin, MN
St. Louis	MN	Duluth, MN-WI
Stearns	MN	Minneapolis-St. Paul, MN-WI
Washington	MN	Minneapolis-St. Paul, MN-WI
Boone	MO	Columbia-Moberly-Mexico, MO
Callaway	MO	Jefferson City, MO
Cass	MO	Kansas City-Overland Park-Kansas City, MO-KS
Greene	MO	Springfield-Branson, MO
Taney	MO	Springfield-Branson, MO
Hinds	MS	Jackson-Vicksburg-Brookhaven, MS
Lauderdale	MS	
Fergus	MT	
Flathead	MT	
Lewis and Clark	MT	
Missoula	MT	Missoula, MT
Phillips	MT	
Powder River	MT	
Richland	MT	
Rosebud	MT	
Alexander	NC	Hickory-Lenoir, NC
Avery	NC	
Buncombe	NC	Asheville-Brevard, NC
Caldwell	NC	Hickory-Lenoir, NC
Carteret	NC	New Bern-Morehead City, NC
Chatham	NC	Raleigh-Durham-Chapel Hill, NC
Durham	NC	Raleigh-Durham-Chapel Hill, NC
Franklin	NC	Raleigh-Durham-Chapel Hill, NC
Granville	NC	Raleigh-Durham-Chapel Hill, NC
Johnston	NC	Raleigh-Durham-Chapel Hill, NC
Lenoir	NC	
Macon	NC	
Martin	NC	
Montgomery	NC	
New Hanover	NC	Wilmington, NC
Pitt	NC	Greenville-Washington, NC
Swain	NC	
Billings	ND	
Burke	ND	
Burleigh	ND	Bismarck, ND
Cass	ND	Fargo-Wahpeton, ND-MN
McKenzie	ND	
Mercer	ND	
Williams	ND	
Knox	NE	
Lancaster	NE	Lincoln-Beatrice, NE
Belknap	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Sandoval	NM	Albuquerque-Santa Fe-Las Vegas, NM
Santa Fe	NM	Albuquerque-Santa Fe-Las Vegas, NM
Albany	NY	Albany-Schenectady, NY
Hamilton	NY	
Herkimer	NY	Utica-Rome, NY
Monroe	NY	Rochester-Batavia-Seneca Falls, NY
Onondaga	NY	Syracuse-Auburn, NY
Steuben	NY	Elmira-Corning, NY
Tompkins	NY	Ithaca-Cortland, NY
Lorain	OH	Cleveland-Akron-Canton, OH
Portage	OH	Cleveland-Akron-Canton, OH
Summit	OH	Cleveland-Akron-Canton, OH
Caddo	OK	
Columbia	OR	Portland-Vancouver-Salem, OR-WA
Bradford	PA	
Clearfield	PA	State College-DuBois, PA
Lycoming	PA	Williamsport-Lock Haven, PA
Abbeville	SC	Greenville-Spartanburg-Anderson, SC
Aiken	SC	Augusta-Richmond County, GA-SC
Anderson	SC	Greenville-Spartanburg-Anderson, SC
Berkeley	SC	Charleston-North Charleston, SC
Charleston	SC	Charleston-North Charleston, SC
Chesterfield	SC	
Colleton	SC	
Darlington	SC	Florence, SC
Oconee	SC	Greenville-Spartanburg-Anderson, SC
Pickens	SC	Greenville-Spartanburg-Anderson, SC
Richland	SC	Columbia-Orangeburg-Newberry, SC
York	SC	Charlotte-Concord, NC-SC
Brookings	SD	
Custer	SD	Rapid City-Spearfish, SD
Jackson	SD	
Meade	SD	Rapid City-Spearfish, SD
Minnehaha	SD	Sioux Falls, SD
Union	SD	Sioux City-Vermillion, IA-SD-NE
Anderson	TN	Knoxville-Morristown-Sevierville, TN
Claiborne	TN	
DeKalb	TN	
Sevier	TN	Knoxville-Morristown-Sevierville, TN
Sullivan	TN	Johnson City-Kingsport-Bristol, TN-VA
Wilson	TN	Nashville-Davidson—Murfreesboro, TN
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Hidalgo	TX	McAllen-Edinburg, TX
Albemarle	VA	Charlottesville, VA

Notes:

1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 NAAQS.

Cleanest Counties for Ozone Air Pollution[1] (cont.)

County	State	Metropolitan Statistical Area
Caroline	VA	Richmond, VA
Chesterfield	VA	Richmond, VA
Fauquier	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Frederick	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Giles	VA	Blacksburg-Christiansburg-Radford, VA
Madison	VA	
Page	VA	
Roanoke	VA	Roanoke, VA
Rockbridge	VA	
Rockingham	VA	Harrisonburg-Staunton-Waynesboro, VA
Wythe	VA	
Chittenden	VT	Burlington-South Burlington, VT
Clallam	WA	
Pierce	WA	Seattle-Tacoma, WA
Skagit	WA	Seattle-Tacoma, WA
Thurston	WA	Seattle-Tacoma, WA
Whatcom	WA	Bellingham, WA
Ashland	WI	
Eau Claire	WI	Eau Claire-Menomonie, WI
Forest	WI	
La Crosse	WI	La Crosse-Onalaska, WI-MN
Taylor	WI	
Berkeley	WV	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Gilmer	WV	
Greenbrier	WV	
Big Horn	WY	
Campbell	WY	
Fremont	WY	
Teton	WY	
Weston	WY	

Notes:

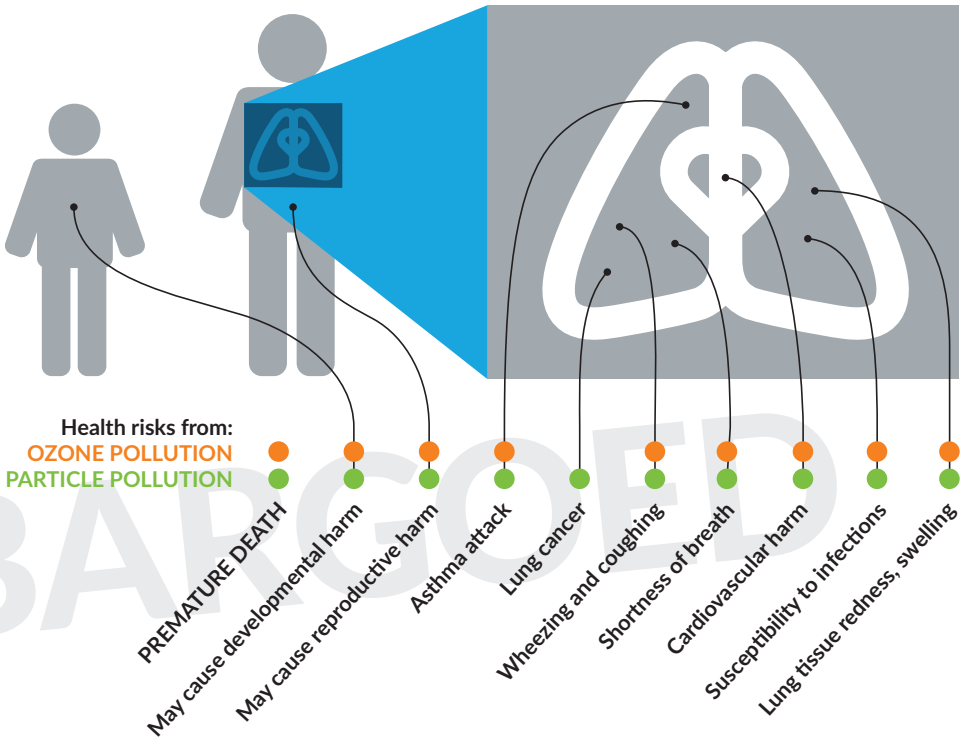
1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 NAAQS.

Health Effects of Ozone and Particle Pollution

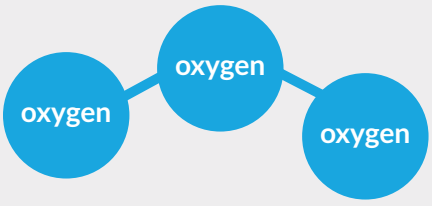
Two types of air pollution dominate in the U.S.: ozone and particle pollution.[1] These two pollutants threaten the health and the lives of millions of Americans. Thanks to the Clean Air Act, the U.S. has far less of both pollutants now than in the past. Still, more than 125 million people live in counties where monitors show unhealthy levels of one or both—meaning the air a family breathes could shorten life or cause lung cancer.

So what are ozone and particle pollution?

Air pollution remains a major danger to the health of children and adults.



Ozone Pollution



Ozone (O_3) is a gas molecule composed of three oxygen atoms.

It may be hard to imagine that pollution could be invisible, but ozone is. The most widespread pollutant in the U.S. is also one of the most dangerous.

Scientists have studied the effects of ozone on health for decades. Hundreds of research studies have confirmed that ozone harms people at levels currently found in the United States. In the last few years, we've learned that it can also be deadly.

What Is Ozone?

Ozone (O_3) is a gas molecule composed of three oxygen atoms. Often called "smog," ozone is harmful to breathe. Ozone aggressively attacks lung tissue by reacting chemically with it.

The ozone layer found high in the upper atmosphere (the stratosphere) 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) causes serious health problems.

Where Does Ozone Come From?

Ozone develops in the atmosphere from gases that come out of tailpipes, smokestacks and many other sources. When these gases come in contact with sunlight, they react and form ozone smog.

The essential raw ingredients for ozone come from nitrogen oxides (NO_x); hydrocarbons, also called volatile organic compounds (VOCs); and carbon monoxide (CO). They are

When gases that come out of tailpipes and smokestacks come in contact with sunlight, they react and form ozone smog.

produced primarily when fossil fuels like gasoline, oil or coal are burned or when some chemicals, like solvents, evaporate. NOx is emitted from power plants, motor vehicles and other sources of high-heat combustion. VOCs are emitted from motor vehicles, chemical plants, refineries, factories, gas stations, paint and other sources. CO is also primarily emitted from motor vehicles.[2]

If the ingredients are present under the right conditions, they react to form ozone. And because the reaction takes place in the atmosphere, the ozone often shows up downwind of the sources of the original gases. In addition, winds can carry ozone far from where it began.

You may have wondered why "ozone action day" warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or driving your car. Lawn mower exhaust and gasoline vapors are VOCs that could turn into ozone in the heat and sun.

Who Is at Risk from Breathing Ozone?

Anyone who spends time outdoors where ozone pollution levels are high may be at risk. Five groups of people are especially vulnerable to the effects of breathing ozone:

- children and teens;[3]
- anyone 65 and older;[4]
- people who work or exercise outdoors;[5]
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis);[6] and
- people with cardiovascular disease.[7]

In addition, some evidence suggests that other groups—including women, people who suffer from obesity and people with low incomes—may also face higher risk from ozone.[8] More research is needed to confirm these findings.

A major new study found evidence that people with lung cancer faced greater risk from ozone and other outdoor air pollutants. The 2016 study tracked the air pollution levels from 1988 to 2011 that more than 350,000 cancer patients in California experienced. The researchers found that the ozone and other air pollutants shortened their survival.[9]

The impact on your health can depend on many factors, however. For example, the risks would be greater if ozone levels are higher, if you are breathing faster because you're working outdoors or if you spend more time outdoors.

Lifeguards in Galveston, Texas, provided evidence of the impact of even short-term exposure to ozone on healthy, active adults in a study published in 2008. Testing the breathing capacity of these outdoor workers several times a day, researchers found that many lifeguards had greater obstruction in their airways when ozone levels were high. Because of this research, Galveston became the first city in the nation to install an air quality warning flag system on the beach.[10]

How Ozone Pollution Harms Your Health

Premature death. Breathing ozone can shorten your life. Strong evidence exists of the deadly impact of ozone in large studies conducted in cities across the U.S., in Europe and in Asia. Researchers repeatedly found that the risk of premature death increased with higher levels of ozone.[11] Newer research has confirmed that ozone increased the risk of premature death even when other pollutants also exist.[12]

Immediate breathing problems. Many areas in the United States produce enough ozone during the summer months to cause health problems that can be felt right away. Immediate problems—in addition to increased risk of premature death—include:

- shortness of breath, wheezing and coughing;
- asthma attacks;
- increased risk of respiratory infections;
- increased susceptibility to pulmonary inflammation; and
- increased need for people with lung diseases, like asthma or chronic obstructive pulmonary disease (COPD), to receive medical treatment and to go to the hospital.[13]

Cardiovascular effects. Inhaling ozone may affect the heart as well as the lungs. A 2006 study linked exposures to high ozone levels for as little as one hour to a particular type of cardiac arrhythmia that itself increases the risk of premature death and stroke.[14] A French study found that exposure to elevated ozone levels for one to two days increased the risk of heart attacks for middle-aged adults without heart disease.[15] Several studies around the world have found increased risk of hospital admissions or emergency department visits for cardiovascular disease.[16]

Long-term exposure risks. New studies warn of serious effects from breathing ozone over longer periods. With more long-term data, scientists are finding that long-term exposure—that is, for periods longer than eight hours, including days, months or years—may increase the risk of onset of asthma or early death.

- Examining the records from a long-term national database, researchers found a higher risk of death from respiratory diseases associated with increases in ozone.[17]
- New York researchers looking at hospital records for children's asthma found that the risk of admission to hospitals for asthma increased with chronic exposure to ozone. Younger children and children from low-income families were more likely than other children to need hospital admissions even during the same time periods.[18]
- California researchers analyzing data from their long-term Southern California Children's Health Study found that some children with certain genes were more likely to develop asthma as adolescents in response to the variations in ozone levels in their communities.[19]
- Studies link lower birth weight and decreased lung function in newborns to ozone levels in their community.[20] This research provides increasing evidence that ozone may harm newborns.

Breathing other pollutants in the air may make your lungs more responsive to ozone—and breathing ozone may increase your body's response to other pollutants. For example, research warns that breathing sulfur dioxide and nitrogen oxide—two pollutants common in the eastern U.S.—can make the lungs react more strongly than to just breathing ozone alone. Breathing ozone may also increase the response to allergens in people with allergies. A large study published in 2009 found that children were more likely to suffer from hay fever and respiratory allergies when ozone and $PM_{2.5}$ levels were high.[21]

Research shows lower level of ozone causes harm. The EPA released their latest complete review of the current research on ozone pollution in February 2013.[22] The EPA had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence; in particular, they examined research published between 2006 and 2012. The experts on the Committee and EPA concluded that ozone pollution posed multiple, serious threats to health. Their findings are highlighted in the box on the next page.

EPA Concludes Ozone Pollution Poses Serious Health Threats

- Causes respiratory harm (e.g., worsened asthma, worsened COPD, inflammation)
- Likely to cause early death (both short-term and long-term exposure)
- Likely to cause cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure)
- May cause harm to the central nervous system
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, 2013. EPA/600/R-10/076F.

Based on that review, the EPA set more protective limits, called national ambient air quality standards, on ozone pollution in October 2015. These official limits drive the cleanup of ozone pollution nationwide. The Clean Air Act requires EPA to review the standards every five years to make sure that they protect the health of the public.

Particle Pollution

Ever look at dirty truck exhaust?

The dirty, smoky part of that stream of exhaust is made of particle pollution. Overwhelming evidence shows that particle pollution—like that coming from that exhaust smoke—can kill. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.

What Is Particle Pollution?

Particle pollution refers to a mix of very tiny solid and liquid particles that are in the air we breathe. But nothing about particle pollution is simple. And it is so dangerous, it can shorten your life.

Particle pollution refers to a mix of very tiny solid and liquid particles that are in the air we breathe. But nothing about particle pollution is simple. And it is so dangerous, it can shorten your life.

Size matters. Particles themselves are different sizes. Some are one-tenth the diameter of a strand of hair. Many are even tinier; some are so small they can only be seen with an electron microscope. 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.

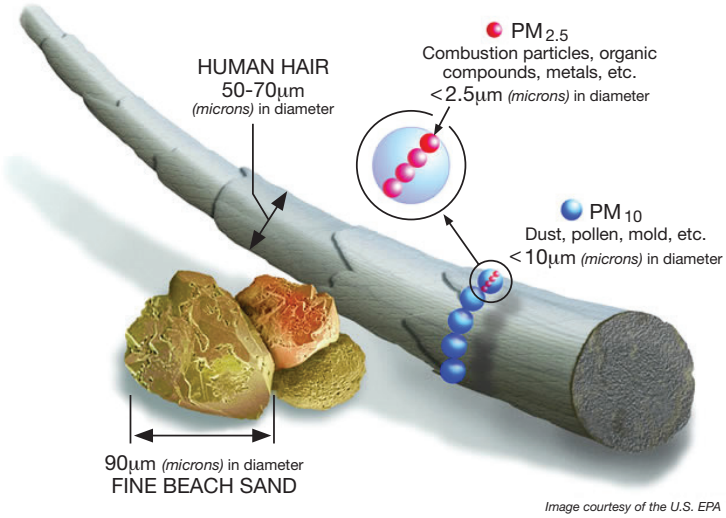


Image courtesy of the U.S. EPA

The differences in size make a big difference in how they affect us. Our natural defenses help us to cough or sneeze larger particles out of our bodies. But those defenses don't keep out smaller particles, those that are smaller than 10 microns (or micrometers) in diameter, or about one-seventh the diameter of a single human hair. These particles get

trapped in the lungs, while the smallest are so minute that they can pass through the lungs into the bloodstream, just like the essential oxygen molecules we need to survive.

Researchers categorize particles according to size, grouping them as coarse, fine and ultrafine. Coarse particles fall between 2.5 microns and 10 microns in diameter and are called $PM_{10-2.5}$. Fine particles are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Ultrafine particles are smaller than 0.1 micron in diameter[23] and are small enough to pass through the lung tissue into the blood stream, circulating like the oxygen molecules themselves. No matter what the size, particles can harm your health.

"A mixture of mixtures." Because particles form in so many different ways, they can be composed of many different compounds. Although we often think of particles as solids, not all are. Some are completely liquid; others are solids suspended in liquids. As the EPA puts it, particles are really "a mixture of mixtures."[24]

The mixtures differ between the eastern and western United States and in different times of the year. For example, the Midwest, Southeast and Northeast states have more sulfate particles than the West on average, largely due to the high levels of sulfur dioxide emitted by large, coal-fired power plants. By contrast, nitrate particles from motor vehicle exhaust form a larger proportion of the unhealthful mix in the winter in the Northeast, Southern California, the Northwest and North Central U.S.[25]

Who Is at Risk?

Anyone who lives where particle pollution levels are high is at risk. Some people face higher risk, however. People at the greatest risk from particle pollution exposure include:

- Infants, children and teens;[26]
- People over 65 years of age;[27]
- People with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema;
- People with heart disease[28] or diabetes;[29]
- People with low incomes;[30] and
- People who work or are active outdoors.[31]

Diabetics face increased risk at least in part because of their higher risk for cardiovascular disease.[32]

People with lung cancer also appear to be at higher risk from particle pollution, according to the 2016 study of more than 350,000 patients in California. Researchers looked at the exposure they experienced between 1988 and 2011 and found that where higher concentrations of particle pollution existed, people with lung cancer had shorter life spans.[33]

What Can Particles Do to Your Health?

Particle pollution can be very dangerous to breathe. Breathing particle pollution may trigger illness, hospitalization and premature death, risks that are showing up in new studies that validate earlier research.

Breathing particle pollution may trigger illness, hospitalization and premature death.

Thanks to steps taken to reduce particle pollution, good news is growing from researchers who study the drop in year-round levels of particle pollution.

Looking at air quality in 545 counties in the U.S. between 2000 and 2007, researchers found that people had approximately four months added to their life expectancy on average due to cleaner air. Women and people who lived in urban and densely populated counties benefited the most.[34]

Another long-term study of six U.S. cities tracked from 1974 to 2009 added more evidence of the benefits. Their findings suggest that cleaning up particle pollution

had almost immediate health benefits. They estimated that the U.S. could prevent approximately 34,000 premature deaths a year if the nation could lower annual levels of particle pollution by 1 µg/m^3.[35]

Other researchers estimated that reductions in air pollution can be expected to produce rapid improvements in public health, with fewer deaths occurring within the first two years after reductions.[36]

These studies add to the growing research that cleaning up air pollution improves life and health.

Short-Term Exposure Can Be Deadly

First and foremost, short-term exposure to particle pollution can kill. Peaks or spikes in particle pollution can last for hours to days. Deaths can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—these are deaths that would not have occurred if the air were cleaner.[37]

Even low levels of particles can be deadly. A 2016 study found that people age 65 and older in New England faced a higher risk of premature death from particle pollution, even in places that met current standards for short-term particle pollution.[38] Another study in 2017 looked more closely at Boston and found a similar higher risk of premature death from particle pollution in a city that meets current limits on short-term particle pollution.[39]

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 include coughing, wheezing, cardiac arrhythmias and heart attacks. According to extensive research, short-term increases in particle pollution have been linked to:

- death from respiratory and cardiovascular causes, including strokes;[40, 41, 42, 43]
- increased mortality in infants and young children;[44]
- increased numbers of heart attacks, especially among the elderly and in people with heart conditions;[45]
- inflammation of lung tissue in young, healthy adults;[46]
- increased hospitalization for cardiovascular disease, including strokes and congestive heart failure;[47, 48, 49]
- increased emergency room visits for patients suffering from acute respiratory ailments;[50]
- increased hospitalization for asthma among children;[51, 52, 53] and
- increased severity of asthma attacks in children.[54]

Again, the impact of even short-term exposure to particle pollution on healthy adults was demonstrated in the Galveston lifeguard study. In addition to the harmful effects of ozone pollution, lifeguards had reduced lung volume at the end of the day when fine particle levels were high.[55]

Year-Round Exposure

Breathing high levels of particle pollution day in and day out can also be deadly, as landmark studies in the 1990s conclusively showed[56] and as other studies confirmed.[57] Chronic exposure to particle pollution can shorten life by one to three years.[58] Recent research has confirmed that long-term exposure to particle pollution still kills, even with the declining levels in the U.S. since 2000 [59] and even in areas, such as New England, that currently meet the official limit, or standard, for year-round particle pollution.[60]

In late 2013, the World Health Organization concluded that particle pollution could cause lung cancer.

In late 2013, the International Agency for Research on Cancer, part of the World Health Organization, concluded that particle pollution could cause lung cancer. The IARC reviewed the most recent research and reported that the risk of lung cancer increases as the particle levels rise.[61]

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

- increased hospitalization for asthma attacks for children living near roads with heavy truck or trailer traffic;[62, 63]
- slowed lung function growth in children and teenagers;[64, 65]
- development of asthma in children up to age 14;[66]
- significant damage to the small airways of the lungs;[67]
- increased risk of death from cardiovascular disease;[68] and
- increased risk of lower birth weight and infant mortality.[69]

Research into the health risks of 65,000 women over age 50 found that those who lived in areas with higher levels of particle pollution faced a much greater risk of dying from heart disease than had been previously estimated. Even women who lived within the same city faced differing risks depending on the annual levels of pollution in their neighborhood.[70]

New research has found evidence that long-term exposure to particle pollution may increase the risk of developing diabetes. Two independent reviews of published research found that particle pollution may increase the risk of developing type 2 diabetes mellitus.[71]

Scientists have found links between particle pollution and mental health concerns. A study of 27,000 residents in Seoul, Korea, found that breathing particle pollution over a long time increased the risk of major depressive disorder. The risk was higher for those who also had a chronic disease such as asthma, COPD, or diabetes.[72] Older adults suffered more symptoms of depression and anxiety when particle pollution was higher in a large study looking at data from community living groups across the United States. Those who lived in lower socioeconomic situations or who had a history of respiratory illness or heart disease were more likely to have anxiety symptoms.[73]

The EPA completed their most recent review of the current research on particle pollution in December 2009.[74] The EPA had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence. The EPA concluded that particle pollution caused multiple, serious threats to health. Their findings are highlighted in the box below.

EPA Concludes Fine Particle Pollution Poses Serious Health Threats

- Causes early death (both short-term and long-term exposure)
- Causes cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure)
- Likely to cause respiratory harm (e.g., worsened asthma, worsened COPD, inflammation)
- May cause cancer
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, *Integrated Science Assessment for Particulate Matter,* December 2009. EPA 600/R-08/139F

Chemical processes in the atmosphere create most of the tiniest particles.

Where Does Particle Pollution Come From?

Particle pollution is produced through two separate processes—mechanical and chemical.

Mechanical processes break down bigger bits into smaller bits with the material remaining essentially the same, only becoming smaller. Mechanical processes primarily create coarse particles.[75] Dust storms, construction and demolition, mining operations, and agriculture are among the activities that produce coarse particles. Tire, brake pad and road wear can also create coarse particles. Bacteria, pollen, mold, and plant and animal debris are also included as coarse particles.[76]

By contrast, chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles. Combustion sources burn fuels and emit gases. These gases can vaporize and then condense to become a particle of the same chemical compound. Or they can react with other gases or particles in the atmosphere to form a particle of a different chemical compound. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO_2), nitrogen oxides (NO_x) and volatile organic compounds with water and other compounds in the atmosphere.[77] Burning fossil fuels in factories, power plants, steel mills, smelters, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment generate a large part of the raw materials for fine particles. So does burning wood in residential fireplaces and wood stoves or burning agricultural fields or forests.

Are Some Particles More Dangerous Than Others?

With so many sources of particles, researchers want to know if some particles pose greater risk than others. Researchers are exploring possible differences in health effects of the sizes of particles and particles from different sources, such as diesel particles from trucks and buses or sulfates from coal-fired power plants. Recent studies have tried to answer this question. So far, the answers are complicated.

Each particle may have many different components. The building blocks of each can include several biological and chemical components. Bacteria, pollen and other biological ingredients can combine in the particle with chemical agents, such as heavy metals, elemental carbon, dust and secondary species like sulfates and nitrates. These combinations mean that particles can have complex effects on the body.[78]

Some studies have found different kinds of particles may have greater risk for different health outcomes.

- For example, one 2015 study found that particles from burning fossil fuels, including coal-burning and diesel emissions, increased the risk of dying prematurely from ischemic heart disease, but that particles from wind-blown soil and biomass combustion did not.[79]
- Another recent study looked at older adults in Connecticut and Massachusetts and found that breathing black carbon, calcium and road dust particles was more likely to send them to the hospital for cardiovascular and respiratory problems than other particles.[80]
- Some of the same researchers found that when they looked at the risk of low birthweight for newborns in the Northeast and Mid-Atlantic states, different particles harmed some groups more than others.[81]

Other studies have identified the challenges of exploring all the kinds of particles and their health effects with the limited monitoring across the nation.[82] Some particles serve as carriers for other chemicals that are also toxic, and the combination may worsen the impact.[83, 84]

The best evidence shows that having less of all types of particles in the air leads to better health and longer lives.

Focusing on Children's Health

Children face special risks from air pollution because their lungs are growing and because they are so active.

Just like the arms and legs, the largest portion of a child's lungs will grow long after he or she is born. Eighty percent of their tiny air sacs develop after birth. Those sacs, called the alveoli, are where the life-sustaining transfer of oxygen to the blood takes place. The lungs and their alveoli aren't fully grown until children become adults.[85] In addition, the body's defenses that help adults fight off infections are still developing in young bodies.[86] Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.[87]

Furthermore, children don't behave like adults, and their behavior also affects their vulnerability. They are outside for longer periods and are usually more active when outdoors. Consequently, they inhale more polluted outdoor air than adults typically do.[88]

The largest portion of a child's lungs will grow long after he or she is born.

Air Pollution Affects Children Before They Are Born

Several studies have found air pollution linked to harm to children while they are still in the womb. A large study in California found that higher particle pollution levels increased the risk of preterm birth.[89] Pregnant women exposed to even low levels of particle pollution had higher risk factors for preterm birth in a Boston study.[90] Preterm births occurred more frequently when particle pollution spiked, as an Australian study found, even when they controlled for other risk factors.[91]

Air Pollution Increases Risk of Underdeveloped Lungs

The Southern California Children's Health study looked at the long-term effects of particle pollution on teenagers. Tracking 1,759 children who were between ages 10 and 18 from 1993 to 2001, researchers found that those who grew up in more polluted areas face the increased risk of having underdeveloped lungs, which may never recover to their full capacity. The average drop in lung function was 20 percent below what was expected for the child's age, similar to the impact of growing up in a home with parents who smoked.[92]

Community health studies are pointing to less obvious, but serious effects from year-round exposure to ozone, especially for children. Scientists followed 500 Yale University 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.[93] A much larger study of 3,300 schoolchildren 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.[94]

Cleaning Up Pollution Can Reduce Risk to Children

There is also real-world evidence that reducing air pollution can help protect children.

A 2015 follow-up to that Southern California Children's Health study showed that reducing pollution could improve children's health. This time they tracked a different group of 863 children living in the same area, but growing up between 2007 and 2011, when the air in Southern California was much cleaner. They compared these children to those who had been part of their earlier studies when the air was dirtier. Children growing up in the cleaner air had much greater lung function, a benefit that may help them throughout their lives. As the researchers noted, their study suggested that "all children have the potential to benefit from improvements in air quality." [95]

In Switzerland, particle pollution dropped during a period in the 1990s. Researchers there tracked 9,000 children over a nine-year period, following their respiratory symptoms. After taking other factors such as family characteristics and indoor air pollution into account, the researchers noted that during the years with less pollution, the children had fewer episodes of chronic cough, bronchitis, common cold and conjunctivitis symptoms.[96]

Disparities in the Impact of Air Pollution

Poorer people and some racial and ethnic groups often face higher exposure and greater responses to pollution.

The burden of air pollution is not evenly shared. Poorer people and some racial and ethnic groups are among those who often face higher exposure to pollutants and who may experience greater responses to such pollution. Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position, have less education, or live nearer to major sources,[97] including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.[98]

Many studies have looked at differences in the impact on premature death. Results have varied widely, particularly for effects between racial groups. Some studies have found no differences among races,[99] while others found greater responsiveness for whites and Hispanics, but not African Americans,[100] or for African Americans but not other races or ethnic groups.[101] Other researchers have found greater risk for African Americans from hazardous air pollutants, including those pollutants that also come from traffic sources.[102]

Socioeconomic position has been more consistently associated with greater harm from air pollution. Multiple large studies show evidence of that link. Low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution mortality nationwide.[103] In the 2008 study that found greater risk for premature death for African Americans, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.[104] A 2008 study of Washington, DC, found that while poor air quality and worsened asthma went hand in hand in areas where Medicaid enrollment was high, the areas with the highest Medicaid enrollment did not always have the strongest association of high air pollution and asthma attacks.[105] A 2016 study of New Jersey residents found that the risk of dying early from long-term exposure to particle pollution was higher in communities with larger African-American populations, lower home values and lower median income.[106] However, two other studies in France have found no association with lower income and asthma attacks.[107]

Scientists have speculated that there are three broad reasons why disparities may exist. First, groups may face greater exposure to pollution because of factors ranging from racism to class bias to housing market dynamics and land costs. For example, pollution sources may be located near disadvantaged communities, increasing exposure to harmful pollutants. Second, low social position may make some groups more susceptible to health threats because of factors related to their disadvantage. Lack of access to health care, grocery stores and good jobs; poorer job opportunities; dirtier workplaces or higher traffic exposure are among the factors that could handicap groups and increase the risk of harm. Finally, existing health conditions, behaviors or traits may predispose some groups to greater risk. For example, diabetics are among the groups most at risk from air pollutants, and the elderly, African Americans, Mexican Americans and people living near a central city have higher incidence of diabetes.[108]

Communities of color also may be more likely to live in counties with higher levels of pollution. Non-Hispanic blacks and Hispanics were more likely to live in counties that had worse problems with particle pollution, researchers found in a 2011 analysis. Non-Hispanic blacks were also more likely to live in counties with worse ozone pollution. Income groups, by contrast, differed little in these exposures. However, since few rural counties have monitors, the primarily older, non-Hispanic white residents of those counties lack information about the air quality in their communities.[109]

Unemployed people, those with low income or low education and non-Hispanic blacks were found to be more likely to live in areas with higher exposures to particle pollution in a 2012 study. However, the different racial/ethnic and income groups were often breathing very different kinds of particles; the different composition and structure of these particles may have different health impacts.[110]

Highways May Be Especially Dangerous for Breathing

Being in heavy traffic or living near a road may be even more dangerous than being in other places in a community. Growing evidence shows that the vehicle emissions coming directly from those highways may be higher than in the community as a whole, increasing the risk of harm to people who live or work near busy roads.

The number of people living "next to a busy road" may include 30 to 45 percent of the urban population in North America, according to the most recent review of the evidence. In January 2010, the Health Effects Institute published a major review of the evidence by a panel of expert scientists. The panel looked at over 700 studies from around the world, examining the health effects. They concluded that traffic pollution causes asthma attacks in children, and may cause a wide range of other effects including the onset of childhood asthma, impaired lung function, premature death and death from cardiovascular diseases, and cardiovascular morbidity. The area most affected, they concluded, was roughly 0.2 to 0.3 miles (300 to 500 meters) from the highway.[111]

Children and teenagers are among the most vulnerable—though not the only ones at risk. A Danish study found that long-term exposure to traffic air pollution may increase the risk of developing chronic obstructive pulmonary disease (COPD). They found that those most at risk were people who already had asthma or diabetes.[112] Studies have found increased risk of premature death from living near a major highway or an urban road.[113] Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.[114] Urban women in a Boston study experienced decreased lung function associated with traffic-related pollution.[115]

Adults living closer to the road—within 300 meters—may risk dementia. In 2017, a study of residents of Ontario, Canada, found that those who lived close to heavy traffic had a higher risk of dementia, though not for Parkinson's disease or multiple sclerosis. Researchers found the strongest association among those who lived closest to the roads (less than 50 meters), who had never moved and who lived in major cities.[116] A study of older men in 2011 also found that long-term exposure to traffic pollution increased their risk of having poor cognition.[117]

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;
- Do not let anyone smoke indoors and support measures to make all places smokefree; and
- Reduce the use of fireplaces and wood-burning stoves.

Bottom line: Help yourself and everyone else breathe easier. Support national, state and local efforts to clean up sources of pollution. Your life and the life of someone you love may depend on it.

Support national, state and local efforts to clean up sources of pollution. Your life and the life of someone you love may depend on it.

1 Ozone and particle pollution are the most widespread, but they aren't the only serious air pollutants. Others include carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide, as well as scores of toxins such as mercury, arsenic, benzene, formaldehyde, and acid gases. However, the monitoring networks are not as widespread nationwide for the other pollutants.

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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 (AQS), formerly called Aerometric Information Retrieval System (AIRS) database. The American Lung Association contracted with Dr. Allen S. Lefohn, 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 three-year period for 2013-2015 for each monitoring site.

Design values for the annual $PM_{2.5}$ concentrations by county for the period 2013-2015 came from data posted on July 29, 2016, at the U.S. Environmental Protection Agency's website at https://www.epa.gov/sites/production/files/2016-07/pm25_designvalues_20132015_final_07_29_16.xlsx.

Ozone Data Analysis

The 2013, 2014 and 2015 AQS hourly ozone data were used to calculate the daily 8-hour maximum concentration for each ozone-monitoring site. The hourly averaged ozone data were downloaded on August 11, 2016, following the close of the authorized period for quality review and assurance certification of data. Only the hourly average ozone concentrations derived from FRM and FEM monitors were used in the analysis. The data were considered for a three-year period for the same reason that the EPA uses three years of data to determine compliance with the ozone standard: 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 2013, 2014 and 2015, based on the EPA-defined ozone season, was identified.

The current national ambient air quality standard for ozone is 70 parts per billion (ppb) measured over eight hours. The EPA's Air Quality Index reflects the 70 ppb standard. A.S.L. & Associates prepared a table by county that summarized, for each of the three years, the number of days the ozone level was within the ranges identified by the EPA based on the EPA Air Quality Index:

8-hour Ozone Concentration	Air Quality Index Levels
0 – 54 ppb	Good (Green)
55 – 70 ppb	Moderate (Yellow)
71 – 85 ppb	Unhealthy for Sensitive Groups (Orange)
86 – 105 ppb	Unhealthy (Red)
106 – 200 ppb	Very Unhealthy (Purple)
>201 ppb	Hazardous (Maroon)

The goal of this report was to identify the number of days that 8-hour daily maximum concentrations in each county occurred within the defined ranges. This approach provided an indication of the level of pollution for all monitored days, not just those days that fell under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were applied to eliminate monitoring sites or to require a number of valid days for the ozone season.

The daily maximum 8-hour average concentration for a given day is derived from the highest of the 17 consecutive 8-hour averages beginning with the 8-hour period from 7:00 a.m. to 3:00 p.m. and ending with the 8-hour period from 11:00 p.m. to 7:00 a.m. the following day. This follows the process EPA uses for the current ozone standard adopted in 2015, but differs from the form used under the previous 0.075 ppm 8-hour

average ozone standard that was established in 2008. All valid days of data within the ozone season were used in the analysis. However, for computing an 8-hour average, at least 75 percent of the hourly concentrations (i.e., 6-8 hours) had to be available for the 8-hour period. In addition, an 8-hour daily maximum average was identified if valid 8-hour averages were available for at least 75 percent of possible hours in the day (i.e., at least 13 of the possible 17 8-hour averages). Because the EPA includes days with inadequate data (i.e., not 75 percent complete) if the standard value is exceeded, our data capture methodology also included the site's 8-hour value if at least one valid 8-hr period were available and it was 71 ppb or higher.

As instructed by the Lung Association, A.S.L. & Associates included the exceptional and natural events that were identified in the database and identified for the Lung Association the dates and monitoring sites that experienced such events. Some data have been flagged by the state or local air pollution control agency to indicate that they had raised issues with EPA about those data. For each day across all sites within a specific county, the highest daily maximum 8-hour average ozone concentration was recorded and then the results were summarized by county for the number of days the ozone levels were within the ranges identified above.

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 (Unhealthy for Sensitive Groups), red (Unhealthy) or purple (Very Unhealthy).

Short-Term Particle Pollution Data Analysis

A.S.L. & Associates identified the maximum daily 24-hour AQS $PM_{2.5}$ concentration for each county in 2013, 2014 and 2015 with monitoring information. The 24-hour $PM_{2.5}$ data were downloaded on August 10, 2016, following the close of the authorized period for quality review and assurance certification of data. In addition, hourly averaged $PM_{2.5}$ concentration data were characterized into 24-hour average $PM_{2.5}$ values by the EPA and provided to A.S.L. & Associates. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the three years, the number of days the maximum of the daily $PM_{2.5}$ concentration was within the ranges identified by the EPA based on the EPA Air Quality Index, as adopted by the EPA on December 14, 2012:

24-hour $PM_{2.5}$ Concentration	Air Quality Index Levels
0.0 mg/m^3 to 12.0 mg/m^3	Good (Green)
12.1 mg/m^3 to 35.4 mg/m^3	Moderate (Yellow)
35.5 mg/m^3 to 55.4 mg/m^3	Unhealthy for Sensitive Groups (Orange)
55.5 mg/m^3 to 150.4 mg/m^3	Unhealthy (Red)
150.5 mg/m^3 to 250.4 mg/m^3	Very Unhealthy (Purple)
greater than or equal to 250.5 mg/m^3	Hazardous (Maroon)

All previous data collected for 24-hour average $PM_{2.5}$ were characterized using the AQI thresholds listed above.

The goal of this report was to identify the number of days that the maximum in each county of the daily $PM_{2.5}$ concentration occurred within the defined ranges. This approach provided an indication of the level of pollution for all monitored days, not just those days that fell under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were used to eliminate monitoring sites. Both 24-hour averaged PM data, as well as hourly averaged PM data averaged over 24 hours were used. Included in the analysis are data collected using only FRM

and FEM methods, which reported hourly and 24-hour averaged data. As instructed by the Lung Association, A.S.L. & Associates included the exceptional and natural events that were identified in the database and identified for the Lung Association the dates and monitoring sites that experienced such events. Some data have been flagged by the state or local air pollution control agency to indicate that they had raised issues with EPA about those data. For each day across all sites within a specific county, the highest daily maximum 24-h $PM_{2.5}$ concentration was recorded and then the results were summarized by county for the number of days the concentration levels were within the ranges identified on the chart on the preceding page.

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 (Unhealthy for Sensitive Groups), red (Unhealthy), purple (Very Unhealthy) or maroon (Hazardous).

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. To determine the weighted average, the Lung Association followed these steps:

1. First, assigned weighting factors to each category of the Air Quality Index. The number of orange days experienced by each county received a factor of 1; red days, a factor of 1.5; purple days, a factor of 2; and maroon days, a factor of 2.5. This allowed days where the air pollution levels were higher to receive greater weight.
2. Next, multiplied the total number of days within each category by their assigned factor, and then summed all the categories to calculate a total.
3. Finally, divided the total by three to determine the weighted average, since the monitoring data were collected over a three-year period.

The weighted average determined each county's grades for ozone and 24-hour $PM_{2.5}$.

- All counties with a weighted average of zero (corresponding to no exceedances of the standard over the three-year period) were given a grade of "A."
- For ozone, an "F" grade was set to generally correlate with the number of unhealthy air days that would place a county in nonattainment for the ozone standard.
- For short-term particle pollution, fewer unhealthy air days are required for an F than for nonattainment under the $PM_{2.5}$ standard. The national air quality standard is set to allow 2 percent of the days during the three years to exceed 35 $\mu g/m^3$ (called a "98th percentile" form) before violating the standard. That would be roughly 21 unhealthy days in three years. The grading used in this report would allow only about 1 percent of the days to be over 35 $\mu g/m^3$ (called a "99th percentile" form) of the $PM_{2.5}$. The American Lung Association supports using the tighter limits in a 99th percentile form as a more appropriate standard that is intended to protect the public from short-term spikes in pollution.

Grading System		
Grade	**Weighted Average**	**Approximate Number of Allowable Orange/Red/Purple/Maroon 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, purple or maroon

Weighted averages allow comparisons to be drawn based on severity of air pollution. For example, if one county had nine orange days and no red days, it would earn a weighted average of 3.0 and a D grade. However, another county that had only eight orange days but also two 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 the EPA uses to determine violations of both the ozone and the 24-hour $PM_{2.5}$ standards. The EPA determines whether a county violates the standard based on the fourth 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 the EPA's 2015 ozone standard. The American Lung Association's position is that the evidence shows that the 2015 ozone standard, although stronger than the 2008 standard, still fails to adequately protect public health.

The Lung Association calculates the population at risk from these pollutants based on the population from the entire county where the monitor is located and the largest metropolitan area that contains that county. Not only do people from that county or metropolitan area circulate within the county and the metropolitan area, the air pollution circulates to that monitor through the county and metropolitan area.

Counties were ranked by weighted average. Metropolitan areas were ranked by the highest weighted average among the counties within a given Metropolitan Statistical Area as of 2015 as defined by the White House Office of Management and Budget (OMB).

Year-Round Particle Pollution (Annual $PM_{2.5}$)

Since no comparable Air Quality Index exists for year-round particle pollution (annual $PM_{2.5}$), the grading was based on the 2012 National Ambient Air Quality Standard for annual $PM_{2.5}$ of 12 µg/m^3. Counties that EPA listed as being at or below 12 µg/m^3 were given grades of "Pass." Counties EPA listed as being at or above 12.1 µg/m^3 were given grades of "Fail." Where insufficient data existed for EPA to determine a design value, those counties received a grade of "Incomplete."

EPA officially recognized that data collected in all Illinois counties, in some Maine counties and in most Tennessee counties were processed in certain laboratories where quality control issues meant that available data could not be considered for development of an official design value. For short-term and annual particle pollution, those counties received a grade of "Incomplete."

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. Counties were ranked by design value. Metropolitan areas were ranked by the highest design value among the counties within a given Metropolitan Statistical Area as of 2015 as defined by the OMB.

The Lung Association received critical assistance from members of the National Association of Clean Air Agencies and the Association of Air Pollution Control Agencies. With their assistance, all state and local agencies were provided the opportunity to review and comment on the data in draft tabular form. The Lung Association reviewed all discrepancies with the agencies and, if needed, with Dr. Lefohn at A.S.L. & Associates. Questions about the annual PM design values were discussed with EPA; however, the Lung Association made final decisions to grade counties as "Incomplete" where EPA considered $PM_{2.5}$ data to have inadequate quality assurance. The American Lung Association wishes to express its continued appreciation to the state and local air directors for their willingness to assist in ensuring that the characterized data used in this report are correct.

Calculations of Populations at Risk

Presently county-specific measurements of the number of persons with chronic conditions are not generally available. In order to assess the magnitude of chronic conditions at the state and county levels, we have employed a synthetic estimation technique originally developed by the U.S. Census Bureau. This method uses age-specific national and state estimates of self-reported conditions to project disease prevalence to the county level. The exception to this is poverty, for which estimates are available at the county level.

Population Estimates

The Lung Association includes the total county population in discussions of populations at risk from exposure to pollution in each county. The Lung Association uses that conservative count based on several factors: the recognized limited number and locations of monitors in most counties and metropolitan areas; the movement of the population both in daily activities, including outdoor activities, such as exercise or work; and the transport of emission from sources into and across the county to reach the monitor.

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2015. The Census Bureau also estimated the age-specific breakdown of the population and how many individuals were living in poverty by county. These estimates are the best information on population demographics available between decennial censuses.

Poverty estimates came from the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program. The program does not use direct counts or estimates from sample surveys, as these methods would not provide sufficient data for all counties. Instead, a model based on estimates of income or poverty from the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS) is used to develop estimates for all states and counties.

Prevalence Estimates

Chronic Obstructive Pulmonary Disease, Cardiovascular Disease, Asthma and Diabetes. In 2015, the Behavioral Risk Factor Surveillance System (BRFSS) survey found that approximately 21.6 million (8.9 percent) of adults residing in the United States and 8.5 percent of children from 30 states and Washington, D.C., reported currently having asthma. Among adults in the Unites States in 2015, 15.5 million (6.3 percent) had ever been diagnosed with chronic obstructive pulmonary disease (COPD), 20.4 million (8.4

percent) had ever been diagnosed with cardiovascular disease and 25.6 million (10.4 percent) had ever been diagnosed with diabetes.

The prevalence estimate for pediatric asthma is calculated for those younger than 18 years. Local area prevalence of pediatric asthma is estimated by applying 2015 state prevalence rates, or if not available, the national rate from the BRFSS to pediatric county-level resident populations obtained from the U.S. Census Bureau website. Pediatric asthma data from the 2015 BRFSS were available for thirty states and Washington D.C., from the 2014 BRFSS for seven states, from the 2013 BRFSS for one state, from the 2012 BRFSS for two states, from the 2011 BRFSS for one state, and national data were used for the nine states[1] that had no data available. Data from earlier years were not used due to changes in the 2011 survey methodology.

The prevalence estimate for COPD, cardiovascular disease, adult asthma and diabetes is calculated for those aged 18-44 years, 45-64 years and 65 years and older. Local area prevalence for these diseases is estimated by applying age-specific state prevalence rates from the 2015 BRFSS to age-specific county-level resident populations obtained from the U.S. Census Bureau website. Cardiovascular disease included ever having been diagnosed with a heart attack, angina or coronary heart disease, or stroke.

Incidence Estimates

Lung Cancer. State- and gender-specific lung cancer incidence rates for 2013 were obtained from StateCancerProfiles.gov, a system that provides access to statistics from both the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) program and the Center for Disease Control and Prevention's National Program of Cancer Registries.

Local area incidence of lung cancer is estimated by applying 2013 age-adjusted and sex-specific incidence rates to 2015 county populations obtained from the U.S. Census Bureau. Thereafter, the incidence estimates for each county within a state are summed to determine overall incidence. Estimates for Nevada are based on 2010 rates.

Limitations of Estimates. Since the statistics presented by the BRFSS and SAIPE 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 the BRFSS 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 BRFSS is the best available source for information on the magnitude of chronic disease at the state level. The conditions covered in the survey may vary considerably in the accuracy and completeness with which they are reported.

Local estimates of chronic 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 or state estimates derived from the BRFSS.

1 2014: Alabama, Kentucky, Maryland, North Carolina, Tennessee, Washington, West Virginia. 2013: Arizona. 2012: North Dakota and Wyoming. 2011: Iowa. National: Alaska, Arkansas, Colorado, Delaware, Florida, Idaho, South Carolina, South Dakota and Virginia.

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State Table Notes

A full explanation of the sources of data and methodology is in **Methodology**.

Notes for all state data tables

1. **Total Population** is based on 2015 U.S. Census and represents the at-risk populations in counties with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire state's sensitive populations.
2. **Those 18 & under** and **65 & over** are vulnerable to ozone and $PM_{2.5}$. Do not use them as population denominators for disease estimates—that will lead to incorrect estimates.
3. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2015 based on the state rates when available or national rates when not (Behavioral Risk Factor Surveillance System, or BRFSS), applied to county population estimates (U.S. Census).
4. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2015 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
5. **COPD** estimates are for adults 18 and over who had ever been diagnosed with chronic obstructive pulmonary disease, which includes chronic bronchitis and emphysema, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Lung cancer** estimates are for all ages and represent the estimated number of people diagnosed with lung cancer in 2013 based on state rates (StateCancerProfiles.gov) applied to county population estimates (U.S. Census).
7. **Cardiovascular disease** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census). CV disease includes coronary heart disease, stroke, and heart attack.
8. **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime based on state rates (BRFSS) applied to county population estimates (U.S. Census).
9. **Poverty** estimates include all ages and come from the U.S. Census Bureau's Small Area Income and Poverty Estimates program. The estimates are derived from a model using estimates of income or poverty from the Annual Social and Economic Supplement and the Current Population Survey, 2015.
10. Adding across rows does not produce valid estimates. Adding the at risk categories (asthma, COPD, poverty, etc.) will double-count people who fall into more than one category.

Notes for all state grades tables.

1. Not all counties have monitors for either ozone or particle pollution. If a county does not have a monitor, that county's name is not on the list in these tables. The decision about monitors in the county is made by the state and the U.S. Environmental Protection Agency, not by the American Lung Association.
2. **INC** (Incomplete) indicates that monitoring is underway for that pollutant in that county, but that the data are incomplete for all three years. Those counties are not graded. For particle pollution, some states collected data, but experienced laboratory quality issues that meant the data could not be used for assessing pollution levels.
3. **DNC** (Data Not Collected) indicates that data on that particular pollutant are not collected in that county.
4. The **Weighted Average (Wgt. Avg)** was derived by adding the three years of individual level data (2013-2015), multiplying the sums of each level by the assigned standard weights (i.e. 1=orange, 1.5=red, 2.0=purple and 2.5=maroon) and calculating the average. Grades are assigned based on the weighted averages as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.
5. 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 the air quality in a county meets the standard. The numbers refer to micrograms per cubic meter, or $\mu g/m^3$. Design values for the annual $PM_{2.5}$ concentrations by county for the period 2013-2015 are as posted on July 26, 2016 at EPA's website at https://www.epa.gov/air-trends/air-quality-design-values. The 2013-2015 design values were compared to the 2012 National Ambient Air Quality Standard for Annual $PM_{2.5}$, particularly to the EPA's assessment of data quality required, as discussed on EPA's website at https://www.epa.gov/pm-pollution/2012-national-ambient-air-quality-standards-naaqs-particulate-matter-pm. Many design values are missing because state data did not meet quality requirements.
6. The annual average National Ambient Air Quality Standard for $PM_{2.5}$ is 12 $\mu g/m^3$ as of December 14, 2012. Counties with design values of 12 or lower received a grade of "Pass." Counties with design values of 12.1 or higher received a grade of "Fail."

ALABAMA

American Lung Association in Alabama

www.lung.org/alabama

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Baldwin	203,709	44,719	39,062	5,902	15,709	17,599	140	19,344	23,202	25,941
Clay	13,555	2,897	2,700	382	1,053	1,194	9	1,322	1,585	2,436
Colbert	54,354	11,698	10,232	1,544	4,217	4,700	37	5,139	6,174	9,732
DeKalb	71,130	17,539	11,383	2,315	5,306	5,730	49	6,101	7,372	14,481
Elmore	81,468	18,601	11,693	2,455	6,234	6,536	56	6,769	8,234	10,609
Etowah	103,057	22,585	18,278	2,981	7,961	8,752	71	9,456	11,391	19,146
Houston	104,173	24,547	17,147	3,240	7,880	8,515	71	9,090	10,969	18,829
Jefferson	660,367	152,511	96,633	20,127	50,335	52,865	451	54,982	66,751	115,897
Madison	353,089	78,771	49,684	10,396	27,236	28,736	243	29,667	36,236	45,877
Mobile	415,395	99,154	62,039	13,086	31,333	33,139	284	34,686	42,050	75,204
Montgomery	226,519	54,083	31,018	7,137	17,089	17,578	155	18,045	21,919	49,457
Morgan	119,565	27,527	19,529	3,633	9,117	9,914	82	10,564	12,787	19,250
Russell	59,660	15,352	7,574	2,026	4,396	4,501	41	4,579	5,584	13,575
Shelby	208,713	50,382	28,101	6,649	15,723	16,505	143	16,969	20,742	17,558
Sumter	13,103	2,553	2,197	337	1,043	1,101	9	1,164	1,401	4,073
Talladega	80,862	17,686	13,396	2,334	6,258	6,803	56	7,248	8,773	17,439
Tuscaloosa	203,976	42,579	24,553	5,619	15,992	15,511	140	15,316	18,631	38,704
Totals	**2,972,695**	**683,184**	**445,219**	**90,161**	**226,882**	**239,679**	**2,038**	**250,441**	**303,801**	**498,208**

ALABAMA

American Lung Association in Alabama

www.lung.org/alabama

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Baldwin	3	0	0	1.0	C	0	0	0	0.0	A	8.6	PASS
Clay	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.4	PASS
Colbert	0	0	0	0.0	A	0	0	0	0.0	A	8.9	PASS
DeKalb	1	0	0	0.3	B	0	0	0	0.0	A	9.2	PASS
Elmore	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Etowah	0	0	0	0.0	A	0	0	0	0.0	A	9.2	PASS
Houston	0	0	0	0.0	A	0	0	0	0.0	A	8.1	PASS
Jefferson	11	0	0	3.7	F	0	0	0	0.0	A	11.0	PASS
Madison	0	0	0	0.0	A	0	0	0	0.0	A	8.6	PASS
Mobile	7	0	0	2.3	D	0	0	0	0.0	A	8.6	PASS
Montgomery	1	0	0	0.3	B	0	0	0	0.0	A	9.3	PASS
Morgan	0	0	0	0.0	A	0	0	0	0.0	A	8.9	PASS
Russell	2	0	0	0.7	B	0	0	0	0.0	A	10.0	PASS
Shelby	4	0	0	1.3	C	0	0	0	0.0	A	INC	INC
Sumter	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Talladega	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.5	PASS
Tuscaloosa	0	0	0	0.0	A	0	0	0	0.0	A	9.0	PASS

ALASKA

American Lung Association in Alaska

www.lung.org/alaska

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Anchorage Municipality	298,695	73,959	28,001	6,271	21,084	8,706	166	12,779	15,881	25,305
Denali Borough	1,919	352	173	30	145	64	1	93	122	124
Fairbanks North Star Borough	99,631	24,116	8,349	2,045	7,139	2,756	56	3,943	4,891	7,671
Juneau City and Borough	32,756	7,216	3,594	612	2,372	1,060	18	1,597	1,992	2,542
Kenai Peninsula Borough	58,059	13,343	8,604	1,131	4,123	2,057	32	3,275	3,960	6,488
Matanuska-Susitna Borough	101,095	27,428	10,008	2,326	6,857	3,008	57	4,500	5,618	9,676
Totals	**592,155**	**146,414**	**58,729**	**12,414**	**41,720**	**17,651**	**331**	**26,188**	**32,463**	**51,806**

ALASKA

American Lung Association in Alaska

www.lung.org/alaska

HIGH OZONE DAYS 2013–2015

Borough	Orange	Red	Purple	Wgt. Avg.	Grade
Anchorage Municipality	DNC	DNC	DNC	DNC	DNC
Denali Borough	0	0	0	0.0	A
Fairbanks North Star Borough	0	0	0	0.0	A
Juneau City and Borough	DNC	DNC	DNC	DNC	DNC
Kenai Peninsula Borough	DNC	DNC	DNC	DNC	DNC
Matanuska-Susitna Borough	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
Borough	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anchorage Municipality	0	1	0	0.5	B	5.7	PASS
Denali Borough	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fairbanks North Star Borough	26	33	1	25.8	F	11.5	PASS
Juneau City and Borough	3	0	0	1.0	C	6.8	PASS
Kenai Peninsula Borough	INC	INC	INC	INC	INC	INC	INC
Matanuska-Susitna Borough	20	2	0	7.7	F	7.1	PASS

ARIZONA

American Lung Association in Arizona

www.lung.org/arizona

	AT-RISK GROUPS									
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Apache	71,474	20,658	9,977	2,253	4,804	3,242	35	4,004	5,188	26,788
Cochise	126,427	28,038	26,125	3,058	9,240	6,964	62	8,939	11,020	20,439
Coconino	139,097	29,757	15,930	3,245	10,261	6,029	68	7,138	9,491	25,133
Gila	53,159	10,845	14,609	1,183	3,977	3,438	26	4,568	5,456	11,089
La Paz	20,152	3,451	7,491	376	1,545	1,505	10	2,069	2,342	4,398
Maricopa	4,167,947	1,030,669	592,961	112,410	295,494	193,792	2,033	237,849	307,832	667,637
Mohave	204,737	37,506	56,716	4,091	15,719	13,467	100	17,851	21,373	34,720
Navajo	108,277	29,874	17,825	3,258	7,398	5,271	53	6,633	8,407	29,810
Pima	1,010,025	218,540	185,865	23,835	74,267	52,701	492	66,528	83,206	184,628
Pinal	406,584	96,927	77,527	10,571	28,991	21,037	200	26,779	33,093	60,151
Santa Cruz	46,461	12,919	7,668	1,409	3,167	2,267	23	2,855	3,620	11,295
Yavapai	222,255	38,024	64,634	4,147	17,332	15,160	108	20,183	24,097	32,978
Yuma	204,275	52,433	36,813	5,719	14,162	9,995	100	12,659	15,606	41,159
Totals	**6,780,870**	**1,609,641**	**1,114,141**	**175,556**	**486,357**	**334,869**	**3,310**	**418,057**	**530,731**	**1,150,225**

ARIZONA

American Lung Association in Arizona

www.lung.org/arizona

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Apache	DNC	DNC	DNC	DNC	DNC
Cochise	7	0	0	2.3	D
Coconino	11	0	0	3.7	F
Gila	20	0	0	6.7	F
La Paz	12	0	0	4.0	F
Maricopa	101	2	0	34.7	F
Mohave	DNC	DNC	DNC	DNC	DNC
Navajo	2	0	0	0.7	B
Pima	7	0	0	2.3	D
Pinal	25	0	0	8.3	F
Santa Cruz	DNC	DNC	DNC	DNC	DNC
Yavapai	7	0	0	2.3	D
Yuma	20	2	0	7.7	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Apache	INC	INC	INC	INC	INC	INC	INC
Cochise	0	0	0	0.0	A	6.5	PASS
Coconino	INC	INC	INC	INC	INC	INC	INC
Gila	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Paz	INC	INC	INC	INC	INC	INC	INC
Maricopa	7	3	1	4.5	F	10.0	PASS
Mohave	0	0	0	0.0	A	INC	INC
Navajo	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pima	0	0	0	0.0	A	5.5	PASS
Pinal	8	0	0	2.7	D	7.7	PASS
Santa Cruz	7	3	0	3.8	F	9.1	PASS
Yavapai	INC	INC	INC	INC	INC	INC	INC
Yuma	1	1	0	0.8	B	6.4	PASS

ARKANSAS

American Lung Association in Arkansas

www.lung.org/arkansas

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Arkansas	18,433	4,255	3,280	361	1,443	1,447	15	1,668	1,897	3,748
Ashley	20,838	4,889	3,929	415	1,619	1,641	17	1,919	2,167	4,040
Clark	22,633	4,334	3,638	367	1,824	1,666	18	1,823	2,082	4,466
Crittenden	48,963	13,578	6,133	1,151	3,608	3,380	39	3,647	4,267	12,473
Garland	97,177	20,122	21,427	1,706	7,785	8,111	78	9,762	10,867	18,354
Jackson	17,338	3,488	2,948	296	1,405	1,366	14	1,541	1,764	4,150
Newton	7,913	1,563	1,976	133	643	698	6	866	955	1,894
Polk	20,216	4,766	4,438	404	1,562	1,647	16	2,000	2,220	4,869
Pulaski	392,664	92,607	55,006	7,852	30,450	28,558	315	31,092	36,114	74,375
Union	40,144	9,591	6,842	813	3,111	3,095	32	3,542	4,043	7,800
Washington	225,477	56,325	24,743	4,776	16,954	14,630	183	14,926	17,610	36,600
Totals	**911,796**	**215,518**	**134,360**	**18,273**	**70,403**	**66,239**	**733**	**72,787**	**83,988**	**172,769**

ARKANSAS

American Lung Association in Arkansas

www.lung.org/arkansas

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Arkansas	DNC	DNC	DNC	DNC	DNC
Ashley	DNC	DNC	DNC	DNC	DNC
Clark	1	0	0	0.3	B
Crittenden	1	0	0	0.3	B
Garland	DNC	DNC	DNC	DNC	DNC
Jackson	DNC	DNC	DNC	DNC	DNC
Newton	0	0	0	0.0	A
Polk	0	0	0	0.0	A
Pulaski	4	0	0	1.3	C
Union	DNC	DNC	DNC	DNC	DNC
Washington	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Arkansas	0	0	0	0.0	A	9.1	PASS
Ashley	0	0	0	0.0	A	8.6	PASS
Clark	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Crittenden	1	0	0	0.3	B	9.4	PASS
Garland	0	0	0	0.0	A	9.0	PASS
Jackson	0	0	0	0.0	A	8.9	PASS
Newton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	0	0	0	0.0	A	9.2	PASS
Pulaski	1	0	0	0.3	B	10.7	PASS
Union	0	0	0	0.0	A	9.1	PASS
Washington	0	0	0	0.0	A	8.6	PASS

CALIFORNIA

American Lung Association in California

www.lung.org/california

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Alameda	1,638,215	346,302	208,711	24,746	99,232	51,297	709	80,675	126,353	184,716
Amador	37,001	5,654	9,539	404	2,475	1,589	16	2,803	4,144	4,404
Butte	225,411	45,348	39,543	3,240	13,978	7,812	98	12,787	19,274	47,269
Calaveras	44,828	7,795	11,595	557	2,929	1,912	19	3,403	5,033	5,781
Colusa	21,482	5,958	2,889	426	1,198	646	9	1,042	1,611	2,800
Contra Costa	1,126,745	261,320	164,504	18,673	66,864	36,598	488	59,728	92,596	114,123
El Dorado	184,452	37,919	34,393	2,710	11,424	6,776	80	11,581	17,709	16,634
Fresno	974,861	279,544	112,074	19,976	53,384	27,289	423	42,457	66,139	241,669
Glenn	28,017	7,491	4,220	535	1,590	883	12	1,447	2,214	5,105
Humboldt	135,727	26,518	21,791	1,895	8,447	4,603	59	7,444	11,365	27,616
Imperial	180,191	51,119	22,442	3,653	9,934	5,187	78	8,178	12,647	41,685
Inyo	18,260	3,769	4,044	269	1,139	706	8	1,227	1,827	2,222
Kern	882,176	257,727	88,992	18,417	47,777	23,732	384	36,297	57,322	185,990
Kings	150,965	41,435	14,146	2,961	8,357	4,026	66	6,015	9,555	30,117
Lake	64,591	13,267	13,778	948	4,025	2,473	28	4,282	6,420	13,006
Los Angeles	10,170,292	2,279,839	1,277,335	162,912	606,055	312,736	4,407	490,888	767,731	1,675,802
Madera	154,998	42,615	20,374	3,045	8,663	4,595	67	7,321	11,296	33,258
Marin	261,221	53,520	52,327	3,824	16,244	9,837	113	16,960	25,706	19,100
Mariposa	17,531	2,875	4,421	205	1,157	744	8	1,316	1,952	2,627
Mendocino	87,649	18,982	17,382	1,356	5,368	3,203	38	5,454	8,187	17,508
Merced	268,455	80,152	28,517	5,727	14,430	7,254	117	11,165	17,497	68,026
Monterey	433,898	114,387	53,530	8,174	24,563	12,728	189	19,992	31,075	63,732
Napa	142,456	30,661	24,821	2,191	8,688	4,953	62	8,241	12,528	13,960
Nevada	98,877	17,428	24,201	1,245	6,422	4,090	43	7,193	10,664	12,137
Orange	3,169,776	716,153	430,447	51,175	188,995	100,412	1,374	160,772	250,372	398,428
Placer	375,391	84,957	69,332	6,071	22,644	13,266	162	22,400	33,857	32,093
Plumas	18,409	3,149	4,729	225	1,206	785	8	1,395	2,065	2,503
Riverside	2,361,026	612,848	320,086	43,793	134,810	71,829	1,024	114,813	177,144	377,244
Sacramento	1,501,335	361,617	198,168	25,840	87,748	46,278	650	73,651	114,506	250,325
San Benito	58,792	15,631	6,957	1,117	3,316	1,731	26	2,748	4,328	5,454
San Bernardino	2,128,133	572,173	228,666	40,886	119,170	59,986	923	92,725	146,418	394,031
San Diego	3,299,521	728,037	431,999	52,024	197,708	102,514	1,433	161,074	250,288	445,948
San Francisco	864,816	115,963	126,593	8,286	57,569	29,633	376	46,201	71,392	105,244
San Joaquin	726,106	199,894	87,579	14,284	40,454	21,053	315	33,228	51,852	124,606
San Luis Obispo	281,401	50,837	51,231	3,633	17,910	10,097	122	16,633	25,113	38,448
San Mateo	765,135	162,283	114,498	11,596	46,568	25,369	331	41,231	63,775	63,663
Santa Barbara	444,769	99,537	63,670	7,113	26,618	14,037	193	22,203	33,995	66,475
Santa Clara	1,918,044	436,397	239,977	31,184	113,823	59,008	833	93,034	145,834	156,430

CALIFORNIA (cont.)

American Lung Association in California

www.lung.org/california

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Santa Cruz	274,146	54,183	38,794	3,872	16,944	8,989	119	14,364	22,322	40,480
Shasta	179,533	38,620	35,628	2,760	11,015	6,564	78	11,166	16,752	33,556
Siskiyou	43,554	8,813	10,231	630	2,737	1,734	19	3,039	4,503	9,725
Solano	436,092	99,381	61,524	7,102	25,974	13,988	189	22,587	35,069	50,972
Sonoma	502,146	102,120	87,731	7,297	31,075	17,715	217	29,511	45,011	54,563
Stanislaus	538,388	146,063	67,324	10,437	30,189	15,817	233	25,049	38,935	103,646
Sutter	96,463	25,170	14,342	1,799	5,517	3,029	42	4,928	7,539	16,721
Tehama	63,308	15,129	11,481	1,081	3,756	2,197	27	3,705	5,598	14,073
Trinity	13,069	2,207	3,209	158	856	549	6	970	1,445	2,523
Tulare	459,863	144,036	49,147	10,292	24,222	12,265	200	18,970	29,653	123,922
Tuolumne	53,709	8,959	12,976	640	3,523	2,209	23	3,851	5,703	7,305
Ventura	850,536	202,649	119,596	14,481	49,997	27,022	369	43,731	67,850	83,389
Yolo	213,016	45,741	24,994	3,269	12,808	6,335	92	9,602	14,965	35,877
Totals	**38,984,776**	**9,084,172**	**5,166,478**	**649,133**	**2,301,495**	**1,210,079**	**16,906**	**1,921,480**	**2,987,129**	**5,866,931**

CALIFORNIA

American Lung Association in California

www.lung.org/california

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alameda	19	0	0	6.3	F	11	0	0	3.7	F	10.8	PASS
Amador	20	0	0	6.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Butte	23	1	0	8.2	F	4	1	0	1.8	C	9.3	PASS
Calaveras	23	1	0	8.2	F	2	1	1	1.8	C	8.6	PASS
Colusa	0	0	0	0.0	A	3	1	0	1.5	C	7.6	PASS
Contra Costa	13	0	0	4.3	F	3	0	0	1.0	C	10.5	PASS
El Dorado	87	4	0	31.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fresno	215	41	1	92.8	F	68	37	0	41.2	F	15.4	FAIL
Glenn	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Humboldt	0	0	0	0.0	A	4	0	0	1.3	C	INC	INC
Imperial	63	3	0	22.5	F	22	4	0	9.3	F	13.1	FAIL
Inyo	9	0	0	3.0	D	6	14	1	9.7	F	7.6	PASS
Kern	232	45	1	100.5	F	81	50	1	52.7	F	20.8	FAIL
Kings	120	9	0	44.5	F	65	39	0	41.2	F	22.2	FAIL
Lake	0	0	0	0.0	A	0	1	0	0.5	B	4.0	PASS
Los Angeles	202	78	3	108.3	F	27	3	0	10.5	F	12.3	FAIL
Madera	124	11	0	46.8	F	47	18	0	24.7	F	15.2	FAIL
Marin	0	0	0	0.0	A	5	0	0	1.7	C	10.0	PASS
Mariposa	49	0	0	16.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mendocino	0	0	0	0.0	A	2	2	0	1.7	C	INC	INC
Merced	94	4	0	33.3	F	48	7	0	19.5	F	12.5	FAIL
Monterey	0	0	0	0.0	A	1	0	0	0.3	B	6.3	PASS
Napa	2	0	0	0.7	B	2	0	0	0.7	B	11.4	PASS
Nevada	74	2	0	25.7	F	1	1	0	0.8	B	5.3	PASS
Orange	26	4	0	10.7	F	8	0	0	2.7	D	7.8	PASS
Placer	49	5	0	18.8	F	5	6	1	5.3	F	7.8	PASS
Plumas	DNC	DNC	DNC	DNC	DNC	31	2	0	11.3	F	14.9	FAIL
Riverside	243	82	0	122.0	F	36	4	0	14.0	F	14.1	FAIL
Sacramento	72	4	0	26.0	F	23	0	0	7.7	F	10.2	PASS
San Benito	9	0	0	3.0	D	0	0	0	0.0	A	5.0	PASS
San Bernardino	220	126	9	142.3	F	18	0	0	6.0	F	12.0	PASS
San Diego	92	1	0	31.2	F	4	2	0	2.3	D	10.0	PASS
San Francisco	0	0	0	0.0	A	2	0	0	0.7	B	8.4	PASS
San Joaquin	39	2	0	14.0	F	52	11	0	22.8	F	14.2	FAIL
San Luis Obispo	21	0	0	7.0	F	7	0	0	2.3	D	12.1	FAIL
San Mateo	2	0	0	0.7	B	3	0	0	1.0	C	7.8	PASS

CALIFORNIA (cont.)

American Lung Association in California

www.lung.org/california

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Santa Barbara	8	2	0	3.7	F
Santa Clara	13	0	0	4.3	F
Santa Cruz	0	0	0	0.0	A
Shasta	16	0	0	5.3	F
Siskiyou	1	0	0	0.3	B
Solano	4	0	0	1.3	C
Sonoma	0	0	0	0.0	A
Stanislaus	84	4	0	30.0	F
Sutter	19	1	0	6.8	F
Tehama	42	1	0	14.5	F
Trinity	DNC	DNC	DNC	DNC	DNC
Tulare	226	33	1	92.5	F
Tuolumne	29	0	0	9.7	F
Ventura	37	1	0	12.8	F
Yolo	4	0	0	1.3	C

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Santa Barbara	0	0	0	0.0	A	7.7	PASS
Santa Clara	9	2	0	4.0	F	10.2	PASS
Santa Cruz	33	0	0	11.0	F	5.6	PASS
Shasta	0	1	0	0.5	B	6.2	PASS
Siskiyou	4	2	0	2.3	D	INC	INC
Solano	14	0	0	4.7	F	9.8	PASS
Sonoma	0	0	0	0.0	A	INC	INC
Stanislaus	64	17	0	29.8	F	13.8	FAIL
Sutter	3	0	0	1.0	C	9.1	PASS
Tehama	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Trinity	INC	INC	INC	INC	INC	INC	INC
Tulare	18	13	0	12.5	F	17.6	FAIL
Tuolumne	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ventura	0	0	0	0.0	A	9.4	PASS
Yolo	0	0	0	0.0	A	7.0	PASS

COLORADO

American Lung Association in Colorado

www.lung.org/colorado

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Adams	491,337	135,138	47,987	11,458	32,466	13,882	209	19,244	21,576	61,980
Arapahoe	631,096	153,148	76,968	12,985	43,314	20,195	268	28,436	31,401	57,651
Boulder	319,372	63,682	40,331	5,399	23,227	10,580	136	14,899	16,431	38,046
Chaffee	18,658	2,848	4,366	241	1,409	858	8	1,275	1,329	2,006
Clear Creek	9,303	1,472	1,743	125	695	408	4	585	637	880
Denver	682,545	140,671	74,815	11,927	49,657	20,404	290	28,558	31,559	105,275
Douglas	322,387	89,885	33,895	7,621	20,957	9,951	137	13,757	15,563	10,917
El Paso	674,471	167,331	79,908	14,188	46,093	20,905	287	29,453	32,453	72,201
Garfield	58,095	14,941	6,534	1,267	3,902	1,825	25	2,543	2,846	5,909
Gunnison	16,067	2,807	1,851	238	1,211	515	7	718	799	1,892
Jackson	1,356	237	296	20	99	61	1	89	94	189
Jefferson	565,524	116,627	85,287	9,889	40,386	20,708	240	29,549	32,231	44,068
La Plata	54,688	10,531	8,129	893	3,981	1,996	23	2,843	3,105	4,993
Larimer	333,577	67,793	47,570	5,748	24,144	11,356	142	16,259	17,585	39,648
Mesa	148,513	33,122	25,879	2,808	10,389	5,551	63	8,110	8,600	20,326
Moffat	12,937	3,317	1,719	281	865	438	6	619	682	1,496
Montezuma	26,168	5,909	5,169	501	1,807	1,067	11	1,570	1,656	4,994
Park	16,510	2,744	2,844	233	1,215	723	7	1,023	1,136	1,511
Pitkin	17,787	2,772	2,908	235	1,347	707	8	1,008	1,101	1,243
Pueblo	163,591	37,836	28,497	3,208	11,311	6,102	69	8,917	9,456	31,501
Rio Blanco	6,571	1,561	916	132	452	224	3	319	348	607
San Miguel	7,879	1,444	929	122	579	277	3	382	434	865
Weld	285,174	76,551	32,528	6,491	18,940	8,642	121	12,144	13,430	31,531
Totals	**4,863,606**	**1,132,367**	**611,069**	**96,012**	**338,444**	**157,371**	**2,067**	**222,301**	**244,450**	**539,729**

COLORADO

American Lung Association in Colorado

www.lung.org/colorado

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	19	0	0	6.3	F	2	0	0	0.7	B	INC	INC
Arapahoe	21	0	0	7.0	F	0	0	0	0.0	A	6.3	PASS
Boulder	25	1	0	8.8	F	2	0	0	0.7	B	7.0	PASS
Chaffee	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clear Creek	32	3	0	12.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Denver	8	0	0	2.7	D	9	1	0	3.5	F	7.5	PASS
Douglas	41	3	0	15.2	F	1	0	0	0.3	B	5.5	PASS
El Paso	11	0	0	3.7	F	0	0	0	0.0	A	5.7	PASS
Garfield	2	0	0	0.7	B	0	0	0	0.0	A	INC	INC
Gunnison	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	62	6	0	23.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Plata	7	0	0	2.3	D	0	0	0	0.0	A	INC	INC
Larimer	56	2	0	19.7	F	2	1	0	1.2	C	6.8	PASS
Mesa	1	0	0	0.3	B	4	0	0	1.3	C	7.4	PASS
Moffat	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montezuma	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Park	5	0	0	1.7	C	INC	INC	INC	INC	INC	INC	INC
Pitkin	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pueblo	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	5.8	PASS
Rio Blanco	9	4	1	5.7	F	0	0	0	0.0	A	8.2	PASS
San Miguel	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weld	19	0	0	6.3	F	2	0	0	0.7	B	7.8	PASS

CONNECTICUT

American Lung Association in Connecticut

www.lung.org/connecticut

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Fairfield	948,053	220,906	137,799	25,884	76,395	36,729	598	51,524	66,675	83,612
Hartford	895,841	192,728	142,573	22,583	73,932	35,966	565	51,006	64,973	96,763
Litchfield	183,603	35,040	34,949	4,106	15,442	8,423	116	12,149	15,281	13,383
Middlesex	164,063	30,985	29,944	3,631	13,892	7,288	103	10,464	13,197	10,744
New Haven	859,470	178,891	137,053	20,961	71,618	34,597	542	49,032	62,466	112,801
New London	271,863	54,507	44,994	6,387	22,836	11,233	172	15,975	20,290	28,760
Tolland	151,420	27,234	21,691	3,191	13,134	5,907	96	8,209	10,681	9,593
Windham	116,573	23,768	17,803	2,785	9,752	4,697	74	6,602	8,518	12,211
Totals	**3,590,886**	**764,059**	**566,806**	**89,528**	**297,001**	**144,841**	**2,265**	**204,962**	**262,081**	**367,867**

CONNECTICUT

American Lung Association in Connecticut

www.lung.org/connecticut

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Fairfield	51	14	0	24.0	F
Hartford	23	1	0	8.2	F
Litchfield	11	0	0	3.7	F
Middlesex	28	3	0	10.8	F
New Haven	28	6	0	12.3	F
New London	15	4	0	7.0	F
Tolland	22	0	0	7.3	F
Windham	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fairfield	2	0	0	0.7	B	9.4	PASS
Hartford	0	0	0	0.0	A	7.3	PASS
Litchfield	0	0	0	0.0	A	5.2	PASS
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC
New Haven	3	0	0	1.0	C	8.7	PASS
New London	1	0	0	0.3	B	INC	INC
Tolland	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Windham	DNC	DNC	DNC	DNC	DNC	DNC	DNC

DELAWARE

American Lung Association in Delaware

www.lung.org/delaware

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Kent	173,533	40,353	27,752	3,421	12,327	9,164	122	12,038	14,468	23,947
New Castle	556,779	122,224	78,983	10,363	40,396	29,290	391	37,276	46,136	65,503
Sussex	215,622	41,809	53,780	3,545	16,172	13,976	152	19,956	22,909	26,205
Totals	**945,934**	**204,386**	**160,515**	**17,330**	**68,894**	**52,430**	**665**	**69,271**	**83,513**	**115,655**

DELAWARE

American Lung Association in Delaware

www.lung.org/delaware

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Kent	1	0	0	0.3	B
New Castle	17	1	0	6.2	F
Sussex	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	0	0	0	0.0	A	8.1	PASS
New Castle	9	1	0	3.5	F	9.6	PASS
Sussex	0	0	0	0.0	A	8.4	PASS

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

www.lung.org/districtofcolumbia

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
District of Columbia	672,228	118,107	77,004	10,175	59,002	28,305	375	37,044	46,280	113,185
Totals	**672,228**	**118,107**	**77,004**	**10,175**	**59,002**	**28,305**	**375**	**37,044**	**46,280**	**113,185**

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

www.lung.org/districtofcolumbia

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
District of Columbia	10	0	0	3.3	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
District of Columbia	0	0	0	0.0	A	9.2	PASS

FLORIDA

American Lung Association in Florida

www.lung.org/florida

	AT-RISK GROUPS									
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Alachua	259,964	46,861	33,506	3,973	16,007	11,918	155	15,044	18,257	52,258
Baker	27,420	6,769	3,636	574	1,567	1,313	16	1,700	2,073	4,189
Bay	181,635	39,234	29,823	3,327	10,763	9,517	108	12,574	15,154	29,301
Brevard	568,088	105,472	130,247	8,943	34,825	35,230	338	48,315	57,294	75,268
Broward	1,896,425	407,683	296,906	34,567	112,749	98,583	1,128	129,582	156,814	263,607
Citrus	141,058	21,032	50,225	1,783	8,877	10,724	84	15,432	17,779	24,249
Collier	357,305	63,956	107,485	5,423	21,743	24,126	213	34,140	39,548	48,198
Columbia	68,348	14,889	12,005	1,262	4,035	3,664	41	4,882	5,858	12,413
Duval	913,010	207,260	119,785	17,573	53,462	43,566	543	56,074	68,376	142,660
Escambia	311,003	64,885	50,304	5,502	18,556	15,977	186	21,003	25,283	44,835
Flagler	105,392	18,778	30,717	1,592	6,449	7,144	63	10,072	11,729	12,213
Highlands	99,491	17,476	33,952	1,482	6,037	7,096	59	10,196	11,699	22,419
Hillsborough	1,349,050	311,084	180,904	26,376	78,572	64,466	803	83,213	101,279	209,040
Holmes	19,324	3,848	3,762	326	1,166	1,091	12	1,468	1,752	4,535
Indian River	147,919	25,425	45,664	2,156	9,095	10,294	88	14,601	16,934	19,051
Lake	325,875	64,420	85,204	5,462	19,489	20,536	194	28,638	33,475	41,272
Lee	701,982	129,382	189,043	10,970	42,657	45,196	418	63,130	73,716	110,398
Leon	286,272	54,381	33,957	4,611	17,445	12,742	170	15,951	19,452	59,366
Liberty	8,331	1,609	1,004	136	510	400	5	508	624	1,422
Manatee	363,369	69,687	94,063	5,909	21,940	23,107	216	32,165	37,697	53,080
Marion	343,254	64,096	97,002	5,435	20,749	22,493	204	31,619	36,781	62,271
Martin	156,283	26,273	46,400	2,228	9,690	10,828	93	15,280	17,805	17,125
Miami-Dade	2,693,117	552,280	420,642	46,827	161,793	138,709	1,602	181,691	219,597	529,850
Okaloosa	198,664	43,993	30,682	3,730	11,671	9,957	119	13,045	15,737	21,966
Orange	1,288,126	290,689	141,831	24,647	75,573	57,410	768	72,218	88,804	196,882
Osceola	323,993	80,769	41,928	6,848	18,388	14,891	193	19,170	23,316	59,226
Palm Beach	1,422,789	276,718	326,763	23,462	85,823	85,174	846	116,804	137,780	189,355
Pasco	497,909	101,714	112,844	8,624	29,705	29,645	296	40,664	48,023	71,760
Pinellas	949,827	159,853	222,148	13,554	59,433	59,907	564	82,129	97,345	127,287
Polk	650,092	147,812	128,029	12,533	37,680	35,383	387	47,818	56,748	109,907
Santa Rosa	167,040	37,266	24,872	3,160	9,842	8,520	100	11,153	13,538	19,681
Sarasota	405,549	59,816	140,193	5,072	25,580	30,252	241	43,364	50,014	38,874
Seminole	449,144	95,641	66,050	8,109	26,795	22,857	267	29,808	36,207	51,205
St. Lucie	298,563	61,111	68,766	5,182	17,789	17,857	178	24,544	28,946	48,570
Volusia	517,887	92,727	122,495	7,862	31,901	32,178	308	44,218	52,234	82,326
Wakulla	31,535	6,596	4,347	559	1,896	1,599	19	2,072	2,532	4,623
Totals	**18,525,033**	**3,771,485**	**3,527,184**	**319,778**	**1,110,252**	**1,024,351**	**11,026**	**1,374,285**	**1,640,200**	**2,860,682**

FLORIDA

American Lung Association in Florida

www.lung.org/florida

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alachua	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Baker	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bay	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brevard	0	0	0	0.0	A	0	0	0	0.0	A	5.6	PASS
Broward	2	0	0	0.7	B	0	0	0	0.0	A	INC	INC
Citrus	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	6.2	PASS
Collier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duval	4	0	0	1.3	C	1	0	0	0.3	B	7.7	PASS
Escambia	5	0	0	1.7	C	0	0	0	0.0	A	7.7	PASS
Flagler	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Highlands	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hillsborough	10	0	0	3.3	F	0	0	0	0.0	A	7.8	PASS
Holmes	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Indian River	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lee	0	0	0	0.0	A	0	0	0	0.0	A	5.9	PASS
Leon	0	0	0	0.0	A	0	1	0	0.5	B	8.3	PASS
Liberty	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Manatee	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marion	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Miami-Dade	2	0	0	0.7	B	1	0	0	0.3	B	6.0	PASS
Okaloosa	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orange	3	0	0	1.0	C	0	0	0	0.0	A	6.2	PASS
Osceola	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Palm Beach	3	0	0	1.0	C	0	0	0	0.0	A	5.3	PASS
Pasco	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pinellas	4	0	0	1.3	C	0	0	0	0.0	A	6.5	PASS
Polk	2	0	0	0.7	B	0	0	0	0.0	A	6.5	PASS
Santa Rosa	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sarasota	6	0	0	2.0	C	0	0	0	0.0	A	6.1	PASS
Seminole	0	0	0	0.0	A	0	0	0	0.0	A	6.1	PASS
St. Lucie	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Volusia	1	0	0	0.3	B	0	0	0	0.0	A	6.1	PASS
Wakulla	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC

GEORGIA

American Lung Association in Georgia

www.lung.org/georgia

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bibb	153,721	38,331	22,157	4,261	10,747	8,295	101	11,020	13,528	39,343
Chatham	286,956	63,320	40,041	7,038	20,576	15,162	189	20,027	24,437	48,579
Chattooga	24,922	5,646	4,126	628	1,807	1,455	17	1,949	2,400	4,781
Clarke	123,912	21,518	12,223	2,392	9,081	5,512	81	7,032	8,370	42,773
Clayton	273,955	77,100	23,396	8,570	18,229	12,585	179	16,189	19,824	62,452
Cobb	741,334	182,064	81,302	20,237	52,131	37,970	488	49,492	60,804	83,213
Columbia	144,052	37,251	17,316	4,140	9,969	7,447	95	9,777	12,018	13,355
Coweta	138,427	35,281	17,659	3,922	9,689	7,436	91	9,804	12,086	14,976
Dawson	23,312	4,936	4,330	549	1,738	1,461	15	1,971	2,435	2,800
DeKalb	734,871	173,901	78,499	19,329	51,950	36,932	482	47,985	58,756	128,675
Dougherty	91,332	22,653	12,926	2,518	6,368	4,841	60	6,420	7,865	25,847
Douglas	140,733	37,540	15,015	4,173	9,654	7,098	92	9,256	11,392	19,638
Floyd	96,504	22,599	15,526	2,512	6,893	5,458	64	7,300	8,966	18,060
Fulton	1,010,562	231,537	108,711	25,736	71,920	50,682	666	65,813	80,451	156,705
Glynn	83,579	19,122	15,181	2,125	6,058	5,027	55	6,784	8,357	14,999
Gwinnett	895,823	247,554	79,872	27,516	60,468	42,829	592	55,273	67,944	112,026
Hall	193,535	50,521	27,256	5,615	13,315	10,249	128	13,608	16,702	32,263
Henry	217,739	57,991	23,693	6,446	14,976	11,108	143	14,506	17,871	21,377
Houston	150,033	38,453	18,150	4,274	10,384	7,705	99	10,116	12,416	22,510
Lowndes	112,865	28,087	12,987	3,122	7,710	5,316	75	6,935	8,405	28,460
Murray	39,565	10,027	5,446	1,115	2,766	2,143	26	2,839	3,494	6,960
Muscogee	200,579	48,646	24,713	5,407	13,983	10,088	133	13,232	16,148	42,678
Paulding	152,238	41,773	15,125	4,643	10,311	7,452	100	9,678	11,899	13,326
Pike	17,941	4,379	2,688	487	1,280	1,026	12	1,367	1,688	2,074
Richmond	201,793	47,511	26,108	5,281	14,261	10,493	133	13,808	16,888	46,401
Rockdale	88,856	22,656	11,700	2,518	6,237	4,853	58	6,414	7,916	14,009
Sumter	30,779	7,285	4,783	810	2,179	1,690	20	2,254	2,762	8,970
Walker	68,066	15,176	11,539	1,687	4,973	4,048	45	5,430	6,692	12,485
Washington	20,816	4,586	3,374	510	1,525	1,224	14	1,636	2,016	4,969
Wilkinson	9,155	2,095	1,670	233	670	568	6	767	949	1,891
Totals	**6,467,955**	**1,599,539**	**737,512**	**177,790**	**451,848**	**328,152**	**4,259**	**428,684**	**525,480**	**1,046,595**

GEORGIA

American Lung Association in Georgia

www.lung.org/georgia

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bibb	2	0	0	0.7	B	1	0	0	0.3	B	10.2	PASS
Chatham	0	0	0	0.0	A	0	0	0	0.0	A	8.9	PASS
Chattooga	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clarke	0	0	0	0.0	A	0	0	0	0.0	A	9.5	PASS
Clayton	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	10.0	PASS
Cobb	5	0	0	1.7	C	0	0	0	0.0	A	9.6	PASS
Columbia	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Coweta	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dawson	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
DeKalb	8	0	0	2.7	D	0	0	0	0.0	A	9.4	PASS
Dougherty	DNC	DNC	DNC	DNC	DNC	7	0	0	2.3	D	9.8	PASS
Douglas	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Floyd	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.9	PASS
Fulton	17	3	0	7.2	F	0	0	0	0.0	A	10.5	PASS
Glynn	0	0	0	0.0	A	0	0	0	0.0	A	8.0	PASS
Gwinnett	6	1	0	2.5	D	0	0	0	0.0	A	9.0	PASS
Hall	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.4	PASS
Henry	11	1	0	4.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Houston	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.9	PASS
Lowndes	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.5	PASS
Murray	1	1	0	0.8	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Muscogee	0	0	0	0.0	A	0	0	0	0.0	A	9.6	PASS
Paulding	0	0	0	0.0	A	0	0	0	0.0	A	8.2	PASS
Pike	4	1	0	1.8	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richmond	0	0	0	0.0	A	0	0	0	0.0	A	9.5	PASS
Rockdale	14	0	0	4.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sumter	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Walker	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.9	PASS
Washington	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.2	PASS
Wilkinson	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	10.0	PASS

HAWAII

American Lung Association in Hawaii

www.lung.org/hawaii

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Hawaii	196,428	43,217	35,851	4,291	15,151	6,892	99	10,359	13,874	35,294
Honolulu	998,714	214,852	161,966	21,333	79,203	33,353	505	47,503	64,243	88,536
Kauai	71,735	16,019	12,902	1,591	5,515	2,500	36	3,748	5,026	7,928
Maui	164,637	36,745	26,166	3,649	12,794	5,586	83	8,155	11,097	17,333
Totals	**1,431,514**	**310,833**	**236,885**	**30,864**	**112,663**	**48,331**	**724**	**69,765**	**94,239**	**149,091**

HAWAII

American Lung Association in Hawaii

www.lung.org/hawaii

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Hawaii	DNC	DNC	DNC	DNC	DNC
Honolulu	0	0	0	0.0	A
Kauai	DNC	DNC	DNC	DNC	DNC
Maui	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Hawaii	2	0	0	0.7	B	12.1	FAIL
Honolulu	0	0	0	0.0	A	5.4	PASS
Kauai	0	0	0	0.0	A	3.9	PASS
Maui	1	0	0	0.3	B	4.8	PASS

IDAHO

American Lung Association in Idaho

www.lung.org/idaho

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Ada	434,211	107,568	56,644	9,121	29,849	15,427	205	21,998	25,165	49,369
Bannock	83,744	22,302	11,020	1,891	5,594	2,864	40	4,112	4,655	18,179
Benewah	9,052	2,003	1,973	170	643	409	4	634	702	1,614
Butte	2,501	624	512	53	171	107	1	165	183	394
Canyon	207,478	61,522	26,566	5,216	13,298	6,883	98	9,906	11,224	32,329
Franklin	13,074	4,385	1,804	372	791	432	6	636	714	1,253
Jerome	22,814	7,115	2,811	603	1,434	748	11	1,073	1,224	3,577
Lemhi	7,735	1,398	2,193	119	574	398	4	642	694	1,347
Shoshone	12,432	2,464	2,772	209	909	576	6	892	988	2,577
Totals	**793,041**	**209,381**	**106,295**	**17,753**	**53,263**	**27,843**	**375**	**40,057**	**45,548**	**110,639**

IDAHO

American Lung Association in Idaho

www.lung.org/idaho

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Ada	6	1	0	2.5	D
Bannock	DNC	DNC	DNC	DNC	DNC
Benewah	DNC	DNC	DNC	DNC	DNC
Butte	0	0	0	0.0	A
Canyon	DNC	DNC	DNC	DNC	DNC
Franklin	DNC	DNC	DNC	DNC	DNC
Jerome	DNC	DNC	DNC	DNC	DNC
Lemhi	DNC	DNC	DNC	DNC	DNC
Shoshone	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ada	INC	INC	INC	INC	INC	INC	INC
Bannock	3	1	0	1.5	C	7.3	PASS
Benewah	INC	INC	INC	INC	INC	INC	INC
Butte	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canyon	INC	INC	INC	INC	INC	INC	INC
Franklin	20	12	0	12.7	F	INC	INC
Jerome	INC	INC	INC	INC	INC	INC	INC
Lemhi	34	6	0	14.3	F	12.7	FAIL
Shoshone	43	5	0	16.8	F	13.7	FAIL

ILLINOIS

American Lung Association in Illinois

www.lung.org/illinois

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Adams	67,013	15,213	12,711	1,125	4,300	3,243	43	4,879	5,821	8,674
Champaign	208,861	39,693	23,639	2,935	14,382	8,428	135	10,735	13,579	38,751
Clark	15,979	3,632	3,029	269	1,024	782	10	1,178	1,408	2,171
Cook	5,238,216	1,175,147	692,946	86,906	341,993	224,961	3,377	306,619	381,122	833,241
DuPage	933,736	216,777	129,486	16,031	60,047	41,707	603	58,108	72,050	65,538
Effingham	34,371	8,103	5,870	599	2,187	1,608	22	2,362	2,852	3,313
Hamilton	8,200	1,815	1,678	134	528	413	5	633	750	1,055
Jersey	22,372	4,762	4,016	352	1,463	1,095	14	1,620	1,954	2,455
Jo Daviess	22,086	4,271	5,552	316	1,460	1,232	14	1,978	2,301	2,060
Kane	530,847	141,342	64,659	10,453	32,725	21,999	344	29,962	37,481	56,882
Lake	703,910	176,512	88,880	13,054	44,232	30,322	456	41,581	52,009	61,899
Macon	107,303	23,914	19,664	1,769	6,933	5,160	69	7,683	9,211	18,784
Macoupin	46,045	9,770	8,897	723	3,007	2,302	30	3,469	4,148	6,192
Madison	266,209	59,077	42,437	4,369	17,297	12,351	172	17,738	21,641	33,734
McHenry	307,343	75,431	38,883	5,578	19,422	13,535	199	18,604	23,327	24,659
McLean	173,166	38,016	20,468	2,811	11,432	7,115	112	9,355	11,766	18,969
Peoria	186,221	44,415	28,650	3,285	11,867	8,285	120	11,823	14,415	28,269
Randolph	32,852	6,300	5,782	466	2,214	1,602	22	2,336	2,826	4,049
Rock Island	146,133	32,595	26,190	2,410	9,450	6,954	94	10,290	12,363	18,596
Sangamon	198,712	45,433	31,830	3,360	12,791	9,198	128	13,260	16,158	29,798
St. Clair	264,052	63,022	37,645	4,661	16,833	11,705	170	16,430	20,263	42,464
Will	687,263	179,235	79,991	13,255	42,712	28,544	445	38,444	48,427	53,883
Winnebago	287,078	68,062	46,023	5,033	18,270	13,182	185	19,061	23,193	41,541
Totals	**10,487,968**	**2,432,537**	**1,418,926**	**179,893**	**676,570**	**455,721**	**6,771**	**628,146**	**779,067**	**1,396,977**

ILLINOIS

American Lung Association in Illinois

www.lung.org/illinois

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Champaign	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Clark	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cook	17	1	0	6.2	F	INC	INC	INC	INC	INC	INC	INC
DuPage	3	0	0	1.0	C	INC	INC	INC	INC	INC	INC	INC
Effingham	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Jersey	3	1	0	1.5	C	INC	INC	INC	INC	INC	INC	INC
Jo Daviess	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kane	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Lake	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Macon	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Macoupin	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	22	0	0	7.3	F	INC	INC	INC	INC	INC	INC	INC
McHenry	5	0	0	1.7	C	INC	INC	INC	INC	INC	INC	INC
McLean	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Peoria	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Randolph	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
Rock Island	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Sangamon	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
St. Clair	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
Will	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Winnebago	3	0	0	1.0	C	INC	INC	INC	INC	INC	INC	INC

INDIANA

American Lung Association in Indiana

www.lung.org/indiana

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Allen	368,450	96,167	49,434	7,232	28,100	21,417	270	26,495	30,756	52,689
Bartholomew	81,162	19,533	12,282	1,469	6,334	4,972	60	6,242	7,129	9,462
Boone	63,344	17,002	8,084	1,279	4,779	3,735	46	4,561	5,364	3,734
Brown	14,977	2,893	3,272	218	1,215	1,145	11	1,489	1,632	1,688
Carroll	19,856	4,508	3,604	339	1,561	1,347	15	1,723	1,925	1,855
Clark	115,371	26,683	16,811	2,007	9,130	7,129	85	8,860	10,229	11,832
Delaware	116,852	22,109	18,947	1,663	9,771	7,248	85	9,213	10,402	24,820
Dubois	42,461	10,185	6,962	766	3,296	2,768	31	3,490	3,961	3,179
Elkhart	203,474	56,889	27,717	4,278	15,101	11,658	149	14,513	16,730	27,906
Floyd	76,778	17,795	11,459	1,338	6,056	4,879	56	6,060	6,995	8,502
Greene	32,441	7,205	5,983	542	2,565	2,222	24	2,847	3,175	4,710
Hamilton	309,697	87,329	33,758	6,567	23,072	17,116	227	20,525	24,634	14,366
Hancock	72,520	17,226	11,199	1,295	5,665	4,640	53	5,797	6,648	4,272
Hendricks	158,192	40,662	20,089	3,058	12,146	9,245	116	11,296	13,285	8,477
Henry	48,985	10,256	8,982	771	3,945	3,337	36	4,274	4,771	6,636
Howard	82,556	18,761	15,225	1,411	6,489	5,535	60	7,127	7,911	13,724
Huntington	36,630	8,072	5,967	607	2,924	2,386	27	3,005	3,418	3,832
Jackson	44,069	10,778	6,811	810	3,414	2,742	32	3,447	3,929	5,250
Johnson	149,633	37,532	21,118	2,822	11,549	8,924	110	11,099	12,807	11,720
Knox	37,927	8,005	6,383	602	3,067	2,439	28	3,102	3,494	6,735
Lake	487,865	118,118	73,176	8,882	37,969	30,309	357	37,867	43,453	79,740
LaPorte	110,884	24,277	17,940	1,826	8,873	7,209	82	9,068	10,327	16,294
Madison	129,723	28,550	22,366	2,147	10,340	8,494	95	10,823	12,157	20,636
Marion	939,020	234,220	108,060	17,613	73,292	52,169	686	63,121	75,137	189,323
Monroe	144,705	23,002	16,832	1,730	12,779	7,869	106	9,570	11,380	30,425
Montgomery	38,227	8,829	6,489	664	3,003	2,491	28	3,166	3,564	4,543
Morgan	69,648	16,261	10,890	1,223	5,462	4,557	51	5,682	6,526	7,814
Perry	19,347	3,996	3,346	300	1,570	1,287	14	1,635	1,843	2,341
Porter	167,688	37,980	24,962	2,856	13,333	10,585	123	13,158	15,182	18,931
Posey	25,512	5,795	4,202	436	2,012	1,715	19	2,151	2,455	2,442
Shelby	44,478	10,203	7,078	767	3,507	2,912	33	3,644	4,170	5,205
Spencer	20,715	4,658	3,820	350	1,630	1,429	15	1,828	2,041	1,931
St. Joseph	268,441	64,242	39,260	4,831	21,028	16,236	196	20,287	23,296	42,922
Tippecanoe	185,826	38,439	19,501	2,891	15,485	9,570	137	11,530	13,844	32,336
Vanderburgh	181,877	39,873	28,248	2,998	14,597	11,442	133	14,364	16,408	30,123
Vigo	107,896	22,180	16,090	1,668	8,853	6,580	80	8,240	9,450	20,027

INDIANA (cont.)

American Lung Association in Indiana

www.lung.org/indiana

	AT-RISK GROUPS									
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Wabash	32,138	6,905	6,374	519	2,560	2,213	24	2,882	3,160	3,625
Warrick	61,897	15,119	10,247	1,137	4,776	3,992	45	5,057	5,713	4,546
Whitley	33,406	7,743	5,457	582	2,622	2,194	25	2,759	3,140	2,598
Totals	**5,144,668**	**1,229,980**	**718,425**	**92,492**	**403,873**	**308,133**	**3,770**	**381,995**	**442,441**	**741,191**

INDIANA

American Lung Association in Indiana

www.lung.org/indiana

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	0	0	0	0.0	A	7	1	0	2.8	D	10.2	PASS
Bartholomew	3	0	0	1.0	C	INC	INC	INC	INC	INC	INC	INC
Boone	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brown	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	4	1	0	1.8	C	1	0	0	0.3	B	11.4	PASS
Delaware	0	0	0	0.0	A	2	0	0	0.7	B	9.7	PASS
Dubois	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	10.6	PASS
Elkhart	0	0	0	0.0	A	16	0	0	5.3	F	10.4	PASS
Floyd	6	0	0	2.0	C	1	0	0	0.3	B	10.0	PASS
Greene	3	0	0	1.0	C	0	0	0	0.0	A	9.5	PASS
Hamilton	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Hancock	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hendricks	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henry	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	9.1	PASS
Howard	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Huntington	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	5	0	0	1.7	C	8	2	0	3.7	F	11.0	PASS
LaPorte	8	0	0	2.7	D	2	0	0	0.7	B	9.5	PASS
Madison	0	0	0	0.0	A	3	0	0	1.0	C	9.6	PASS
Marion	4	0	0	1.3	C	10	1	0	3.8	F	11.7	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	0	1	0	0.5	B	9.4	PASS
Montgomery	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Morgan	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Porter	8	0	0	2.7	D	2	2	0	1.7	C	10.0	PASS
Posey	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Spencer	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	10.1	PASS
St. Joseph	3	0	0	1.0	C	5	1	0	2.2	D	9.7	PASS
Tippecanoe	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	9.8	PASS
Vanderburgh	13	0	0	4.3	F	0	0	0	0.0	A	10.7	PASS

INDIANA (cont.)

American Lung Association in Indiana

www.lung.org/indiana

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Vigo	0	0	0	0.0	A
Wabash	6	0	0	2.0	C
Warrick	4	0	0	1.3	C
Whitley	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	2	1	0	1.2	C	10.3	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	3	0	0	1.0	C	9.3	PASS

IOWA

American Lung Association in Iowa

www.lung.org/iowa

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Black Hawk	133,455	28,752	20,236	1,655	7,985	5,680	85	7,289	8,473	18,161
Bremer	24,722	5,422	4,661	312	1,462	1,149	16	1,548	1,757	1,791
Clinton	47,768	10,950	8,898	630	2,797	2,264	30	3,074	3,522	6,263
Delaware	17,403	4,134	3,170	238	1,010	823	11	1,119	1,288	1,743
Harrison	14,265	3,214	2,800	185	838	696	9	955	1,089	1,385
Johnson	144,251	29,208	15,003	1,681	8,840	5,358	92	6,265	7,568	24,908
Lee	35,089	7,594	6,698	437	2,088	1,693	22	2,301	2,633	5,358
Linn	219,916	52,166	32,289	3,003	12,826	9,353	140	12,093	14,166	23,524
Montgomery	10,234	2,280	2,172	131	601	515	6	716	809	1,339
Muscatine	43,011	10,915	6,676	628	2,450	1,857	27	2,445	2,847	4,871
Palo Alto	9,133	2,053	1,974	118	533	450	6	626	701	1,013
Polk	467,711	117,819	55,946	6,782	26,886	18,343	297	22,854	27,333	54,557
Pottawattamie	93,671	22,256	14,930	1,281	5,452	4,145	59	5,466	6,361	12,293
Scott	172,126	41,195	25,490	2,371	10,013	7,375	109	9,575	11,219	20,823
Story	96,021	16,276	10,417	937	6,112	3,587	62	4,132	4,950	15,717
Van Buren	7,344	1,697	1,534	98	427	365	5	508	575	1,154
Warren	48,626	12,180	7,409	701	2,785	2,097	31	2,750	3,212	3,641
Woodbury	102,782	26,929	14,335	1,550	5,802	4,192	65	5,397	6,331	13,957
Totals	**1,687,528**	**395,040**	**234,638**	**22,738**	**98,908**	**69,942**	**1,071**	**89,112**	**104,835**	**212,498**

IOWA

American Lung Association in Iowa

www.lung.org/iowa

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Black Hawk	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.0	PASS
Bremer	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	1	0	0	0.3	B	3	0	0	1.0	C	10.2	PASS
Delaware	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.7	PASS
Harrison	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	DNC	DNC	DNC	DNC	DNC	2	0	0	0.7	B	8.8	PASS
Lee	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	10.0	PASS
Linn	0	0	0	0.0	A	3	0	0	1.0	C	9.3	PASS
Montgomery	1	0	0	0.3	B	1	0	0	0.3	B	7.6	PASS
Muscatine	DNC	DNC	DNC	DNC	DNC	11	0	0	3.7	F	10.4	PASS
Palo Alto	1	0	0	0.3	B	0	0	0	0.0	A	7.8	PASS
Polk	0	0	0	0.0	A	0	0	0	0.0	A	8.3	PASS
Pottawattamie	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	9.0	PASS
Scott	0	0	0	0.0	A	5	0	0	1.7	C	10.1	PASS
Story	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Van Buren	0	0	0	0.0	A	0	0	0	0.0	A	8.0	PASS
Warren	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Woodbury	DNC	DNC	DNC	DNC	DNC	3	0	0	1.0	C	8.4	PASS

KANSAS

American Lung Association in Kansas

www.lung.org/kansas

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Johnson	580,159	145,597	76,022	12,903	37,954	26,585	365	33,371	41,203	31,474
Leavenworth	79,315	19,050	10,365	1,688	5,263	3,650	51	4,566	5,647	7,817
Linn	9,536	2,198	2,004	195	636	525	6	724	844	1,318
Neosho	16,346	4,044	3,030	358	1,067	835	10	1,127	1,330	2,995
Riley	75,247	13,025	6,256	1,154	5,394	2,707	48	2,986	3,925	15,560
Sedgwick	511,574	134,499	67,228	11,919	32,879	22,839	322	28,782	35,402	76,898
Shawnee	178,725	43,262	29,471	3,834	11,780	8,832	112	11,604	13,921	24,840
Sumner	23,535	5,821	4,135	516	1,540	1,200	15	1,600	1,904	2,701
Trego	2,927	545	707	48	206	177	2	248	286	298
Wyandotte	163,369	45,889	18,586	4,067	10,260	6,858	103	8,433	10,532	35,442
Totals	**1,640,733**	**413,930**	**217,804**	**36,682**	**106,979**	**74,210**	**1,033**	**93,440**	**114,993**	**199,343**

KANSAS

American Lung Association in Kansas

www.lung.org/kansas

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Johnson	0	0	0	0.0	A
Leavenworth	4	0	0	1.3	C
Linn	INC	INC	INC	INC	INC
Neosho	INC	INC	INC	INC	INC
Riley	INC	INC	INC	INC	INC
Sedgwick	8	0	0	2.7	D
Shawnee	1	0	0	0.3	B
Sumner	5	0	0	1.7	C
Trego	0	0	0	0.0	A
Wyandotte	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Johnson	0	0	0	0.0	A	7.7	PASS
Leavenworth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Linn	INC	INC	INC	INC	INC	INC	INC
Neosho	INC	INC	INC	INC	INC	INC	INC
Riley	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sedgwick	1	0	0	0.3	B	9.2	PASS
Shawnee	1	0	0	0.3	B	8.0	PASS
Sumner	1	0	0	0.3	B	7.8	PASS
Trego	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wyandotte	1	0	0	0.3	B	9.2	PASS

KENTUCKY

American Lung Association in Kentucky

www.lung.org/kentucky

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bell	27,337	5,809	4,852	630	2,552	2,718	26	2,784	3,050	11,772
Boone	127,712	34,843	14,808	3,779	11,106	10,927	122	10,493	12,018	10,304
Boyd	48,325	10,186	8,823	1,105	4,517	4,859	46	5,003	5,463	9,440
Bullitt	78,702	17,953	11,116	1,947	7,241	7,392	75	7,275	8,195	7,504
Campbell	92,066	20,046	13,096	2,174	8,588	8,562	88	8,414	9,476	12,805
Carter	27,158	6,102	4,620	662	2,498	2,635	26	2,685	2,952	5,203
Christian	73,309	20,014	8,410	2,171	6,384	5,498	71	5,242	5,985	13,750
Daviess	99,259	24,141	16,079	2,619	8,918	9,312	95	9,442	10,412	14,405
Edmonson	12,007	2,276	2,407	247	1,150	1,253	11	1,308	1,415	2,376
Fayette	314,488	66,246	37,689	7,186	29,741	26,994	300	25,619	29,457	57,637
Greenup	36,068	7,867	7,046	853	3,331	3,676	34	3,843	4,155	5,973
Hancock	8,692	2,186	1,479	237	771	830	8	851	932	1,189
Hardin	106,439	26,333	13,901	2,856	9,563	9,441	102	9,199	10,422	15,424
Henderson	46,407	10,857	7,419	1,178	4,223	4,445	44	4,484	4,966	7,688
Jefferson	763,623	171,811	113,444	18,636	70,483	70,948	727	70,423	78,758	115,246
Jessamine	51,961	12,805	7,098	1,389	4,670	4,648	49	4,565	5,143	9,129
Livingston	9,316	1,920	1,909	208	872	996	9	1,047	1,129	1,404
Madison	87,824	18,551	11,491	2,012	8,284	7,689	84	7,420	8,436	14,873
McCracken	65,018	14,201	12,169	1,540	6,012	6,528	62	6,767	7,355	9,671
Morgan	13,275	2,552	1,954	277	1,279	1,280	13	1,259	1,417	3,577
Oldham	64,875	16,641	7,791	1,805	5,765	5,842	63	5,627	6,441	3,688
Perry	27,565	6,064	4,404	658	2,555	2,682	26	2,696	2,994	7,675
Pike	61,792	13,066	10,260	1,417	5,786	6,128	59	6,192	6,852	15,082
Pulaski	63,782	14,325	11,539	1,554	5,856	6,331	61	6,528	7,122	14,448
Simpson	18,006	4,378	2,864	475	1,619	1,694	17	1,712	1,893	2,820
Trigg	14,233	3,061	3,072	332	1,315	1,519	14	1,618	1,729	2,129
Warren	122,851	27,678	15,030	3,002	11,394	10,379	117	9,920	11,347	20,992
Washington	12,063	2,761	2,102	299	1,102	1,184	12	1,213	1,329	1,992
Totals	**2,474,153**	**564,673**	**356,872**	**61,249**	**227,576**	**226,390**	**2,361**	**223,628**	**250,845**	**398,196**

KENTUCKY

American Lung Association in Kentucky

www.lung.org/kentucky

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bell	0	0	0	0.0	A	0	0	0	0.0	A	8.9	PASS
Boone	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boyd	5	0	0	1.7	C	0	0	0	0.0	A	9.1	PASS
Bullitt	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Campbell	13	0	0	4.3	F	0	0	0	0.0	A	9.5	PASS
Carter	0	0	0	0.0	A	0	0	0	0.0	A	7.6	PASS
Christian	1	0	0	0.3	B	0	0	0	0.0	A	9.7	PASS
Daviess	1	0	0	0.3	B	0	0	0	0.0	A	10.3	PASS
Edmonson	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	4	0	0	1.3	C	0	0	0	0.0	A	9.1	PASS
Greenup	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hardin	1	0	0	0.3	B	0	0	0	0.0	A	9.8	PASS
Henderson	2	0	0	0.7	B	0	0	0	0.0	A	10.3	PASS
Jefferson	6	4	0	4.0	F	2	1	0	1.2	C	11.7	PASS
Jessamine	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.1	PASS
McCracken	1	0	0	0.3	B	0	0	0	0.0	A	INC	INC
Morgan	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oldham	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Pike	0	0	0	0.0	A	3	0	0	1.0	C	8.0	PASS
Pulaski	0	0	0	0.0	A	0	0	0	0.0	A	8.7	PASS
Simpson	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Trigg	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warren	0	0	0	0.0	A	0	0	0	0.0	A	9.1	PASS
Washington	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC

LOUISIANA

American Lung Association in Louisiana

www.lung.org/louisiana

		AT-RISK GROUPS								
				Lung Diseases						
Parish	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Disease	Cardiovascular Diabetes	Poverty	
Ascension Parish	119,455	32,905	12,536	2,879	7,071	6,217	83	8,674	10,209	12,695
Bossier Parish	125,175	31,423	16,527	2,750	7,674	6,838	87	9,879	11,416	17,765
Caddo Parish	251,460	61,152	38,375	5,351	15,547	14,636	174	21,587	24,857	54,405
Calcasieu Parish	198,788	49,384	27,852	4,321	12,205	11,288	139	16,419	19,009	34,103
East Baton Rouge Parish	446,753	101,773	57,272	8,906	28,269	24,506	310	35,101	40,586	80,662
Iberville Parish	33,095	7,047	4,648	617	2,126	1,971	23	2,841	3,307	6,538
Jefferson Parish	436,275	94,962	67,695	8,310	27,857	26,432	304	38,811	44,859	70,484
Lafayette Parish	240,098	57,778	27,678	5,056	14,923	12,910	167	18,189	21,229	39,876
Lafourche Parish	98,325	23,175	13,797	2,028	6,135	5,703	69	8,266	9,598	13,612
Livingston Parish	137,788	36,109	16,505	3,160	8,310	7,428	96	10,560	12,325	18,356
Orleans Parish	389,617	79,432	48,658	6,951	25,384	22,147	270	31,364	36,545	90,849
Ouachita Parish	156,761	39,935	21,430	3,494	9,553	8,692	109	12,628	14,594	34,836
Pointe Coupee Parish	22,251	5,032	4,156	440	1,402	1,439	15	2,180	2,502	4,264
Rapides Parish	132,141	33,075	20,183	2,894	8,087	7,698	92	11,361	13,098	27,768
St. Bernard Parish	45,408	12,355	4,547	1,081	2,703	2,319	32	3,215	3,783	9,179
St. Charles Parish	52,812	13,348	6,346	1,168	3,215	2,989	37	4,226	4,979	6,147
St. James Parish	21,567	5,009	3,347	438	1,349	1,317	15	1,934	2,245	3,902
St. John the Baptist Parish	43,626	10,928	5,681	956	2,666	2,489	30	3,567	4,172	8,829
St. Martin Parish	53,835	13,320	7,326	1,166	3,305	3,098	38	4,472	5,211	9,693
St. Tammany Parish	250,088	60,805	38,533	5,321	15,417	15,091	174	22,189	25,742	31,138
Tangipahoa Parish	128,755	31,859	16,932	2,788	7,924	7,133	90	10,276	11,915	30,092
Terrebonne Parish	113,972	29,354	14,655	2,569	6,910	6,320	80	9,073	10,567	22,587
West Baton Rouge Parish	25,490	6,258	3,120	548	1,570	1,421	18	2,017	2,361	3,754
Totals	**3,523,535**	**836,418**	**477,799**	**73,190**	**219,602**	**200,084**	**2,452**	**288,828**	**335,109**	**631,534**

LOUISIANA

American Lung Association in Louisiana

www.lung.org/louisiana

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
Parish	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ascension Parish	6	1	0	2.5	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bossier Parish	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo Parish	1	0	0	0.3	B	1	0	0	0.3	B	10.3	PASS
Calcasieu Parish	8	1	0	3.2	D	0	0	0	0.0	A	7.2	PASS
East Baton Rouge Parish	21	4	0	9.0	F	1	0	0	0.3	B	8.8	PASS
Iberville Parish	13	0	0	4.3	F	0	0	0	0.0	A	8.7	PASS
Jefferson Parish	7	0	0	2.3	D	0	0	0	0.0	A	7.9	PASS
Lafayette Parish	2	0	0	0.7	B	0	0	0	0.0	A	7.8	PASS
Lafourche Parish	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston Parish	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orleans Parish	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Ouachita Parish	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Pointe Coupee Parish	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rapides Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.4	PASS
St. Bernard Parish	6	0	0	2.0	C	0	0	0	0.0	A	9.0	PASS
St. Charles Parish	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. James Parish	2	1	0	1.2	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. John the Baptist Parish	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Martin Parish	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Tammany Parish	9	1	0	3.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tangipahoa Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.6	PASS
Terrebonne Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.2	PASS
West Baton Rouge Parish	5	0	0	1.7	C	0	0	0	0.0	A	8.9	PASS

MAINE

American Lung Association in Maine

www.lung.org/maine

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Androscoggin	107,233	23,468	17,615	2,271	9,491	6,529	82	7,587	7,883	15,668
Aroostook	68,628	12,778	15,032	1,237	6,197	4,798	52	5,829	5,875	12,342
Cumberland	289,977	56,068	49,183	5,426	26,504	18,210	220	21,155	21,985	30,030
Hancock	54,659	9,551	12,084	924	5,007	3,874	42	4,704	4,742	6,136
Kennebec	119,980	23,627	21,154	2,286	10,873	7,728	91	9,084	9,366	15,229
Knox	39,855	7,333	9,143	710	3,595	2,830	30	3,460	3,471	4,393
Oxford	57,202	11,150	11,363	1,079	5,145	3,883	44	4,666	4,739	9,579
Penobscot	152,692	28,318	26,256	2,740	14,095	9,622	116	11,160	11,609	24,822
Sagadahoc	35,149	6,793	7,136	657	3,165	2,383	27	2,865	2,909	3,915
Washington	31,625	5,998	7,145	580	2,834	2,230	24	2,724	2,735	5,779
York	201,169	39,427	37,449	3,815	18,177	13,211	153	15,665	16,055	16,376
Totals	**1,158,169**	**224,511**	**213,560**	**21,726**	**105,082**	**75,298**	**880**	**88,899**	**91,369**	**144,269**

MAINE

American Lung Association in Maine

www.lung.org/maine

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Androscoggin	0	0	0	0.0	A
Aroostook	0	0	0	0.0	A
Cumberland	7	0	0	2.3	D
Hancock	6	0	0	2.0	C
Kennebec	1	0	0	0.3	B
Knox	6	0	0	2.0	C
Oxford	0	0	0	0.0	A
Penobscot	1	0	0	0.3	B
Sagadahoc	1	0	0	0.3	B
Washington	1	0	0	0.3	B
York	12	0	0	4.0	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Androscoggin	INC	INC	INC	INC	INC	INC	INC
Aroostook	INC	INC	INC	INC	INC	INC	INC
Cumberland	INC	INC	INC	INC	INC	INC	INC
Hancock	INC	INC	INC	INC	INC	INC	INC
Kennebec	INC	INC	INC	INC	INC	INC	INC
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oxford	INC	INC	INC	INC	INC	INC	INC
Penobscot	0	0	0	0.0	A	6.4	PASS
Sagadahoc	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
York	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MARYLAND

American Lung Association in Maryland

www.lung.org/maryland

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Anne Arundel	564,195	126,843	77,478	12,264	38,806	26,664	325	33,851	44,294	32,769
Baltimore	831,128	179,387	133,926	17,344	57,577	40,725	477	54,155	68,882	73,955
Baltimore City	621,849	131,353	77,919	12,700	43,408	28,201	357	34,916	45,727	135,850
Calvert	90,595	21,516	12,259	2,080	6,168	4,414	52	5,556	7,420	5,315
Carroll	167,627	37,047	26,540	3,582	11,612	8,518	97	11,173	14,536	10,235
Cecil	102,382	23,808	14,590	2,302	6,991	4,975	59	6,367	8,371	10,109
Charles	156,118	38,264	17,904	3,700	10,517	7,125	90	8,625	11,679	10,943
Dorchester	32,384	6,896	6,546	667	2,245	1,721	19	2,441	3,020	5,781
Frederick	245,322	58,104	32,623	5,618	16,659	11,593	141	14,594	19,310	17,749
Garrett	29,460	5,704	6,094	552	2,093	1,606	17	2,275	2,818	3,921
Harford	250,290	56,808	37,682	5,493	17,181	12,287	144	15,974	20,770	19,384
Howard	313,414	76,590	39,680	7,405	21,083	14,520	181	18,081	24,056	16,350
Kent	19,787	3,304	5,013	319	1,438	1,136	11	1,716	2,035	2,723
Montgomery	1,040,116	243,491	146,195	23,542	70,668	49,115	598	62,958	82,042	77,657
Prince George's	909,535	204,375	106,712	19,760	62,662	41,217	523	50,108	66,913	83,988
Washington	149,585	33,184	24,253	3,208	10,296	7,382	87	9,831	12,543	16,984
Totals	**5,523,787**	**1,246,674**	**765,414**	**120,537**	**379,403**	**261,199**	**3,178**	**332,622**	**434,417**	**523,713**

MARYLAND

American Lung Association in Maryland

www.lung.org/maryland

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anne Arundel	9	0	0	3.0	D	0	0	0	0.0	A	9.3	PASS
Baltimore	20	0	0	6.7	F	0	0	0	0.0	A	9.8	PASS
Baltimore City	6	0	0	2.0	C	1	0	0	0.3	B	9.6	PASS
Calvert	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cecil	13	1	0	4.8	F	1	0	0	0.3	B	9.4	PASS
Charles	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dorchester	3	0	0	1.0	C	0	0	0	0.0	A	7.9	PASS
Frederick	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Garrett	1	0	0	0.3	B	0	0	0	0.0	A	6.6	PASS
Harford	13	1	0	4.8	F	0	0	0	0.0	A	9.4	PASS
Howard	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Kent	10	0	0	3.3	F	0	0	0	0.0	A	8.8	PASS
Montgomery	6	0	0	2.0	C	0	0	0	0.0	A	8.9	PASS
Prince George's	16	1	0	5.8	F	0	0	0	0.0	A	9.4	PASS
Washington	4	0	0	1.3	C	3	0	0	1.0	C	9.4	PASS

MASSACHUSETTS

American Lung Association in Massachusetts

www.lung.org/massachusetts

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Barnstable	214,333	33,534	61,137	4,053	17,645	12,686	136	19,120	21,136	16,030
Berkshire	127,828	22,400	27,597	2,707	10,567	6,708	81	9,544	10,858	17,453
Bristol	556,772	116,624	89,109	14,095	45,031	25,669	353	34,497	40,355	68,378
Dukes	17,299	3,158	3,617	382	1,419	905	11	1,282	1,469	1,456
Essex	776,043	169,296	123,799	20,461	62,022	35,610	491	47,962	56,131	87,669
Franklin	70,601	12,653	13,439	1,529	5,860	3,595	45	4,986	5,782	8,221
Hampden	470,690	105,014	72,932	12,692	37,479	21,025	298	28,133	32,860	77,818
Hampshire	161,292	24,587	24,700	2,972	14,134	7,399	102	9,645	11,270	21,232
Middlesex	1,585,139	322,638	226,108	38,994	130,333	70,034	1,004	91,480	107,969	116,761
Norfolk	696,023	149,465	111,124	18,065	55,890	31,991	440	43,046	50,370	48,042
Plymouth	510,393	113,432	85,389	13,710	40,386	23,953	323	32,672	38,155	48,231
Suffolk	778,121	133,727	86,473	16,162	67,807	31,251	493	37,909	45,273	144,867
Worcester	818,963	178,270	118,261	21,546	65,911	36,609	519	48,272	57,168	95,500
Totals	**6,783,497**	**1,384,798**	**1,043,685**	**167,368**	**554,483**	**307,435**	**4,295**	**408,549**	**478,798**	**751,658**

MASSACHUSETTS

American Lung Association in Massachusetts

www.lung.org/massachusetts

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Barnstable	8	0	0	2.7	D
Berkshire	INC	INC	INC	INC	INC
Bristol	9	2	0	4.0	F
Dukes	4	0	0	1.3	C
Essex	14	0	0	4.7	F
Franklin	INC	INC	INC	INC	INC
Hampden	7	0	0	2.3	D
Hampshire	6	0	0	2.0	C
Middlesex	3	0	0	1.0	C
Norfolk	7	1	0	2.8	D
Plymouth	INC	INC	INC	INC	INC
Suffolk	6	0	0	2.0	C
Worcester	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Barnstable	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkshire	0	0	0	0.0	A	6.8	PASS
Bristol	0	0	0	0.0	A	6.9	PASS
Dukes	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	0	0	0	0.0	A	6.3	PASS
Franklin	INC	INC	INC	INC	INC	INC	INC
Hampden	0	0	0	0.0	A	7.3	PASS
Hampshire	INC	INC	INC	INC	INC	INC	INC
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Norfolk	INC	INC	INC	INC	INC	INC	INC
Plymouth	0	0	0	0.0	A	INC	INC
Suffolk	0	0	0	0.0	A	7.7	PASS
Worcester	0	0	0	0.0	A	6.9	PASS

MICHIGAN

American Lung Association in Michigan

www.lung.org/michigan

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Allegan	114,625	28,179	17,738	2,183	8,866	6,785	73	8,142	9,463	12,668
Bay	105,659	21,934	19,842	1,699	8,544	6,759	67	8,346	9,546	15,161
Benzie	17,457	3,257	4,301	252	1,431	1,258	11	1,633	1,811	1,810
Berrien	154,636	34,521	28,115	2,674	12,265	9,639	98	11,873	13,603	25,854
Cass	51,657	10,899	10,254	844	4,145	3,399	33	4,247	4,817	7,530
Chippewa	38,033	7,100	6,330	550	3,181	2,316	25	2,775	3,242	6,502
Clinton	77,390	17,667	12,207	1,369	6,127	4,660	49	5,587	6,501	7,632
Genesee	410,849	95,474	65,992	7,396	32,345	24,536	261	29,550	34,316	83,172
Huron	31,883	6,218	7,574	482	2,590	2,254	20	2,911	3,238	3,662
Ingham	286,085	57,692	35,094	4,469	23,751	15,154	182	17,099	20,836	56,310
Kalamazoo	260,263	57,149	36,023	4,427	21,016	14,218	166	16,530	19,732	40,161
Kent	636,369	158,665	79,581	12,291	49,439	34,080	405	39,215	46,957	90,457
Lenawee	98,573	21,365	17,053	1,655	7,903	6,083	63	7,405	8,546	13,388
Macomb	864,840	187,442	137,131	14,521	69,546	52,417	549	62,721	73,101	99,879
Manistee	24,461	4,357	5,816	338	2,031	1,750	16	2,250	2,510	3,465
Mason	28,783	5,963	6,234	462	2,313	1,938	18	2,463	2,768	4,745
Missaukee	14,903	3,400	2,922	263	1,170	958	10	1,199	1,359	2,576
Monroe	149,568	33,218	24,353	2,573	11,919	9,249	95	11,143	12,913	15,717
Muskegon	172,790	40,701	26,801	3,153	13,565	10,150	110	12,149	14,167	26,695
Oakland	1,242,304	270,694	192,577	20,970	99,794	75,210	789	89,638	104,668	114,976
Ottawa	279,955	69,191	37,983	5,360	21,771	15,170	178	17,716	21,041	23,266
Schoolcraft	8,173	1,440	2,031	112	678	606	5	785	870	1,273
St. Clair	159,875	34,557	27,456	2,677	12,812	10,129	102	12,313	14,186	20,195
Tuscola	53,777	11,360	10,174	880	4,323	3,483	34	4,310	4,917	8,200
Washtenaw	358,880	69,537	44,917	5,387	30,063	19,495	228	22,065	26,801	48,525
Wayne	1,759,335	423,146	248,327	32,780	137,680	99,824	1,116	117,427	138,457	430,851
Wexford	33,003	7,725	5,915	598	2,580	2,048	21	2,522	2,888	4,827
Totals	**7,434,126**	**1,682,851**	**1,112,741**	**130,366**	**591,847**	**433,567**	**4,725**	**514,016**	**603,256**	**1,169,497**

MICHIGAN

American Lung Association in Michigan

www.lung.org/michigan

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allegan	17	2	0	6.7	F	0	0	0	0.0	A	8.1	PASS
Bay	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.8	PASS
Benzie	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berrien	14	0	0	4.7	F	0	0	0	0.0	A	8.2	PASS
Cass	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chippewa	0	0	0	0.0	A	0	0	0	0.0	A	6.1	PASS
Clinton	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Genesee	5	0	0	1.7	C	1	0	0	0.3	B	8.2	PASS
Huron	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ingham	1	0	0	0.3	B	0	0	0	0.0	A	8.5	PASS
Kalamazoo	3	0	0	1.0	C	1	0	0	0.3	B	9.0	PASS
Kent	6	0	0	2.0	C	0	1	0	0.5	B	9.4	PASS
Lenawee	4	0	0	1.3	C	0	0	0	0.0	A	8.4	PASS
Macomb	15	0	0	5.0	F	0	1	0	0.5	B	8.9	PASS
Manistee	5	0	0	1.7	C	1	0	0	0.3	B	6.3	PASS
Mason	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Missaukee	2	0	0	0.7	B	0	0	0	0.0	A	5.6	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	INC	INC
Muskegon	17	1	0	6.2	F	INC	INC	INC	INC	INC	INC	INC
Oakland	8	0	0	2.7	D	1	0	0	0.3	B	9.0	PASS
Ottawa	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC
Schoolcraft	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Clair	19	0	0	6.3	F	1	0	0	0.3	B	9.1	PASS
Tuscola	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washtenaw	5	0	0	1.7	C	0	0	0	0.0	A	9.2	PASS
Wayne	9	0	0	3.0	D	4	0	0	1.3	C	11.4	PASS
Wexford	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MINNESOTA

American Lung Association in Minnesota

www.lung.org/minnesota

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Anoka	344,151	83,424	42,705	5,248	19,301	11,354	198	16,473	19,048	24,058
Becker	33,386	8,227	6,532	518	1,834	1,277	19	2,020	2,185	3,728
Beltrami	45,672	11,516	6,826	724	2,541	1,509	26	2,252	2,515	7,081
Carlton	35,569	8,059	5,945	507	2,021	1,304	21	1,991	2,211	3,658
Crow Wing	63,428	13,940	13,464	877	3,604	2,552	36	4,072	4,371	6,500
Dakota	414,686	102,866	52,466	6,471	23,088	13,629	238	19,853	22,860	29,191
Goodhue	46,435	10,438	8,789	657	2,628	1,793	27	2,805	3,063	4,042
Hennepin	1,223,149	271,399	157,112	17,074	70,967	40,122	702	57,856	66,595	130,801
Lake	10,631	1,986	2,655	125	623	476	6	779	823	1,024
Lyon	25,673	6,424	3,787	404	1,428	857	15	1,279	1,435	3,009
Mille Lacs	25,788	6,154	4,744	387	1,437	966	15	1,505	1,644	3,125
Olmsted	151,436	37,346	21,771	2,349	8,453	5,084	87	7,554	8,523	13,255
Ramsey	538,133	125,750	71,450	7,911	30,770	17,476	309	25,385	28,983	78,920
Scott	141,660	40,341	13,602	2,538	7,549	4,150	81	5,802	6,891	7,203
St. Louis	200,431	38,344	35,413	2,412	11,947	7,587	115	11,579	12,809	25,821
Stearns	154,708	35,283	21,287	2,220	8,908	5,096	89	7,441	8,458	19,939
Washington	251,597	62,864	33,651	3,955	13,922	8,474	144	12,499	14,289	12,744
Winona	50,885	9,338	7,888	587	3,102	1,786	29	2,634	2,960	5,953
Wright	131,311	37,511	15,260	2,360	6,963	4,029	76	5,824	6,733	6,629
Totals	**3,888,729**	**911,210**	**525,347**	**57,325**	**221,085**	**129,523**	**2,234**	**189,602**	**216,396**	**386,681**

MINNESOTA

American Lung Association in Minnesota

www.lung.org/minnesota

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Anoka	3	0	0	1.0	C
Becker	0	0	0	0.0	A
Beltrami	DNC	DNC	DNC	DNC	DNC
Carlton	1	0	0	0.3	B
Crow Wing	0	0	0	0.0	A
Dakota	DNC	DNC	DNC	DNC	DNC
Goodhue	0	0	0	0.0	A
Hennepin	0	0	0	0.0	A
Lake	0	0	0	0.0	A
Lyon	4	0	0	1.3	C
Mille Lacs	0	0	0	0.0	A
Olmsted	0	0	0	0.0	A
Ramsey	DNC	DNC	DNC	DNC	DNC
Scott	1	0	0	0.3	B
St. Louis	0	0	0	0.0	A
Stearns	0	0	0	0.0	A
Washington	0	0	0	0.0	A
Winona	DNC	DNC	DNC	DNC	DNC
Wright	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anoka	1	0	0	0.3	B	6.8	PASS
Becker	2	0	0	0.7	B	INC	INC
Beltrami	INC	INC	INC	INC	INC	INC	INC
Carlton	INC	INC	INC	INC	INC	INC	INC
Crow Wing	2	0	0	0.7	B	5.1	PASS
Dakota	0	0	0	0.0	A	7.0	PASS
Goodhue	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hennepin	1	0	0	0.3	B	8.1	PASS
Lake	1	0	0	0.3	B	4.8	PASS
Lyon	1	0	0	0.3	B	6.3	PASS
Mille Lacs	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Olmsted	2	0	0	0.7	B	7.3	PASS
Ramsey	3	0	0	1.0	C	9.3	PASS
Scott	0	0	0	0.0	A	7.8	PASS
St. Louis	1	0	0	0.3	B	7.5	PASS
Stearns	0	1	0	0.5	B	6.1	PASS
Washington	2	0	0	0.7	B	8.4	PASS
Winona	INC	INC	INC	INC	INC	INC	INC
Wright	0	0	0	0.0	A	6.6	PASS

MISSISSIPPI

American Lung Association in Mississippi

www.lung.org/mississippi

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bolivar	33,322	8,403	4,779	747	1,929	1,892	26	2,762	3,604	11,380
DeSoto	173,323	45,833	21,065	4,073	9,912	9,623	135	13,634	18,017	17,169
Forrest	75,944	17,548	9,980	1,560	4,495	4,171	59	5,962	7,867	19,355
Grenada	21,578	5,133	3,658	456	1,278	1,331	17	1,999	2,572	4,539
Hancock	46,420	10,185	8,158	905	2,827	3,005	36	4,513	5,802	9,574
Harrison	201,410	48,920	27,525	4,348	11,829	11,575	157	16,684	21,885	43,019
Hinds	242,891	60,755	30,353	5,400	14,123	13,542	187	19,229	25,403	63,361
Jackson	141,425	34,092	20,634	3,030	8,356	8,445	110	12,307	16,048	22,511
Lauderdale	78,524	18,824	12,320	1,673	4,632	4,689	61	6,938	8,991	16,497
Lee	85,300	21,934	12,457	1,949	4,920	4,933	66	7,227	9,407	14,640
Yalobusha	12,447	2,895	2,301	257	742	789	10	1,204	1,538	2,747
Totals	**1,112,584**	**274,522**	**153,230**	**24,398**	**65,043**	**63,994**	**864**	**92,458**	**121,133**	**224,792**

MISSISSIPPI

American Lung Association in Mississippi

www.lung.org/mississippi

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bolivar	1	0	0	0.3	B
DeSoto	2	0	0	0.7	B
Forrest	DNC	DNC	DNC	DNC	DNC
Grenada	DNC	DNC	DNC	DNC	DNC
Hancock	2	0	0	0.7	B
Harrison	7	0	0	2.3	D
Hinds	0	0	0	0.0	A
Jackson	8	0	0	2.7	D
Lauderdale	0	0	0	0.0	A
Lee	1	0	0	0.3	B
Yalobusha	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bolivar	DNC	DNC	DNC	DNC	DNC	DNC	DNC
DeSoto	1	0	0	0.3	B	9.3	PASS
Forrest	1	0	0	0.3	B	10.0	PASS
Grenada	0	0	0	0.0	A	8.1	PASS
Hancock	0	0	0	0.0	A	8.6	PASS
Harrison	0	0	0	0.0	A	8.8	PASS
Hinds	0	0	0	0.0	A	INC	INC
Jackson	0	0	0	0.0	A	9.2	PASS
Lauderdale	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lee	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Yalobusha	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSOURI

American Lung Association in Missouri

www.lung.org/missouri

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Andrew	17,296	3,984	3,022	345	1,272	1,174	13	1,521	1,633	1,612
Boone	174,974	35,803	18,998	3,096	13,586	10,170	131	11,594	12,960	29,347
Buchanan	89,100	20,210	13,356	1,748	6,634	5,710	67	7,113	7,733	14,578
Callaway	44,834	9,507	6,539	822	3,402	2,924	34	3,617	3,954	5,672
Cass	101,603	25,189	16,118	2,178	7,325	6,577	76	8,377	9,052	9,241
Cedar	13,934	3,246	3,352	281	1,012	1,014	10	1,408	1,458	2,727
Clay	235,637	58,322	30,934	5,044	17,111	14,431	176	17,614	19,358	18,212
Clinton	20,609	4,876	3,628	422	1,503	1,392	16	1,809	1,939	2,094
Greene	288,072	60,311	45,016	5,216	21,990	18,438	216	22,908	24,764	48,993
Jackson	687,623	165,286	95,014	14,295	50,363	42,820	514	52,688	57,659	119,421
Jasper	118,596	30,156	16,783	2,608	8,530	7,230	89	8,946	9,735	18,467
Jefferson	224,124	53,406	30,911	4,619	16,414	14,345	168	17,751	19,493	23,221
Lincoln	54,696	14,267	6,951	1,234	3,893	3,353	41	4,105	4,529	6,089
Monroe	8,583	1,912	1,839	165	633	620	6	838	882	1,182
Perry	19,183	4,604	3,242	398	1,395	1,271	14	1,637	1,759	2,088
St. Charles	385,590	93,004	52,662	8,043	28,177	24,240	289	29,863	32,763	23,775
St. Louis	1,003,362	223,088	169,017	19,294	74,774	67,336	748	86,170	92,819	101,692
St. Louis City	315,685	63,437	36,569	5,486	24,494	19,411	236	22,709	25,343	78,089
Ste. Genevieve	17,919	4,035	3,118	349	1,325	1,237	13	1,603	1,726	1,914
Taney	54,592	11,646	11,028	1,007	4,102	3,801	41	5,033	5,313	8,483
Totals	**3,876,012**	**886,289**	**568,097**	**76,650**	**287,936**	**247,496**	**2,899**	**307,306**	**334,871**	**516,897**

MISSOURI

American Lung Association in Missouri

www.lung.org/missouri

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Andrew	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boone	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buchanan	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	10.5	PASS
Callaway	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cass	0	0	0	0.0	A	1	0	0	0.3	B	9.4	PASS
Cedar	1	0	0	0.3	B	0	0	0	0.0	A	7.9	PASS
Clay	13	0	0	4.3	F	1	0	0	0.3	B	8.6	PASS
Clinton	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Jackson	DNC	DNC	DNC	DNC	DNC	3	0	0	1.0	C	9.1	PASS
Jasper	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	10	0	0	3.3	F	3	0	0	1.0	C	10.6	PASS
Lincoln	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Monroe	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Charles	15	1	0	5.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Louis	11	0	0	3.7	F	3	0	0	1.0	C	10.7	PASS
St. Louis City	2	0	0	0.7	B	7	1	0	2.8	D	11.0	PASS
Ste. Genevieve	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Taney	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MONTANA

American Lung Association in Montana

www.lung.org/montana

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Fergus	11,427	2,337	2,685	148	794	587	7	825	817	1,515
Flathead	96,165	21,452	17,068	1,360	6,633	4,416	56	5,933	6,135	13,270
Lewis and Clark	66,418	14,379	11,234	912	4,630	3,002	38	3,992	4,165	7,903
Lincoln	19,052	3,491	4,903	221	1,360	1,072	11	1,523	1,499	3,817
Missoula	114,181	22,154	16,172	1,404	8,203	4,628	66	5,905	6,350	17,461
Phillips	4,169	965	865	61	282	204	2	283	285	673
Powder River	1,773	302	435	19	129	99	1	139	138	185
Ravalli	41,373	8,214	9,904	521	2,901	2,193	24	3,088	3,060	6,129
Richland	11,960	3,091	1,504	196	796	466	7	594	643	835
Rosebud	9,398	2,763	1,326	175	593	373	5	490	517	1,750
Silver Bow	34,622	7,092	6,107	450	2,442	1,575	20	2,103	2,181	5,614
Yellowstone	157,048	36,826	24,786	2,335	10,690	6,650	91	8,761	9,193	15,995
Totals	**567,586**	**123,066**	**96,989**	**7,802**	**39,452**	**25,264**	**328**	**33,634**	**34,983**	**75,147**

MONTANA

American Lung Association in Montana

www.lung.org/montana

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Fergus	0	0	0	0.0	A
Flathead	0	0	0	0.0	A
Lewis and Clark	0	0	0	0.0	A
Lincoln	DNC	DNC	DNC	DNC	DNC
Missoula	0	0	0	0.0	A
Phillips	0	0	0	0.0	A
Powder River	0	0	0	0.0	A
Ravalli	DNC	DNC	DNC	DNC	DNC
Richland	0	0	0	0.0	A
Rosebud	0	0	0	0.0	A
Silver Bow	DNC	DNC	DNC	DNC	DNC
Yellowstone	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fergus	7	3	0	3.8	F	4.5	PASS
Flathead	9	9	0	7.5	F	9.3	PASS
Lewis and Clark	12	5	0	6.5	F	8.3	PASS
Lincoln	9	12	1	9.7	F	11.7	PASS
Missoula	9	11	0	8.5	F	10.4	PASS
Phillips	5	4	0	3.7	F	4.9	PASS
Powder River	5	1	0	2.2	D	6.2	PASS
Ravalli	17	11	2	12.5	F	9.4	PASS
Richland	4	3	0	2.8	D	7.0	PASS
Rosebud	4	1	0	1.8	C	5.4	PASS
Silver Bow	10	7	0	6.8	F	9.7	PASS
Yellowstone	INC	INC	INC	INC	INC	INC	INC

NEBRASKA

American Lung Association in Nebraska

www.lung.org/nebraska

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Douglas	550,064	142,366	64,743	9,416	29,437	20,470	338	27,534	32,882	77,869
Hall	61,680	16,673	8,902	1,103	3,241	2,456	38	3,402	3,973	8,182
Knox	8,543	2,077	2,039	137	462	438	5	646	720	1,141
Lancaster	306,468	70,379	38,425	4,655	17,054	11,578	189	15,724	18,567	39,383
Sarpy	175,692	49,226	18,645	3,256	9,137	6,234	108	8,293	9,997	10,095
Scotts Bluff	36,261	8,957	6,543	592	1,960	1,615	22	2,296	2,628	5,364
Washington	20,248	4,864	3,361	322	1,105	911	12	1,267	1,482	1,328
Totals	**1,158,956**	**294,542**	**142,658**	**19,480**	**62,396**	**43,703**	**713**	**59,162**	**70,249**	**143,362**

NEBRASKA

American Lung Association in Nebraska

www.lung.org/nebraska

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Douglas	2	0	0	0.7	B
Hall	DNC	DNC	DNC	DNC	DNC
Knox	0	0	0	0.0	A
Lancaster	0	0	0	0.0	A
Sarpy	DNC	DNC	DNC	DNC	DNC
Scotts Bluff	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Douglas	4	0	0	1.3	C	9.1	PASS
Hall	0	0	0	0.0	A	6.8	PASS
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lancaster	1	0	0	0.3	B	7.5	PASS
Sarpy	3	0	0	1.0	C	INC	INC
Scotts Bluff	0	0	0	0.0	A	5.3	PASS
Washington	1	0	0	0.3	B	7.5	PASS

NEVADA

American Lung Association in Nevada

www.lung.org/nevada

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Carson City	54,521	11,140	10,792	651	3,492	3,226	32	3,913	4,779	8,457
Churchill	24,200	5,626	4,425	329	1,492	1,341	14	1,613	1,978	3,115
Clark	2,114,801	498,564	290,001	29,147	130,554	103,810	1,242	121,424	153,343	321,755
Douglas	47,710	8,500	12,234	497	3,145	3,277	28	4,072	4,863	4,459
Elko	51,935	14,459	5,043	845	3,058	2,226	31	2,562	3,328	5,065
Lyon	52,585	11,634	10,816	680	3,293	3,136	31	3,827	4,647	7,180
Washoe	446,903	99,275	67,548	5,804	28,100	23,194	263	27,431	34,367	61,017
White Pine	9,811	2,088	1,511	122	625	518	6	614	769	1,198
Totals	**2,802,466**	**651,286**	**402,370**	**38,075**	**173,759**	**140,729**	**1,647**	**165,456**	**208,074**	**412,246**

NEVADA

American Lung Association in Nevada

www.lung.org/nevada

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Carson City	1	0	0	0.3	B
Churchill	2	0	0	0.7	B
Clark	64	5	0	23.8	F
Douglas	DNC	DNC	DNC	DNC	DNC
Elko	INC	INC	INC	INC	INC
Lyon	6	0	0	2.0	C
Washoe	18	0	0	6.0	F
White Pine	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Carson City	8	10	1	8.3	F	INC	INC
Churchill	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	5	1	0	2.2	D	10.1	PASS
Douglas	13	10	6	13.3	F	INC	INC
Elko	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lyon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washoe	18	7	0	9.5	F	9.6	PASS
White Pine	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NEW HAMPSHIRE

American Lung Association in New Hampshire

www.lung.org/newhampshire

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Belknap	60,641	11,714	12,451	845	4,872	3,532	40	4,079	4,424	5,217
Cheshire	75,909	13,972	13,574	1,008	6,283	4,172	50	4,648	5,073	7,064
Coos	31,212	5,412	7,018	390	2,554	1,910	21	2,236	2,410	4,792
Grafton	89,320	15,033	16,667	1,084	7,546	5,007	59	5,588	6,065	9,245
Hillsborough	406,678	87,109	58,512	6,283	32,660	20,524	267	22,154	24,704	31,984
Merrimack	147,994	28,984	24,880	2,091	12,059	7,973	97	8,834	9,732	11,691
Rockingham	301,777	61,163	47,679	4,412	24,310	16,094	198	17,762	19,803	15,687
Totals	**1,113,531**	**223,387**	**180,781**	**16,113**	**90,285**	**59,212**	**731**	**65,301**	**72,211**	**85,680**

NEW HAMPSHIRE

American Lung Association in New Hampshire

www.lung.org/newhampshire

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Belknap	0	0	0	0.0	A
Cheshire	1	0	0	0.3	B
Coos	7	0	0	2.3	D
Grafton	1	0	0	0.3	B
Hillsborough	4	0	0	1.3	C
Merrimack	2	0	0	0.7	B
Rockingham	9	0	0	3.0	D

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	0	0	0	0.0	A	5.0	PASS
	3	1	0	1.5	C	8.8	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	0	0	0	0.0	A	6.3	PASS
	0	0	0	0.0	A	6.3	PASS
	INC	INC	INC	INC	INC	INC	INC
	0	0	0	0.0	A	8.2	PASS

NEW JERSEY

American Lung Association in New Jersey

www.lung.org/newjersey

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Atlantic	274,219	60,077	44,800	5,175	15,459	10,901	160	15,917	19,885	37,923
Bergen	938,506	201,430	152,403	17,351	53,224	37,421	548	54,597	68,269	65,906
Camden	510,923	118,125	74,538	10,175	28,407	19,173	298	27,507	34,471	65,805
Cumberland	155,854	36,694	21,848	3,161	8,621	5,673	92	8,040	10,063	24,740
Essex	797,434	191,077	100,634	16,459	43,951	28,153	466	39,512	49,773	131,125
Gloucester	291,479	65,857	42,653	5,673	16,321	11,115	170	16,027	20,133	22,086
Hudson	674,836	136,696	73,318	11,775	39,100	22,716	395	30,321	38,252	117,828
Hunterdon	125,488	25,973	20,477	2,237	7,191	5,243	73	7,794	9,827	6,046
Mercer	371,398	80,663	52,076	6,948	21,047	13,868	217	19,699	24,736	39,354
Middlesex	840,900	183,992	115,274	15,849	47,569	31,018	492	43,846	55,073	69,660
Monmouth	628,715	138,218	100,935	11,906	35,431	25,248	368	37,103	46,557	46,641
Morris	499,509	109,736	78,501	9,452	28,166	19,849	292	29,039	36,453	25,917
Ocean	588,721	138,514	130,156	11,931	32,235	25,767	344	39,159	48,012	63,101
Passaic	510,916	124,017	68,264	10,682	28,014	18,301	299	25,890	32,510	86,457
Union	555,786	131,997	73,670	11,370	30,698	20,137	325	28,577	35,981	58,384
Warren	106,869	22,141	17,629	1,907	6,119	4,382	62	6,452	8,093	8,040
Totals	**7,871,553**	**1,765,207**	**1,167,176**	**152,050**	**441,554**	**298,964**	**4,602**	**429,480**	**538,088**	**869,013**

NEW JERSEY

American Lung Association in New Jersey

www.lung.org/newjersey

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Atlantic	4	1	0	1.8	C
Bergen	22	0	0	7.3	F
Camden	18	1	0	6.5	F
Cumberland	3	0	0	1.0	C
Essex	10	0	0	3.3	F
Gloucester	12	0	0	4.0	F
Hudson	21	2	0	8.0	F
Hunterdon	10	0	0	3.3	F
Mercer	19	0	0	6.3	F
Middlesex	13	1	0	4.8	F
Monmouth	9	2	0	4.0	F
Morris	10	0	0	3.3	F
Ocean	15	1	0	5.5	F
Passaic	9	0	0	3.0	D
Union	DNC	DNC	DNC	DNC	DNC
Warren	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Atlantic	0	0	0	0.0	A	8.1	PASS
Bergen	0	0	0	0.0	A	9.1	PASS
Camden	1	0	0	0.3	B	10.4	PASS
Cumberland	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	2	0	0	0.7	B	8.9	PASS
Gloucester	0	0	0	0.0	A	8.9	PASS
Hudson	1	0	0	0.3	B	10.8	PASS
Hunterdon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	0	0	0	0.0	A	8.6	PASS
Middlesex	0	0	0	0.0	A	8.0	PASS
Monmouth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Morris	0	0	0	0.0	A	7.1	PASS
Ocean	1	0	0	0.3	B	7.7	PASS
Passaic	0	0	0	0.0	A	8.9	PASS
Union	5	0	0	1.7	C	10.4	PASS
Warren	0	0	0	0.0	A	8.3	PASS

NEW MEXICO

American Lung Association in New Mexico

www.lung.org/newmexico

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bernalillo	676,685	153,390	99,360	13,882	51,620	30,839	271	40,308	58,573	126,614
Doña Ana	214,295	54,119	31,444	4,898	15,811	9,174	86	12,034	17,463	53,968
Eddy	57,578	15,216	8,022	1,377	4,178	2,504	23	3,272	4,755	7,015
Grant	28,609	5,929	7,226	537	2,238	1,607	11	2,263	3,077	5,753
Lea	71,180	21,611	7,399	1,956	4,891	2,679	29	3,388	5,077	9,875
Luna	24,518	6,385	5,121	578	1,790	1,200	10	1,661	2,296	7,395
Rio Arriba	39,465	9,489	6,793	859	2,956	1,926	16	2,581	3,662	9,486
San Juan	118,737	31,403	16,654	2,842	8,614	5,179	48	6,774	9,836	22,047
Sandoval	139,394	33,821	22,113	3,061	10,410	6,576	56	8,716	12,494	15,572
Santa Fe	148,686	28,477	31,050	2,577	11,852	8,108	59	11,065	15,447	19,165
Valencia	75,737	18,383	12,106	1,664	5,655	3,590	30	4,764	6,821	14,643
Totals	**1,594,884**	**378,223**	**247,288**	**34,231**	**120,014**	**73,384**	**639**	**96,827**	**139,501**	**291,533**

NEW MEXICO

American Lung Association in New Mexico

www.lung.org/newmexico

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bernalillo	7	0	0	2.3	D
Doña Ana	47	1	0	16.2	F
Eddy	6	0	0	2.0	C
Grant	INC	INC	INC	INC	INC
Lea	3	0	0	1.0	C
Luna	INC	INC	INC	INC	INC
Rio Arriba	2	0	0	0.7	B
San Juan	6	0	0	2.0	C
Sandoval	0	0	0	0.0	A
Santa Fe	0	0	0	0.0	A
Valencia	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	1	0	0	0.3	B	7.5	PASS
	0	1	0	0.5	B	5.6	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	1	1	0	0.8	B	7.8	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	0	0	0	0.0	A	4.1	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	INC	INC	INC	INC	INC	INC	INC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NEW YORK

American Lung Association in New York

www.lung.org/newyork

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Albany	309,381	58,304	48,270	5,820	25,045	14,222	187	18,365	24,127	36,827
Bronx	1,455,444	368,977	166,281	36,829	108,973	56,592	878	71,058	95,629	430,291
Chautauqua	130,779	26,957	24,195	2,691	10,265	6,506	79	8,608	11,130	21,630
Dutchess	295,754	58,429	47,326	5,832	23,510	14,221	179	18,470	24,379	28,978
Erie	922,578	189,903	154,748	18,955	72,679	43,998	558	57,512	75,126	139,581
Essex	38,478	6,501	8,240	649	3,148	2,108	23	2,824	3,617	4,418
Franklin	50,660	10,048	7,766	1,003	4,038	2,354	31	3,040	4,017	8,234
Hamilton	4,712	684	1,305	68	391	302	3	416	523	523
Herkimer	63,100	13,267	12,133	1,324	4,915	3,204	38	4,262	5,493	7,806
Jefferson	117,635	28,751	14,843	2,870	8,938	4,605	72	5,833	7,723	15,718
Kings	2,636,735	612,433	325,578	61,129	203,249	105,485	1,591	133,122	177,651	581,684
Monroe	749,600	159,513	119,145	15,922	58,648	34,647	453	45,035	59,058	107,747
New York	1,644,518	240,380	240,185	23,993	141,186	73,158	992	92,935	122,646	280,715
Niagara	212,652	43,176	37,547	4,310	16,742	10,569	129	13,900	18,134	32,421
Onondaga	468,463	101,865	73,407	10,168	36,408	21,602	283	28,054	36,875	66,114
Orange	377,647	97,462	48,796	9,728	27,867	15,918	229	20,341	27,220	44,395
Oswego	120,146	25,897	17,842	2,585	9,349	5,539	73	7,150	9,490	19,996
Putnam	99,042	20,747	15,070	2,071	7,722	4,803	60	6,219	8,298	5,897
Queens	2,339,150	476,985	323,755	47,610	185,952	102,666	1,415	130,999	174,342	320,712
Richmond	474,558	104,847	71,216	10,465	36,723	21,600	287	27,926	36,907	66,586
Rockland	326,037	90,294	49,160	9,013	23,402	14,047	197	18,331	23,965	44,933
Saratoga	226,249	47,460	36,846	4,737	17,692	10,863	137	14,164	18,634	14,149
Steuben	97,631	21,597	17,601	2,156	7,504	4,813	59	6,364	8,257	14,745
Suffolk	1,501,587	329,288	234,551	32,867	116,081	70,497	910	91,598	120,920	114,849
Tompkins	104,926	15,703	13,350	1,567	9,018	4,342	64	5,415	7,221	18,480
Wayne	91,446	20,039	15,562	2,000	7,042	4,489	55	5,894	7,727	11,008
Westchester	976,396	221,464	154,130	22,105	74,826	45,276	591	58,954	77,491	96,580
Totals	**15,835,304**	**3,390,971**	**2,278,848**	**338,465**	**1,241,312**	**698,426**	**9,575**	**896,789**	**1,186,604**	**2,535,017**

NEW YORK

American Lung Association in New York

www.lung.org/newyork

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Albany	0	0	0	0.0	A
Bronx	14	0	0	4.7	F
Chautauqua	8	0	0	2.7	D
Dutchess	3	0	0	1.0	C
Erie	9	0	0	3.0	D
Essex	1	0	0	0.3	B
Franklin	4	0	0	1.3	C
Hamilton	0	0	0	0.0	A
Herkimer	0	0	0	0.0	A
Jefferson	1	0	0	0.3	B
Kings	DNC	DNC	DNC	DNC	DNC
Monroe	0	0	0	0.0	A
New York	8	0	0	2.7	D
Niagara	2	0	0	0.7	B
Onondaga	0	0	0	0.0	A
Orange	4	0	0	1.3	C
Oswego	1	0	0	0.3	B
Putnam	3	0	0	1.0	C
Queens	11	0	0	3.7	F
Richmond	18	2	0	7.0	F
Rockland	8	0	0	2.7	D
Saratoga	1	0	0	0.3	B
Steuben	0	0	0	0.0	A
Suffolk	22	2	0	8.3	F
Tompkins	0	0	0	0.0	A
Wayne	1	0	0	0.3	B
Westchester	18	1	0	6.5	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	0	0	0	0.0	A	7.4	PASS
Bronx	0	0	0	0.0	A	9.4	PASS
Chautauqua	0	0	0	0.0	A	INC	INC
Dutchess	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	0	0	0	0.0	A	8.6	PASS
Essex	0	0	0	0.0	A	4.1	PASS
Franklin	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Herkimer	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kings	0	0	0	0.0	A	9.1	PASS
Monroe	0	0	0	0.0	A	7.2	PASS
New York	0	0	0	0.0	A	11.0	PASS
Niagara	INC	INC	INC	INC	INC	INC	INC
Onondaga	0	0	0	0.0	A	6.4	PASS
Orange	0	0	0	0.0	A	7.2	PASS
Oswego	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Putnam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Queens	0	0	0	0.0	A	8.1	PASS
Richmond	0	0	0	0.0	A	INC	INC
Rockland	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Saratoga	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Steuben	0	0	0	0.0	A	5.7	PASS
Suffolk	0	0	0	0.0	A	7.5	PASS
Tompkins	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Westchester	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH CAROLINA

American Lung Association in North Carolina

www.lung.org/northcarolina

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Alamance	158,276	36,006	25,967	4,138	10,049	9,404	111	11,839	13,568	29,039
Alexander	37,325	7,735	7,268	889	2,439	2,402	27	3,142	3,539	5,555
Avery	17,689	2,743	3,691	315	1,229	1,186	13	1,554	1,741	2,997
Buncombe	253,178	48,656	47,089	5,591	16,815	15,971	178	20,538	23,256	37,433
Caldwell	81,287	17,004	14,831	1,954	5,301	5,202	57	6,696	7,622	12,963
Carteret	68,879	12,577	15,542	1,445	4,653	4,789	49	6,461	7,177	9,370
Caswell	22,941	4,390	4,658	504	1,532	1,542	16	2,029	2,285	4,353
Catawba	155,056	35,211	25,759	4,046	9,865	9,408	109	11,889	13,637	23,050
Chatham	70,928	14,114	17,716	1,622	4,698	4,963	50	6,923	7,548	8,111
Cumberland	323,838	82,868	36,625	9,523	19,664	16,254	228	18,698	22,260	59,320
Davidson	164,622	36,952	28,400	4,246	10,520	10,193	116	12,997	14,858	22,977
Davie	41,753	9,023	8,180	1,037	2,703	2,725	29	3,581	4,037	5,080
Duplin	59,159	14,471	9,762	1,663	3,676	3,487	42	4,424	5,056	14,603
Durham	300,952	65,360	34,465	7,511	19,232	15,910	211	18,150	21,740	49,310
Edgecombe	54,150	12,476	9,504	1,434	3,433	3,321	38	4,262	4,849	14,742
Forsyth	369,019	87,172	54,419	10,017	23,139	21,137	258	25,965	30,134	64,966
Franklin	63,710	14,466	9,945	1,662	4,054	3,839	45	4,777	5,532	9,909
Gaston	213,442	48,942	32,838	5,624	13,524	12,603	150	15,625	18,086	36,243
Graham	8,616	1,836	1,961	211	560	575	6	786	864	1,783
Granville	58,674	12,289	9,341	1,412	3,820	3,628	42	4,512	5,230	8,786
Guilford	517,600	117,471	73,066	13,499	32,807	29,322	362	35,488	41,440	78,783
Haywood	59,868	11,001	14,384	1,264	4,038	4,188	42	5,752	6,320	10,436
Jackson	41,265	7,064	7,473	812	2,801	2,531	29	3,206	3,634	7,879
Johnston	185,660	48,767	23,545	5,604	11,240	10,152	131	12,131	14,323	23,887
Lee	59,660	14,874	9,190	1,709	3,680	3,419	42	4,267	4,914	10,044
Lenoir	58,106	13,143	10,623	1,510	3,706	3,626	41	4,695	5,319	13,069
Lincoln	81,035	17,661	13,178	2,030	5,223	5,027	57	6,304	7,283	10,774
Macon	34,201	6,475	9,163	744	2,293	2,453	24	3,478	3,757	5,719
Martin	23,357	4,761	5,018	547	1,537	1,577	16	2,114	2,357	5,213
McDowell	44,989	9,263	8,484	1,064	2,945	2,888	32	3,744	4,240	8,183
Mecklenburg	1,034,070	251,972	106,570	28,956	63,888	52,936	726	59,508	72,056	145,693
Mitchell	15,246	2,815	3,644	323	1,028	1,073	11	1,471	1,620	2,516
Montgomery	27,548	6,329	5,233	727	1,748	1,717	19	2,249	2,529	5,296
New Hanover	220,358	42,336	35,679	4,865	14,586	13,082	155	16,201	18,628	36,967
Person	39,259	8,509	7,046	978	2,536	2,486	28	3,195	3,640	6,317
Pitt	175,842	38,695	20,590	4,447	11,183	9,139	123	10,466	12,467	43,954

NORTH CAROLINA (cont.)

American Lung Association in North Carolina

www.lung.org/northcarolina

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Robeson	134,197	34,605	18,170	3,977	8,167	7,318	94	8,857	10,348	39,785
Rockingham	91,758	19,184	17,184	2,205	5,989	5,938	64	7,694	8,733	16,699
Rowan	139,142	31,310	23,306	3,598	8,871	8,407	98	10,636	12,177	23,342
Swain	14,434	3,222	2,727	370	922	889	10	1,160	1,304	2,295
Union	222,742	62,453	25,941	7,177	13,169	11,899	157	14,033	16,727	21,397
Wake	1,024,198	253,184	105,510	29,095	63,063	53,124	721	59,937	72,654	111,299
Watauga	52,906	6,990	7,728	803	3,739	3,045	37	3,581	4,183	11,956
Wayne	124,132	29,833	18,567	3,428	7,740	7,069	88	8,725	10,092	22,267
Yancey	17,587	3,332	4,208	383	1,178	1,225	12	1,683	1,849	3,359
Totals	**6,962,654**	**1,609,540**	**974,188**	**184,962**	**438,984**	**393,069**	**4,893**	**475,422**	**555,616**	**1,087,719**

NORTH CAROLINA

American Lung Association in North Carolina

www.lung.org/northcarolina

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alamance	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	INC	INC
Alexander	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Avery	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buncombe	0	0	0	0.0	A	0	0	0	0.0	A	7.7	PASS
Caldwell	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carteret	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caswell	1	0	0	0.3	B	0	0	0	0.0	A	8.8	PASS
Catawba	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.9	PASS
Chatham	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Cumberland	1	0	0	0.3	B	0	0	0	0.0	A	8.5	PASS
Davidson	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.2	PASS
Davie	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duplin	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.3	PASS
Durham	0	0	0	0.0	A	0	0	0	0.0	A	8.3	PASS
Edgecombe	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Forsyth	5	0	0	1.7	C	0	0	0	0.0	A	8.5	PASS
Franklin	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gaston	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	INC	INC
Graham	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Granville	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Guilford	2	0	0	0.7	B	0	0	0	0.0	A	8.4	PASS
Haywood	2	0	0	0.7	B	0	0	0	0.0	A	8.2	PASS
Jackson	2	0	0	0.7	B	0	0	0	0.0	A	7.3	PASS
Johnston	0	0	0	0.0	A	0	0	0	0.0	A	7.3	PASS
Lee	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Lenoir	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Lincoln	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Macon	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	0	0	0	0.0	A	0	0	0	0.0	A	6.9	PASS
McDowell	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.4	PASS
Mecklenburg	13	0	0	4.3	F	0	0	0	0.0	A	9.0	PASS
Mitchell	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	INC	INC
Montgomery	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
New Hanover	0	0	0	0.0	A	0	0	0	0.0	A	6.5	PASS
Person	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pitt	0	0	0	0.0	A	0	0	0	0.0	A	7.3	PASS

NORTH CAROLINA (cont.)

American Lung Association in North Carolina

www.lung.org/northcarolina

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Robeson	DNC	DNC	DNC	DNC	DNC
Rockingham	3	0	0	1.0	C
Rowan	2	0	0	0.7	B
Swain	0	0	0	0.0	A
Union	3	0	0	1.0	C
Wake	1	0	0	0.3	B
Watauga	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC
Yancey	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Robeson	INC	INC	INC	INC	INC	INC	INC
Rockingham	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rowan	0	0	0	0.0	A	8.7	PASS
Swain	0	0	0	0.0	A	7.6	PASS
Union	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wake	2	0	0	0.7	B	10.7	PASS
Watauga	0	1	0	0.5	B	6.7	PASS
Wayne	0	0	0	0.0	A	INC	INC
Yancey	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH DAKOTA

American Lung Association in North Dakota

www.lung.org/northdakota

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Billings	936	173	163	11	69	42	1	62	72	66
Burke	2,308	562	401	37	159	98	1	149	169	192
Burleigh	92,991	21,222	13,612	1,381	6,465	3,702	54	5,307	6,195	8,048
Cass	171,512	38,045	18,870	2,475	11,893	6,161	99	7,969	9,723	17,733
Dunn	4,646	1,076	636	70	323	184	3	264	311	452
McKenzie	12,826	3,854	942	251	802	400	7	505	638	1,061
Mercer	8,853	2,011	1,502	131	624	383	5	588	672	630
Oliver	1,846	435	356	28	129	84	1	134	150	187
Williams	35,294	9,399	3,013	612	2,311	1,163	21	1,474	1,843	2,713
Totals	**331,212**	**76,777**	**39,495**	**4,995**	**22,774**	**12,215**	**192**	**16,451**	**19,775**	**31,082**

NORTH DAKOTA

American Lung Association in North Dakota

www.lung.org/northdakota

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Billings	0	0	0	0.0	A
Burke	0	0	0	0.0	A
Burleigh	0	0	0	0.0	A
Cass	0	0	0	0.0	A
Dunn	1	0	0	0.3	B
McKenzie	0	0	0	0.0	A
Mercer	0	0	0	0.0	A
Oliver	1	0	0	0.3	B
Williams	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Billings	3	1	0	1.5	C	4.9	PASS
Burke	5	4	0	3.7	F	5.5	PASS
Burleigh	6	1	0	2.5	D	5.3	PASS
Cass	4	0	0	1.3	C	6.4	PASS
Dunn	10	1	0	3.8	F	5.1	PASS
McKenzie	4	2	0	2.3	D	3.4	PASS
Mercer	5	2	0	2.7	D	5.5	PASS
Oliver	6	1	0	2.5	D	4.9	PASS
Williams	7	2	0	3.3	F	6.9	PASS

OHIO

American Lung Association in Ohio

www.lung.org/ohio

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Allen	104,425	24,346	17,055	1,753	8,035	6,376	72	7,507	8,857	15,229
Ashtabula	98,632	22,120	17,501	1,592	7,671	6,382	68	7,634	9,028	17,636
Athens	65,886	9,882	7,559	711	5,658	3,636	45	3,860	4,586	17,573
Belmont	69,154	13,189	13,339	949	5,601	4,681	48	5,645	6,629	9,524
Butler	376,353	90,328	51,037	6,503	28,834	21,736	259	24,687	29,593	52,356
Clark	135,959	30,897	24,918	2,224	10,513	8,720	93	10,504	12,315	20,019
Clermont	201,973	48,113	29,391	3,464	15,505	12,247	139	14,130	16,999	19,052
Clinton	41,917	9,921	6,529	714	3,217	2,554	29	2,983	3,551	5,513
Cuyahoga	1,255,921	268,170	210,832	19,306	99,147	79,368	861	93,526	110,646	224,256
Delaware	193,013	52,718	23,146	3,795	14,185	10,754	133	12,061	14,687	8,353
Fayette	28,679	6,849	4,866	493	2,189	1,783	20	2,121	2,502	4,575
Franklin	1,251,722	295,725	138,531	21,290	96,685	67,131	861	72,955	88,119	208,972
Geauga	94,102	22,331	17,501	1,608	7,188	6,237	65	7,563	8,957	6,298
Greene	164,427	34,044	26,323	2,451	13,098	10,146	113	11,809	13,961	19,772
Hamilton	807,598	187,937	116,074	13,530	62,391	47,619	554	54,606	65,154	130,935
Jefferson	67,347	13,199	13,329	950	5,414	4,584	46	5,566	6,523	11,547
Knox	61,061	14,158	10,223	1,019	4,704	3,770	42	4,461	5,257	8,510
Lake	229,245	47,536	42,296	3,422	18,209	15,263	158	18,324	21,649	18,884
Lawrence	61,109	13,547	10,753	975	4,767	3,907	42	4,660	5,495	12,680
Licking	170,570	40,213	26,543	2,895	13,109	10,454	117	12,208	14,558	20,933
Lorain	305,147	68,903	51,233	4,960	23,715	19,284	210	22,810	27,050	39,833
Lucas	433,689	100,612	65,018	7,243	33,505	25,953	298	30,017	35,721	82,814
Madison	44,094	9,215	6,244	663	3,518	2,685	31	3,055	3,676	3,614
Mahoning	231,900	47,425	45,088	3,414	18,446	15,530	159	18,829	22,053	37,640
Medina	176,395	40,862	28,428	2,942	13,627	11,121	122	13,076	15,628	12,287
Miami	104,224	24,089	18,432	1,734	8,029	6,632	72	7,939	9,354	10,992
Montgomery	532,258	119,127	90,442	8,576	41,422	33,149	365	39,253	46,195	91,879
Noble	14,326	2,646	3,478	190	1,162	1,086	10	1,372	1,597	1,741
Portage	162,275	31,122	24,393	2,241	13,204	9,990	112	11,433	13,617	20,927
Preble	41,329	9,520	7,350	685	3,187	2,653	28	3,180	3,754	5,160
Scioto	76,825	16,922	13,094	1,218	6,006	4,801	53	5,683	6,687	16,881
Stark	375,165	81,870	67,972	5,894	29,375	24,258	258	29,084	34,211	48,889
Summit	541,968	116,666	89,731	8,399	42,718	34,297	372	40,333	47,877	76,554
Trumbull	203,751	42,580	40,561	3,065	16,103	13,752	140	16,777	19,626	35,069
Warren	224,469	57,543	30,240	4,143	16,843	13,101	155	14,960	18,078	11,375
Washington	61,112	12,223	12,007	880	4,888	4,128	42	5,010	5,868	8,906
Wood	129,730	26,801	18,693	1,929	10,356	7,572	89	8,603	10,167	14,385
Totals	**9,137,750**	**2,053,349**	**1,420,150**	**147,824**	**712,220**	**557,341**	**6,285**	**648,226**	**770,225**	**1,351,563**

OHIO

American Lung Association in Ohio

www.lung.org/ohio

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	4	0	0	1.3	C	0	0	0	0.0	A	INC	INC
Ashtabula	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Athens	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.8	PASS
Belmont	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Butler	11	0	0	3.7	F	0	0	0	0.0	A	10.9	PASS
Clark	11	0	0	3.7	F	0	0	0	0.0	A	9.7	PASS
Clermont	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cuyahoga	9	1	0	3.5	F	3	0	0	1.0	C	12.4	FAIL
Delaware	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Franklin	16	0	0	5.3	F	0	0	0	0.0	A	10.1	PASS
Geauga	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	6	0	0	2.0	C	0	0	0	0.0	A	9.3	PASS
Hamilton	16	1	0	5.8	F	1	0	0	0.3	B	11.2	PASS
Jefferson	3	0	0	1.0	C	4	0	0	1.3	C	10.8	PASS
Knox	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	16	0	0	5.3	F	0	0	0	0.0	A	8.5	PASS
Lawrence	4	0	0	1.3	C	0	0	0	0.0	A	8.0	PASS
Licking	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lorain	0	0	0	0.0	A	0	0	0	0.0	A	8.7	PASS
Lucas	5	0	0	1.7	C	1	0	0	0.3	B	10.1	PASS
Madison	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mahoning	1	0	0	0.3	B	0	0	0	0.0	A	10.6	PASS
Medina	1	0	0	0.3	B	0	0	0	0.0	A	9.3	PASS
Miami	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	5	0	0	1.7	C	1	0	0	0.3	B	INC	INC
Noble	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Portage	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Preble	2	0	0	0.7	B	0	0	0	0.0	A	9.1	PASS
Scioto	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.6	PASS
Stark	11	0	0	3.7	F	1	0	0	0.3	B	11.6	PASS
Summit	0	0	0	0.0	A	1	0	0	0.3	B	11.2	PASS
Trumbull	5	0	0	1.7	C	0	0	0	0.0	A	INC	INC
Warren	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC

OKLAHOMA

American Lung Association in Oklahoma

www.lung.org/oklahoma

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Adair	22,004	5,835	3,271	594	1,556	1,443	15	1,787	1,962	6,197
Bryan	44,884	10,515	7,768	1,070	3,274	3,053	31	3,842	4,138	7,924
Caddo	29,343	7,495	4,653	762	2,096	1,958	21	2,446	2,664	5,828
Canadian	133,378	35,367	16,305	3,598	9,419	8,213	94	9,750	10,969	12,844
Cherokee	48,447	11,088	7,479	1,128	3,559	3,184	34	3,896	4,265	10,023
Cleveland	274,458	60,824	33,816	6,188	20,371	17,047	193	19,823	22,387	30,190
Comanche	124,648	30,129	14,223	3,065	9,013	7,439	88	8,556	9,727	17,201
Cotton	5,996	1,418	1,115	144	441	435	4	561	602	995
Creek	70,892	17,030	12,230	1,732	5,181	4,988	50	6,332	6,850	10,927
Dewey	4,995	1,336	952	136	350	349	3	455	482	640
Jefferson	6,276	1,506	1,247	153	458	461	4	603	640	1,216
Johnston	10,980	2,552	2,029	260	807	784	8	1,004	1,076	2,276
Kay	45,366	11,477	8,310	1,168	3,238	3,140	32	4,034	4,306	8,261
Lincoln	35,042	8,681	6,031	883	2,542	2,473	25	3,151	3,409	5,097
Love	9,870	2,477	1,834	252	706	688	7	887	945	1,213
Mayes	40,887	9,954	7,040	1,013	2,976	2,867	29	3,641	3,938	7,471
McClain	38,066	9,807	5,679	998	2,723	2,530	27	3,133	3,445	4,040
Oklahoma	776,864	199,953	98,327	20,341	55,262	47,978	544	57,019	63,883	123,515
Ottawa	31,981	7,992	5,750	813	2,289	2,193	22	2,800	2,996	7,103
Pittsburg	44,610	10,011	8,213	1,018	3,313	3,195	31	4,082	4,381	7,163
Pottawatomie	71,875	17,434	11,470	1,774	5,213	4,824	50	6,002	6,541	11,672
Sequoyah	41,153	9,726	7,162	989	3,021	2,905	29	3,689	3,987	9,934
Tulsa	639,242	163,049	84,306	16,587	45,693	40,342	447	48,432	54,032	99,650
Totals	**2,551,257**	**635,656**	**349,210**	**64,665**	**183,501**	**162,489**	**1,789**	**195,925**	**217,626**	**391,380**

OKLAHOMA

American Lung Association in Oklahoma

www.lung.org/oklahoma

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adair	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bryan	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canadian	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cherokee	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cleveland	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
Comanche	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC
Cotton	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Creek	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dewey	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
Jefferson	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnston	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kay	5	0	0	1.7	C	3	0	0	1.0	C	INC	INC
Lincoln	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Love	INC	INC	INC	INC	INC	1	1	0	0.8	B	INC	INC
Mayes	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McClain	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oklahoma	15	0	0	5.0	F	0	0	0	0.0	A	8.6	PASS
Ottawa	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pittsburg	5	0	0	1.7	C	2	0	0	0.7	B	8.8	PASS
Pottawatomie	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sequoyah	1	0	0	0.3	B	0	0	0	0.0	A	8.9	PASS
Tulsa	12	0	0	4.0	F	0	0	0	0.0	A	8.8	PASS

OREGON

American Lung Association in Oregon

www.lung.org/oregon

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Clackamas	401,515	88,343	67,006	8,291	35,479	18,252	226	25,041	34,780	37,507
Columbia	49,600	10,906	8,810	1,023	4,368	2,336	28	3,237	4,469	6,595
Crook	21,630	4,183	5,347	393	1,935	1,143	12	1,719	2,217	3,423
Deschutes	175,268	36,927	33,117	3,465	15,586	8,234	99	11,673	15,765	23,298
Harney	7,200	1,476	1,642	139	638	366	4	541	708	1,147
Jackson	212,567	44,332	44,244	4,160	18,855	10,252	119	14,926	19,715	40,427
Josephine	84,745	16,554	21,343	1,554	7,553	4,474	48	6,783	8,687	18,268
Klamath	66,016	14,286	13,086	1,341	5,811	3,122	37	4,495	5,994	12,966
Lake	7,829	1,456	1,844	137	709	412	4	609	798	1,374
Lane	362,895	68,799	64,973	6,456	33,296	16,555	204	23,240	31,518	69,999
Marion	330,700	83,148	48,905	7,803	28,173	13,540	186	18,453	25,643	53,817
Multnomah	790,294	154,609	96,666	14,509	73,114	31,912	444	41,027	59,635	121,528
Umatilla	76,531	19,800	11,009	1,858	6,461	3,107	43	4,207	5,881	13,860
Washington	574,326	137,564	70,107	12,910	50,119	22,712	323	29,388	42,614	59,471
Totals	**3,161,116**	**682,383**	**488,099**	**64,038**	**282,096**	**136,418**	**1,778**	**185,339**	**258,424**	**463,680**

OREGON

American Lung Association in Oregon

www.lung.org/oregon

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Clackamas	3	0	0	1.0	C
Columbia	0	0	0	0.0	A
Crook	DNC	DNC	DNC	DNC	DNC
Deschutes	1	0	0	0.3	B
Harney	DNC	DNC	DNC	DNC	DNC
Jackson	1	1	0	0.8	B
Josephine	DNC	DNC	DNC	DNC	DNC
Klamath	DNC	DNC	DNC	DNC	DNC
Lake	DNC	DNC	DNC	DNC	DNC
Lane	4	0	0	1.3	C
Marion	2	0	0	0.7	B
Multnomah	1	0	0	0.3	B
Umatilla	3	0	0	1.0	C
Washington	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	8	3	0	4.2	F	9.9	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	7	1	0	2.8	D	9.1	PASS
	11	3	1	5.8	F	11.8	PASS
	2	1	0	1.2	C	9.2	PASS
	10	3	0	4.8	F	10.3	PASS
	13	9	0	8.8	F	10.6	PASS
	14	1	0	5.2	F	9.6	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	3	1	0	1.5	C	7.4	PASS
	5	2	0	2.7	D	INC	INC
	6	1	0	2.5	D	8.0	PASS

PENNSYLVANIA

American Lung Association in Pennsylvania

www.lung.org/pennsylvania

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Adams	102,295	21,070	19,261	2,355	8,250	5,971	67	8,193	8,914	8,365
Allegheny	1,230,459	233,675	217,210	26,121	102,088	69,398	807	93,646	102,520	145,454
Armstrong	67,052	13,037	13,867	1,457	5,448	4,137	44	5,751	6,223	8,334
Beaver	168,871	33,153	33,941	3,706	13,729	10,208	111	14,116	15,302	21,668
Berks	415,271	94,450	67,198	10,558	32,891	22,274	273	29,968	32,895	50,814
Blair	125,593	25,939	24,852	2,900	10,102	7,381	82	10,174	11,031	18,616
Bradford	61,281	13,427	12,190	1,501	4,832	3,639	40	5,048	5,465	7,881
Bucks	627,367	132,377	107,816	14,798	50,440	35,909	412	48,892	53,504	39,001
Cambria	136,411	26,377	28,534	2,949	11,114	8,324	90	11,550	12,488	19,450
Centre	160,580	24,411	20,365	2,729	14,328	7,762	107	9,715	10,961	22,716
Chester	515,939	120,162	77,227	13,432	40,664	27,246	339	36,441	40,187	30,147
Clearfield	80,994	14,976	15,660	1,674	6,708	4,835	54	6,630	7,213	12,487
Cumberland	246,338	50,023	42,941	5,592	20,103	13,677	162	18,463	20,208	17,149
Dauphin	272,983	61,299	42,684	6,852	21,743	14,543	179	19,477	21,436	36,332
Delaware	563,894	125,524	86,401	14,032	45,114	29,719	369	39,628	43,687	56,493
Elk	30,872	6,030	6,463	674	2,499	1,936	20	2,702	2,921	2,821
Erie	278,045	60,598	44,847	6,774	22,329	14,928	183	20,015	21,996	45,339
Franklin	153,638	34,945	28,517	3,906	12,067	8,644	101	11,848	12,880	14,258
Greene	37,519	7,221	6,584	807	3,100	2,129	25	2,878	3,151	5,200
Indiana	86,966	15,860	15,277	1,773	7,302	4,848	57	6,505	7,130	14,789
Lackawanna	211,917	42,598	40,519	4,762	17,222	12,291	139	16,831	18,302	31,144
Lancaster	536,624	128,793	89,727	14,397	41,751	28,456	353	38,439	42,053	55,725
Lawrence	88,082	17,798	17,902	1,990	7,102	5,314	58	7,365	7,973	15,015
Lebanon	137,067	31,439	25,574	3,514	10,736	7,699	90	10,559	11,473	15,464
Lehigh	360,685	82,249	58,165	9,194	28,575	19,173	237	25,744	28,267	42,456
Luzerne	318,449	62,459	61,036	6,982	26,033	18,616	209	25,496	27,732	46,457
Lycoming	116,048	23,833	20,789	2,664	9,415	6,552	76	8,898	9,717	16,377
Mercer	114,234	22,901	23,137	2,560	9,243	6,836	75	9,451	10,236	15,242
Monroe	166,397	34,257	25,870	3,829	13,551	9,240	109	12,406	13,675	20,559
Montgomery	819,264	178,455	137,266	19,949	65,556	45,144	538	61,016	66,866	52,939
Northampton	300,813	61,413	53,683	6,865	24,435	17,070	198	23,194	25,338	25,559
Perry	45,685	9,948	7,509	1,112	3,651	2,553	30	3,457	3,792	4,322
Philadelphia	1,567,442	346,932	198,475	38,782	127,499	74,034	1,024	94,862	106,183	385,781
Somerset	75,522	13,718	15,829	1,533	6,244	4,675	50	6,482	7,015	10,165
Tioga	41,877	8,324	8,398	930	3,401	2,486	28	3,428	3,716	5,233
Washington	208,261	41,143	40,169	4,599	16,954	12,373	137	17,016	18,497	20,501
Westmoreland	357,956	67,000	75,735	7,490	29,318	22,397	235	31,186	33,713	39,587
York	442,867	99,147	71,845	11,083	35,199	24,097	291	32,488	35,662	45,255
Totals	**11,271,558**	**2,386,961**	**1,883,463**	**266,826**	**910,734**	**616,511**	**7,400**	**829,957**	**910,319**	**1,425,095**

PENNSYLVANIA

American Lung Association in Pennsylvania

www.lung.org/pennsylvania

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	3	0	0	1.0	C	3	0	0	1.0	C	9.6	PASS
Allegheny	20	1	0	7.2	F	15	2	0	6.0	F	12.6	FAIL
Armstrong	11	1	0	4.2	F	0	0	0	0.0	A	11.1	PASS
Beaver	14	1	0	5.2	F	1	0	0	0.3	B	10.8	PASS
Berks	8	0	0	2.7	D	17	0	0	5.7	F	10.2	PASS
Blair	4	0	0	1.3	C	3	0	0	1.0	C	11.4	PASS
Bradford	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bucks	24	2	0	9.0	F	13	0	0	4.3	F	10.2	PASS
Cambria	3	0	0	1.0	C	2	0	0	0.7	B	11.7	PASS
Centre	2	0	0	0.7	B	2	0	0	0.7	B	8.6	PASS
Chester	6	1	0	2.5	D	2	0	0	0.7	B	10.0	PASS
Clearfield	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cumberland	DNC	DNC	DNC	DNC	DNC	12	0	0	4.0	F	10.1	PASS
Dauphin	6	0	0	2.0	C	15	0	0	5.0	F	11.0	PASS
Delaware	15	0	0	5.0	F	3	0	0	1.0	C	11.6	PASS
Elk	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	3	0	0	1.0	C	0	0	0	0.0	A	10.8	PASS
Franklin	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Indiana	10	1	0	3.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lackawanna	4	0	0	1.3	C	0	0	0	0.0	A	INC	INC
Lancaster	5	0	0	1.7	C	26	1	0	9.2	F	11.2	PASS
Lawrence	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lebanon	15	0	0	5.0	F	16	0	0	5.3	F	INC	INC
Lehigh	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Luzerne	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lycoming	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	9	0	0	3.0	D	0	1	0	0.5	B	9.7	PASS
Monroe	2	0	0	0.7	B	0	0	0	0.0	A	8.7	PASS
Montgomery	14	0	0	4.7	F	4	0	0	1.3	C	9.0	PASS
Northampton	4	0	0	1.3	C	11	0	0	3.7	F	10.0	PASS
Perry	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Philadelphia	21	3	0	8.5	F	9	0	0	3.0	D	11.8	PASS
Somerset	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tioga	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Washington	11	0	0	3.7	F	1	0	0	0.3	B	11.7	PASS
Westmoreland	7	0	0	2.3	D	0	0	0	0.0	A	9.8	PASS
York	9	0	0	3.0	D	6	0	0	2.0	C	10.1	PASS

RHODE ISLAND

American Lung Association in Rhode Island

www.lung.org/rhodeisland

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Kent	164,801	31,665	29,398	3,101	14,638	8,784	117	10,569	12,804	14,250
Providence	633,473	132,542	91,356	12,982	55,645	29,827	449	35,158	42,350	104,385
Washington	126,517	22,283	23,507	2,183	11,447	6,849	90	8,290	9,985	11,912
Totals	**924,791**	**186,490**	**144,261**	**18,266**	**81,730**	**45,460**	**655**	**54,017**	**65,138**	**130,547**

RHODE ISLAND

American Lung Association in Rhode Island

www.lung.org/rhodeisland

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Kent	8	1	0	3.2	D
Providence	10	1	0	3.8	F
Washington	16	1	0	5.8	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	0	0	0	0.0	A	4.9	PASS
Providence	1	1	0	0.8	B	8.1	PASS
Washington	0	0	0	0.0	A	5.1	PASS

SOUTH CAROLINA

American Lung Association in South Carolina

www.lung.org/southcarolina

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Abbeville	24,932	5,332	4,973	452	1,621	1,530	16	2,100	2,554	4,617
Aiken	165,829	36,383	29,985	3,085	10,685	9,783	109	13,223	16,185	29,497
Anderson	194,692	45,054	33,829	3,820	12,344	11,213	128	15,093	18,504	32,807
Berkeley	202,786	49,143	25,819	4,167	12,568	10,415	134	13,345	16,679	25,852
Charleston	389,262	78,207	57,844	6,631	25,386	21,392	255	27,842	34,524	56,459
Cherokee	56,194	13,378	8,734	1,134	3,526	3,110	37	4,114	5,081	11,195
Chesterfield	46,017	10,586	7,528	898	2,937	2,656	30	3,540	4,366	10,653
Colleton	37,731	8,550	7,241	725	2,418	2,277	25	3,114	3,796	8,601
Darlington	67,548	15,405	11,535	1,306	4,310	3,911	44	5,246	6,446	14,194
Edgefield	26,514	5,036	4,394	427	1,777	1,585	18	2,099	2,595	4,459
Florence	138,900	33,464	21,513	2,837	8,670	7,614	90	10,074	12,433	27,558
Greenville	491,863	115,082	71,724	9,758	30,913	26,554	323	34,724	43,049	66,299
Lexington	281,833	66,209	41,223	5,614	17,775	15,468	185	20,257	25,138	36,805
Oconee	75,713	15,209	16,645	1,290	5,009	4,846	50	6,745	8,156	13,493
Pickens	121,691	23,855	18,905	2,023	7,956	6,702	80	8,773	10,836	20,751
Richland	407,051	88,453	47,511	7,500	25,787	20,235	267	25,368	31,886	59,495
Spartanburg	297,302	69,835	45,633	5,921	18,703	16,355	195	21,578	26,665	43,326
York	251,195	61,836	33,653	5,243	15,602	13,338	165	17,268	21,538	30,789
Totals	**3,277,053**	**741,017**	**488,689**	**62,830**	**207,986**	**178,985**	**2,150**	**234,503**	**290,433**	**496,850**

SOUTH CAROLINA

American Lung Association in South Carolina

www.lung.org/southcarolina

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Abbeville	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Aiken	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Anderson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkeley	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charleston	0	0	0	0.0	A	1	0	0	0.3	B	7.9	PASS
Cherokee	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chesterfield	0	0	0	0.0	A	0	0	0	0.0	A	7.9	PASS
Colleton	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Darlington	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Edgefield	1	0	0	0.3	B	0	0	0	0.0	A	8.4	PASS
Florence	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.7	PASS
Greenville	1	0	0	0.3	B	2	0	0	0.7	B	9.2	PASS
Lexington	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.3	PASS
Oconee	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Pickens	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richland	0	0	0	0.0	A	0	0	0	0.0	A	9.0	PASS
Spartanburg	1	0	0	0.3	B	0	0	0	0.0	A	8.8	PASS
York	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC

SOUTH DAKOTA

American Lung Association in South Dakota

www.lung.org/southdakota

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Brookings	33,897	6,856	3,643	581	2,312	1,215	21	1,707	1,964	4,419
Brown	38,785	9,206	6,242	781	2,477	1,671	24	2,579	2,772	3,846
Codington	27,939	6,862	4,415	582	1,761	1,199	17	1,850	1,994	2,976
Custer	8,446	1,380	2,234	117	581	497	5	826	837	873
Hughes	17,555	4,206	2,734	357	1,113	759	11	1,168	1,265	1,821
Jackson	3,321	1,116	452	95	185	123	2	188	203	1,067
Meade	26,986	6,396	3,833	542	1,729	1,105	17	1,667	1,829	2,598
Minnehaha	185,197	46,279	23,258	3,924	11,663	7,218	113	10,689	11,947	21,865
Pennington	108,702	25,681	17,633	2,177	6,946	4,719	67	7,295	7,836	12,946
Union	14,909	3,644	2,394	309	936	657	9	1,017	1,097	942
Totals	**465,737**	**111,626**	**66,838**	**9,465**	**29,703**	**19,163**	**285**	**28,987**	**31,745**	**53,353**

SOUTH DAKOTA

American Lung Association in South Dakota

www.lung.org/southdakota

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Brookings	0	0	0	0.0	A
Brown	DNC	DNC	DNC	DNC	DNC
Codington	DNC	DNC	DNC	DNC	DNC
Custer	0	0	0	0.0	A
Hughes	DNC	DNC	DNC	DNC	DNC
Jackson	0	0	0	0.0	A
Meade	0	0	0	0.0	A
Minnehaha	0	0	0	0.0	A
Pennington	DNC	DNC	DNC	DNC	DNC
Union	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Brookings	2	0	0	0.7	B	INC	INC
Brown	0	0	0	0.0	A	6.6	PASS
Codington	1	0	0	0.3	B	7.1	PASS
Custer	2	0	0	0.7	B	3.2	PASS
Hughes	INC	INC	INC	INC	INC	INC	INC
Jackson	2	0	0	0.7	B	4.7	PASS
Meade	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Minnehaha	3	0	0	1.0	C	8.3	PASS
Pennington	2	0	0	0.7	B	7.8	PASS
Union	3	0	0	1.0	C	8.5	PASS

TENNESSEE

American Lung Association in Tennessee

www.lung.org/tennessee

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Anderson	75,749	15,904	14,578	1,549	5,382	6,163	57	7,382	8,189	14,721
Blount	127,253	26,593	24,050	2,590	9,052	10,324	97	12,324	13,704	16,388
Claiborne	31,709	6,219	6,001	606	2,285	2,576	24	3,069	3,415	6,575
Davidson	678,889	145,277	76,326	14,149	46,887	45,604	514	50,248	58,858	111,678
DeKalb	19,182	4,223	3,473	411	1,343	1,518	15	1,803	2,011	3,814
Dyer	37,893	9,170	6,385	893	2,572	2,856	29	3,371	3,776	8,374
Hamilton	354,098	74,599	57,953	7,265	24,920	26,989	268	31,502	35,529	52,287
Jefferson	53,240	10,896	10,271	1,061	3,801	4,330	40	5,184	5,750	8,627
Knox	451,324	96,191	66,821	9,368	31,513	33,063	343	38,002	43,287	68,679
Lawrence	42,564	10,676	7,487	1,040	2,858	3,222	32	3,837	4,270	7,931
Loudon	51,130	10,141	12,833	988	3,693	4,513	39	5,653	6,075	6,804
Madison	97,610	22,374	15,115	2,179	6,713	7,242	74	8,408	9,521	16,874
Maury	87,757	20,627	13,377	2,009	6,004	6,508	67	7,544	8,558	11,432
McMinn	52,639	11,338	10,008	1,104	3,714	4,249	40	5,085	5,644	11,864
Meigs	11,830	2,461	2,407	240	846	988	9	1,194	1,317	2,351
Montgomery	193,479	52,142	16,996	5,078	12,300	11,310	148	12,142	14,451	25,378
Putnam	74,553	15,787	12,232	1,538	5,194	5,498	57	6,430	7,225	14,166
Roane	52,753	10,283	11,475	1,001	3,845	4,582	40	5,579	6,125	9,180
Sevier	95,946	20,280	17,553	1,975	6,800	7,694	73	9,139	10,197	13,806
Shelby	938,069	237,852	113,176	23,165	62,228	63,837	709	71,647	83,069	186,186
Sullivan	156,791	30,977	32,448	3,017	11,325	13,169	119	15,927	17,548	25,241
Sumner	175,989	42,434	26,488	4,133	11,963	13,003	134	15,057	17,099	17,557
Williamson	211,672	59,107	25,560	5,757	13,764	14,807	161	16,702	19,368	10,548
Wilson	128,911	30,931	19,198	3,012	8,798	9,604	98	11,097	12,629	10,676
Totals	**4,201,030**	**966,482**	**602,211**	**94,128**	**287,800**	**303,651**	**3,187**	**348,325**	**397,614**	**661,137**

TENNESSEE

American Lung Association in Tennessee

www.lung.org/tennessee

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anderson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Blount	2	0	0	0.7	B	INC	INC	INC	INC	INC	INC	INC
Claiborne	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davidson	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
DeKalb	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dyer	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Hamilton	5	0	0	1.7	C	0	0	0	0.0	A	9.0	PASS
Jefferson	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Lawrence	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Loudon	2	0	0	0.7	B	INC	INC	INC	INC	INC	INC	INC
Madison	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Maury	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
McMinn	INC	INC	INC	INC	INC	0	0	0	0.0	A	8.6	PASS
Meigs	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Putnam	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Roane	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Sevier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	8	0	0	2.7	D	INC	INC	INC	INC	INC	INC	INC
Sullivan	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Sumner	2	0	0	0.7	B	INC	INC	INC	INC	INC	INC	INC
Williamson	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wilson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC

TEXAS

American Lung Association in Texas

www.lung.org/texas

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bell	334,941	93,147	33,942	7,371	18,436	11,419	181	17,333	24,804	51,728
Bexar	1,897,753	494,269	218,139	39,112	106,843	70,076	1,023	108,644	154,343	288,976
Bowie	93,389	22,169	14,727	1,754	5,411	3,976	51	6,461	8,867	16,170
Brazoria	346,312	92,721	38,491	7,337	19,276	12,985	188	20,194	29,003	35,519
Brewster	9,145	1,752	1,878	139	561	448	5	752	1,004	1,349
Cameron	422,156	132,069	54,064	10,451	22,076	15,253	227	24,295	33,605	133,508
Collin	914,127	246,271	92,102	19,488	50,752	33,687	493	51,814	75,532	59,993
Dallas	2,553,385	682,485	252,270	54,006	142,402	90,900	1,377	138,406	200,959	451,795
Denton	780,612	201,646	70,965	15,957	44,046	27,885	421	42,057	62,008	61,186
El Paso	835,593	233,304	97,233	18,462	45,852	30,316	450	47,241	66,708	165,987
Ellis	163,632	44,077	19,927	3,488	9,080	6,354	88	10,033	14,265	17,580
Galveston	322,225	79,179	42,148	6,266	18,452	13,130	174	20,870	29,546	44,355
Gregg	124,108	32,020	17,698	2,534	6,999	4,996	67	8,024	11,115	20,438
Harris	4,538,028	1,224,413	428,697	96,889	252,264	158,961	2,452	240,522	350,940	744,712
Harrison	66,746	16,910	10,327	1,338	3,783	2,825	36	4,602	6,340	12,036
Hidalgo	842,304	281,203	90,076	22,252	42,759	27,637	453	42,854	60,247	259,506
Hood	55,423	11,607	13,395	918	3,319	2,893	30	5,004	6,519	5,364
Hunt	89,844	21,419	13,951	1,695	5,194	3,868	48	6,290	8,692	14,418
Jefferson	254,308	60,384	34,403	4,778	14,740	10,306	138	16,368	22,964	40,306
Johnson	159,990	41,857	21,591	3,312	8,971	6,439	87	10,300	14,450	17,955
Kaufman	114,690	31,704	13,801	2,509	6,304	4,385	62	6,917	9,825	14,824
McLennan	245,671	60,939	33,372	4,822	14,060	9,608	132	15,226	21,150	46,949
Montgomery	537,559	143,545	66,131	11,359	29,920	21,043	290	33,281	47,307	53,837
Navarro	48,323	12,673	7,978	1,003	2,706	2,070	26	3,411	4,643	9,312
Nueces	359,715	90,534	47,578	7,164	20,468	14,191	194	22,497	31,521	70,336
Orange	84,260	20,854	12,913	1,650	4,813	3,582	45	5,824	8,049	13,443
Parker	126,042	30,860	19,085	2,442	7,217	5,459	68	8,882	12,369	11,680
Polk	46,972	9,604	9,187	760	2,833	2,277	26	3,813	5,142	7,304
Randall	130,269	31,609	17,919	2,501	7,503	5,223	70	8,308	11,583	10,887
Rockwall	90,861	24,947	11,026	1,974	5,004	3,533	49	5,590	7,958	5,403
Smith	222,936	55,137	35,076	4,363	12,754	9,316	120	15,144	20,694	34,786
Tarrant	1,982,498	533,475	208,355	42,215	110,194	72,657	1,068	111,992	161,771	255,993
Travis	1,176,558	267,942	102,528	21,203	69,258	41,330	638	61,060	90,267	152,195
Victoria	92,382	23,834	13,673	1,886	5,210	3,756	50	6,064	8,350	12,329
Webb	269,721	91,421	23,938	7,234	13,588	8,425	145	12,741	18,399	81,276
Totals	**20,332,478**	**5,441,980**	**2,188,584**	**430,631**	**1,133,050**	**741,209**	**10,973**	**1,142,813**	**1,640,941**	**3,223,435**

TEXAS

American Lung Association in Texas

www.lung.org/texas

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bell	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bexar	31	5	0	12.8	F	0	0	0	0.0	A	8.5	PASS
Bowie	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.8	PASS
Brazoria	19	8	0	10.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brewster	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cameron	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Collin	28	0	0	9.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dallas	32	1	0	11.2	F	1	0	0	0.3	B	10.2	PASS
Denton	59	7	0	23.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
El Paso	18	0	0	6.0	F	8	2	0	3.7	F	9.9	PASS
Ellis	11	0	0	3.7	F	0	0	0	0.0	A	9.3	PASS
Galveston	20	3	0	8.2	F	0	0	0	0.0	A	INC	INC
Gregg	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harris	47	14	1	23.3	F	3	0	0	1.0	C	11.6	PASS
Harrison	4	0	0	1.3	C	0	0	0	0.0	A	9.0	PASS
Hidalgo	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Hood	13	4	0	6.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hunt	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	18	1	0	6.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	20	1	0	7.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kaufman	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McLennan	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Navarro	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nueces	3	0	0	1.0	C	0	0	0	0.0	A	10.1	PASS
Orange	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Parker	34	0	0	11.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Randall	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockwall	17	0	0	5.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Smith	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tarrant	59	7	0	23.2	F	1	0	0	0.3	B	10.0	PASS
Travis	14	0	0	4.7	F	0	0	0	0.0	A	9.2	PASS
Victoria	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Webb	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC

UTAH

American Lung Association in Utah

www.lung.org/utah

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Box Elder	52,097	16,873	6,463	1,198	3,204	1,406	14	2,220	2,804	4,345
Cache	120,783	37,123	10,685	2,636	7,531	2,768	32	4,057	5,140	18,657
Carbon	20,479	5,456	3,241	387	1,370	637	5	1,040	1,297	3,247
Daggett	1,109	254	235	18	78	40	0	69	84	84
Davis	336,043	111,031	31,398	7,885	20,377	8,120	89	12,138	15,590	23,138
Duchesne	20,862	7,230	2,283	513	1,236	517	6	802	1,014	2,247
Garfield	5,009	1,233	1,025	88	346	178	1	304	374	543
Salt Lake	1,107,314	311,386	109,258	22,113	72,084	28,671	293	42,720	54,993	117,311
San Juan	15,772	5,071	1,853	360	974	425	4	662	844	4,397
Tooele	62,952	21,418	5,557	1,521	3,763	1,497	17	2,220	2,871	4,493
Uintah	37,928	12,923	3,410	918	2,262	889	10	1,322	1,697	3,733
Utah	575,205	198,953	42,066	14,129	33,832	12,002	152	17,123	21,908	70,537
Washington	155,602	43,096	31,425	3,061	10,259	5,108	41	8,826	10,649	20,252
Weber	243,645	70,325	27,606	4,994	15,725	6,546	64	10,045	12,791	29,768
Totals	**2,754,800**	**842,372**	**276,505**	**59,822**	**173,040**	**68,805**	**729**	**103,548**	**132,056**	**302,752**

UTAH

American Lung Association in Utah

www.lung.org/utah

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Box Elder	8	0	0	2.7	D
Cache	3	0	0	1.0	C
Carbon	4	0	0	1.3	C
Daggett	INC	INC	INC	INC	INC
Davis	14	0	0	4.7	F
Duchesne	21	22	5	21.3	F
Garfield	4	0	0	1.3	C
Salt Lake	38	0	0	12.7	F
San Juan	1	0	0	0.3	B
Tooele	9	0	0	3.0	D
Uintah	30	24	18	34.0	F
Utah	27	0	0	9.0	F
Washington	6	0	0	2.0	C
Weber	18	1	0	6.5	F

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Box Elder	7	1	0	2.8	D	7.5	PASS
Cache	38	15	0	20.2	F	9.1	PASS
Carbon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Daggett	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davis	16	0	0	5.3	F	7.8	PASS
Duchesne	INC	INC	INC	INC	INC	INC	INC
Garfield	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Salt Lake	47	12	0	21.7	F	9.0	PASS
San Juan	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tooele	INC	INC	INC	INC	INC	INC	INC
Uintah	INC	INC	INC	INC	INC	INC	INC
Utah	24	15	0	15.5	F	9.0	PASS
Washington	0	0	0	0.0	A	INC	INC
Weber	24	6	0	11.0	F	INC	INC

VERMONT

American Lung Association in Vermont

www.lung.org/vermont

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Bennington	36,317	6,999	7,896	725	3,205	1,980	22	2,673	2,666	4,102
Chittenden	161,382	29,797	22,049	3,086	14,815	7,330	96	8,926	9,526	15,695
Rutland	59,736	10,817	12,005	1,120	5,377	3,204	36	4,247	4,301	6,560
Totals	**257,435**	**47,613**	**41,950**	**4,930**	**23,397**	**12,514**	**153**	**15,846**	**16,493**	**26,357**

VERMONT

American Lung Association in Vermont

www.lung.org/vermont

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bennington	1	0	0	0.3	B
Chittenden	0	0	0	0.0	A
Rutland	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bennington	0	0	0	0.0	A	6.2	PASS
Chittenden	0	0	0	0.0	A	6.3	PASS
Rutland	6	0	0	2.0	C	8.7	PASS

VIRGINIA

American Lung Association in Virginia

www.lung.org/virginia

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Albemarle	105,703	21,846	18,063	1,852	6,674	5,025	63	6,684	9,069	9,462
Alexandria City	153,511	27,554	15,874	2,336	10,006	6,410	91	7,896	10,885	13,832
Arlington	229,164	40,006	21,698	3,392	15,031	9,204	137	11,139	15,335	16,031
Bristol City	17,141	3,408	3,413	289	1,094	868	10	1,179	1,593	3,260
Caroline	29,984	7,130	4,670	605	1,817	1,373	18	1,818	2,480	3,531
Charles City	7,040	1,100	1,557	93	473	402	4	554	754	814
Chesterfield	335,687	81,561	44,925	6,915	20,191	14,765	199	19,183	26,357	22,942
Fairfax	1,142,234	271,539	136,327	23,023	69,150	48,796	680	62,353	85,991	69,985
Fauquier	68,782	16,340	10,588	1,385	4,167	3,231	41	4,286	5,880	4,646
Frederick	83,199	19,427	13,087	1,647	5,070	3,865	50	5,124	7,000	6,342
Giles	16,708	3,416	3,426	290	1,058	865	10	1,185	1,603	1,751
Hampton City	136,454	29,445	19,217	2,497	8,509	6,064	81	7,858	10,733	20,072
Hanover	103,227	23,125	16,704	1,961	6,367	4,957	61	6,601	9,037	6,268
Henrico	325,155	75,430	46,015	6,396	19,852	14,479	192	18,876	25,832	30,037
Loudoun	375,629	109,247	31,044	9,263	21,135	13,961	224	17,211	23,976	13,953
Lynchburg City	79,812	15,534	11,277	1,317	5,119	3,390	47	4,330	5,846	15,975
Madison	13,134	2,726	2,759	231	829	690	8	950	1,286	1,351
Norfolk City	246,393	49,439	25,062	4,192	15,658	9,727	148	11,908	16,313	45,756
Page	23,726	4,791	4,822	406	1,507	1,232	14	1,684	2,282	3,532
Prince Edward	22,952	3,702	3,609	314	1,533	1,054	14	1,364	1,843	4,172
Prince William	451,721	125,637	39,298	10,653	25,879	17,061	269	21,074	29,283	29,925
Richmond City	220,289	40,012	25,506	3,393	14,329	9,365	130	11,694	16,040	50,763
Roanoke	94,409	19,582	19,014	1,660	5,958	4,834	56	6,603	8,935	6,744
Roanoke City	99,897	22,184	15,144	1,881	6,180	4,558	59	5,985	8,166	20,913
Rockbridge	22,354	3,881	5,538	329	1,472	1,274	13	1,784	2,400	2,834
Rockingham	78,593	17,492	14,401	1,483	4,863	3,831	47	5,173	7,016	8,422
Salem City	25,432	4,918	4,476	417	1,633	1,240	15	1,653	2,244	2,391
Stafford	142,003	37,700	13,452	3,197	8,277	5,610	85	7,005	9,733	7,448
Suffolk City	88,161	21,858	11,713	1,853	5,268	3,833	52	4,976	6,831	11,370
Virginia Beach City	452,745	102,144	57,630	8,661	27,869	19,333	269	24,736	33,881	36,451
Wythe	29,119	5,837	5,864	495	1,853	1,507	17	2,056	2,786	4,163
Totals	**5,220,358**	**1,208,011**	**646,173**	**102,425**	**318,821**	**222,804**	**3,102**	**284,920**	**391,408**	**475,136**

VIRGINIA

American Lung Association in Virginia

www.lung.org/virginia

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albemarle	0	0	0	0.0	A	0	0	0	0.0	A	7.4	PASS
Alexandria City	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Arlington	11	1	0	4.2	F	0	0	0	0.0	A	8.9	PASS
Bristol City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.2	PASS
Caroline	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charles City	4	0	0	1.3	C	0	0	0	0.0	A	7.7	PASS
Chesterfield	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Fairfax	6	0	0	2.0	C	0	0	0	0.0	A	8.2	PASS
Fauquier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Frederick	0	0	0	0.0	A	1	0	0	0.3	B	9.0	PASS
Giles	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hampton City	2	0	0	0.7	B	0	0	0	0.0	A	7.3	PASS
Hanover	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henrico	3	0	0	1.0	C	0	0	0	0.0	A	8.0	PASS
Loudoun	7	0	0	2.3	D	0	0	0	0.0	A	8.7	PASS
Lynchburg City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.4	PASS
Madison	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Norfolk City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.7	PASS
Page	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Prince Edward	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Prince William	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richmond City	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Roanoke	0	0	0	0.0	A	1	0	0	0.3	B	INC	INC
Roanoke City	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Rockbridge	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockingham	0	0	0	0.0	A	0	0	0	0.0	A	8.5	PASS
Salem City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.5	PASS
Stafford	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Suffolk City	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Virginia Beach City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.9	PASS
Wythe	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC

WASHINGTON

American Lung Association in Washington

www.lung.org/washington

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Benton	190,309	50,899	26,210	3,325	13,172	8,583	106	10,631	11,734	26,824
Chelan	75,644	18,190	13,547	1,188	5,459	3,797	42	4,953	5,333	9,458
Clallam	73,486	12,880	20,298	841	5,803	4,522	41	6,419	6,630	11,195
Clark	459,495	114,536	65,323	7,481	32,661	21,440	255	26,573	29,368	48,401
King	2,117,125	438,574	263,386	28,646	157,724	97,651	1,176	116,316	130,619	205,336
Kitsap	260,131	53,941	42,954	3,523	19,521	13,074	145	16,577	18,085	24,950
Kittitas	43,269	7,689	6,540	502	3,314	2,060	24	2,556	2,781	8,190
Pierce	843,954	201,220	110,163	13,143	60,558	38,426	469	46,643	51,946	102,917
Skagit	121,846	27,143	23,517	1,773	9,000	6,344	68	8,382	8,962	17,965
Snohomish	772,501	177,236	96,213	11,577	56,362	35,894	429	42,913	48,418	71,017
Spokane	490,945	109,896	74,486	7,178	35,959	23,541	273	29,445	32,284	74,144
Thurston	269,536	58,760	42,752	3,838	19,931	13,225	150	16,672	18,229	32,458
Whatcom	212,284	42,086	33,919	2,749	15,982	10,360	118	13,054	14,194	29,802
Yakima	248,830	74,063	32,662	4,838	16,416	10,504	138	13,029	14,296	46,794
Totals	**6,179,355**	**1,387,113**	**851,970**	**90,602**	**451,863**	**289,421**	**3,432**	**354,163**	**392,878**	**709,451**

WASHINGTON

American Lung Association in Washington

www.lung.org/washington

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Benton	INC	INC	INC	INC	INC
Chelan	DNC	DNC	DNC	DNC	DNC
Clallam	0	0	0	0.0	A
Clark	1	0	0	0.3	B
King	8	0	0	2.7	D
Kitsap	DNC	DNC	DNC	DNC	DNC
Kittitas	DNC	DNC	DNC	DNC	DNC
Pierce	0	0	0	0.0	A
Skagit	0	0	0	0.0	A
Snohomish	DNC	DNC	DNC	DNC	DNC
Spokane	1	0	0	0.3	B
Thurston	0	0	0	0.0	A
Whatcom	0	0	0	0.0	A
Yakima	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Benton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chelan	2	2	0	1.7	C	INC	INC
Clallam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	4	2	0	2.3	D	INC	INC
King	7	0	0	2.3	D	6.7	PASS
Kitsap	0	0	0	0.0	A	INC	INC
Kittitas	INC	INC	INC	INC	INC	INC	INC
Pierce	13	1	0	4.8	F	7.5	PASS
Skagit	0	0	0	0.0	A	INC	INC
Snohomish	15	2	0	6.0	F	8.1	PASS
Spokane	5	0	0	1.7	C	INC	INC
Thurston	INC	INC	INC	INC	INC	INC	INC
Whatcom	0	0	0	0.0	A	7.0	PASS
Yakima	17	1	0	6.2	F	9.1	PASS

WEST VIRGINIA

American Lung Association in West Virginia

www.lung.org/westvirginia

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Berkeley	111,901	26,911	15,243	2,534	9,221	10,805	91	10,968	11,588	13,823
Brooke	23,350	4,124	5,158	388	2,096	2,682	19	2,901	2,960	3,338
Cabell	96,844	19,614	16,756	1,847	8,326	9,800	78	10,149	10,561	18,776
Gilmer	8,518	1,193	1,310	112	786	877	7	877	929	1,650
Greenbrier	35,516	6,979	7,789	657	3,114	4,013	29	4,354	4,437	6,629
Hancock	29,815	5,781	6,177	544	2,628	3,371	24	3,629	3,718	4,032
Harrison	68,714	14,900	12,499	1,403	5,855	7,237	56	7,643	7,901	10,861
Kanawha	188,332	38,490	35,175	3,624	16,307	20,209	152	21,378	22,079	30,529
Marion	56,925	11,532	10,481	1,086	4,917	5,964	46	6,266	6,482	8,899
Marshall	31,978	6,368	6,457	600	2,796	3,555	26	3,813	3,913	3,965
Monongalia	104,236	16,820	11,513	1,584	9,288	9,493	85	8,956	9,755	19,051
Ohio	43,066	8,330	8,520	784	3,775	4,692	35	4,991	5,135	5,711
Raleigh	77,510	16,482	14,532	1,552	6,623	8,139	63	8,606	8,878	14,676
Tucker	6,966	1,219	1,620	115	628	821	6	897	911	1,165
Wood	86,452	18,498	16,258	1,742	7,401	9,235	70	9,804	10,108	14,793
Totals	**970,123**	**197,241**	**169,488**	**18,570**	**83,761**	**100,893**	**785**	**105,231**	**109,355**	**157,898**

WEST VIRGINIA

American Lung Association in West Virginia

www.lung.org/westvirginia

HIGH OZONE DAYS 2013–2015

County	Orange	Red	Purple	Wgt. Avg.	Grade
Berkeley	0	0	0	0.0	A
Brooke	DNC	DNC	DNC	DNC	DNC
Cabell	2	0	0	0.7	B
Gilmer	0	0	0	0.0	A
Greenbrier	0	0	0	0.0	A
Hancock	6	0	0	2.0	C
Harrison	DNC	DNC	DNC	DNC	DNC
Kanawha	3	0	0	1.0	C
Marion	DNC	DNC	DNC	DNC	DNC
Marshall	DNC	DNC	DNC	DNC	DNC
Monongalia	3	0	0	1.0	C
Ohio	4	0	0	1.3	C
Raleigh	DNC	DNC	DNC	DNC	DNC
Tucker	1	0	0	0.3	B
Wood	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2013–2015

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Berkeley	1	0	0	0.3	B	10.3	PASS
Brooke	0	0	0	0.0	A	11.2	PASS
Cabell	0	0	0	0.0	A	9.2	PASS
Gilmer	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greenbrier	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	0	0	0	0.0	A	INC	INC
Harrison	0	0	0	0.0	A	8.8	PASS
Kanawha	0	0	0	0.0	A	9.6	PASS
Marion	0	0	0	0.0	A	9.4	PASS
Marshall	0	0	0	0.0	A	10.7	PASS
Monongalia	0	0	0	0.0	A	8.6	PASS
Ohio	1	0	0	0.3	B	10.3	PASS
Raleigh	0	0	0	0.0	A	INC	INC
Tucker	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	0	0	0	0.0	A	9.4	PASS

WISCONSIN

American Lung Association in Wisconsin

www.lung.org/wisconsin

				AT-RISK GROUPS						
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Ashland	15,843	3,542	2,833	260	1,157	621	10	996	1,100	2,616
Brown	258,718	62,681	34,930	4,606	18,884	8,819	155	13,713	15,620	27,979
Columbia	56,743	12,579	9,524	924	4,170	2,190	34	3,470	3,876	4,908
Dane	523,643	109,975	64,580	8,081	40,551	16,979	314	26,290	30,144	57,411
Dodge	88,502	18,187	14,761	1,336	6,664	3,427	53	5,421	6,066	7,157
Door	27,554	4,529	7,601	333	2,084	1,370	16	2,313	2,427	2,317
Eau Claire	102,105	20,961	14,721	1,540	7,907	3,459	61	5,497	6,148	13,260
Fond du Lac	101,973	22,331	17,318	1,641	7,537	3,913	61	6,233	6,928	9,248
Forest	9,057	1,823	2,016	134	670	394	5	651	698	1,284
Grant	52,250	10,640	8,626	782	4,010	1,884	31	3,043	3,347	6,622
Jefferson	84,559	18,608	13,050	1,367	6,291	3,118	51	4,903	5,520	7,534
Kenosha	168,437	40,321	21,512	2,963	12,345	5,738	101	8,805	10,154	20,812
Kewaunee	20,366	4,483	3,922	329	1,482	833	12	1,346	1,474	1,652
La Crosse	118,212	23,826	17,986	1,751	9,144	4,151	71	6,615	7,372	16,248
Manitowoc	79,806	16,743	15,197	1,230	5,887	3,292	48	5,289	5,825	8,466
Marathon	135,868	31,458	22,337	2,312	9,891	5,104	81	8,108	9,037	12,675
Milwaukee	957,735	233,159	118,711	17,132	70,675	30,571	572	47,491	54,244	189,827
Outagamie	183,245	43,882	24,843	3,224	13,390	6,343	110	9,829	11,229	16,225
Ozaukee	87,850	19,169	15,833	1,409	6,435	3,525	53	5,625	6,236	4,488
Racine	195,080	46,202	29,573	3,395	14,155	7,136	117	11,184	12,626	23,505
Rock	161,448	38,325	24,969	2,816	11,732	5,853	97	9,248	10,366	21,946
Sauk	63,642	14,520	11,094	1,067	4,639	2,441	38	3,914	4,323	7,340
Sheboygan	115,569	26,084	19,254	1,917	8,460	4,412	69	7,000	7,810	10,167
Taylor	20,455	4,832	3,821	355	1,456	822	12	1,323	1,454	2,491
Vilas	21,387	3,623	6,283	266	1,590	1,100	13	1,872	1,949	2,829
Walworth	102,804	22,330	16,304	1,641	7,679	3,802	62	6,018	6,736	12,374
Waukesha	396,488	87,705	67,598	6,444	29,037	15,576	237	24,644	27,546	18,401
Totals	**4,149,339**	**942,518**	**609,197**	**69,255**	**307,919**	**146,872**	**2,484**	**230,839**	**260,254**	**509,782**

WISCONSIN

American Lung Association in Wisconsin

www.lung.org/wisconsin

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ashland	0	0	0	0.0	A	0	0	0	0.0	A	5.1	PASS
Brown	3	0	0	1.0	C	1	0	0	0.3	B	8.2	PASS
Columbia	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dane	1	0	0	0.3	B	1	0	0	0.3	B	9.0	PASS
Dodge	7	0	0	2.3	D	0	0	0	0.0	A	8.0	PASS
Door	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Eau Claire	0	0	0	0.0	A	0	0	0	0.0	A	7.5	PASS
Fond du Lac	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Forest	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Grant	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.3	PASS
Jefferson	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kenosha	24	0	0	8.0	F	0	1	0	0.5	B	8.5	PASS
Kewaunee	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Crosse	0	0	0	0.0	A	0	0	0	0.0	A	8.0	PASS
Manitowoc	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marathon	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Milwaukee	10	0	0	3.3	F	0	0	0	0.0	A	9.7	PASS
Outagamie	3	0	0	1.0	C	1	0	0	0.3	B	8.0	PASS
Ozaukee	15	0	0	5.0	F	0	0	0	0.0	A	7.6	PASS
Racine	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rock	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sauk	3	0	0	1.0	C	0	0	0	0.0	A	7.2	PASS
Sheboygan	25	1	0	8.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Taylor	0	0	0	0.0	A	0	0	0	0.0	A	6.5	PASS
Vilas	1	0	0	0.3	B	0	0	0	0.0	A	5.0	PASS
Walworth	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Waukesha	3	0	0	1.0	C	0	0	0	0.0	A	9.8	PASS

WYOMING

American Lung Association in Wyoming

www.lung.org/wyoming

		AT-RISK GROUPS								
				Lung Diseases						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Albany	37,956	6,264	3,881	538	2,526	1,852	15	1,790	1,902	7,181
Big Horn	12,022	3,083	2,363	265	715	740	5	837	876	1,437
Campbell	49,220	13,816	3,674	1,187	2,812	2,173	19	2,132	2,473	3,668
Carbon	15,559	3,677	2,241	316	947	865	6	927	1,010	1,682
Converse	14,236	3,652	2,020	314	844	781	6	840	920	1,205
Fremont	40,315	10,278	6,773	883	2,399	2,335	16	2,573	2,747	5,071
Goshen	13,383	2,695	2,823	232	856	878	5	990	1,031	1,852
Laramie	97,121	22,812	14,266	1,960	5,929	5,384	38	5,765	6,216	10,084
Natrona	82,178	19,800	10,804	1,701	4,972	4,371	32	4,607	5,031	8,827
Park	29,228	5,898	6,063	507	1,867	1,924	11	2,170	2,282	2,739
Sheridan	30,009	6,456	5,731	555	1,883	1,893	12	2,113	2,242	2,777
Sublette	9,899	2,383	1,348	205	599	547	4	584	647	605
Sweetwater	44,626	11,984	4,474	1,030	2,597	2,140	18	2,180	2,451	3,744
Teton	23,125	4,349	3,001	374	1,496	1,280	9	1,331	1,464	1,516
Uinta	20,822	6,141	2,432	528	1,169	1,029	8	1,082	1,201	2,030
Weston	7,234	1,570	1,331	135	453	451	3	501	536	675
Totals	**526,933**	**124,858**	**73,225**	**10,727**	**32,063**	**28,641**	**208**	**30,421**	**33,029**	**55,093**

WYOMING

American Lung Association in Wyoming

www.lung.org/wyoming

	HIGH OZONE DAYS 2013–2015					HIGH PARTICLE POLLUTION DAYS 2013–2015						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	2	0	0	0.7	B	0	0	0	0.0	A	4.3	PASS
Big Horn	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Campbell	0	0	0	0.0	A	1	0	0	0.3	B	4.2	PASS
Carbon	1	0	0	0.3	B	0	0	0	0.0	A	INC	INC
Converse	2	0	0	0.7	B	3	0	0	1.0	C	INC	INC
Fremont	0	0	0	0.0	A	1	0	0	0.3	B	6.9	PASS
Goshen	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Laramie	3	0	0	1.0	C	0	1	0	0.5	B	4.1	PASS
Natrona	2	0	0	0.7	B	0	0	0	0.0	A	4.6	PASS
Park	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	4.1	PASS
Sheridan	DNC	DNC	DNC	DNC	DNC	2	0	0	0.7	B	6.9	PASS
Sublette	1	0	0	0.3	B	0	0	0	0.0	A	5.0	PASS
Sweetwater	4	0	0	1.3	C	0	0	0	0.0	A	4.8	PASS
Teton	0	0	0	0.0	A	0	0	0	0.0	A	4.7	PASS
Uinta	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weston	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC

We will breathe easier when the air in every American community is clean and healthy.

We will breathe easier when people are free from the addictive grip of tobacco and the debilitating effects of lung disease.

We will breathe easier when the air in our public spaces and workplaces is clear of secondhand smoke.

We will breathe easier when children no longer battle airborne poisons or fear an asthma attack.

Until then, we are fighting for air.

About the American Lung Association

The American Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease, through research, education and advocacy. The work of the American Lung Association is focused on four strategic imperatives: to defeat lung cancer; to improve the air we breathe; to reduce the burden of lung disease on individuals and their families; and to eliminate tobacco use and tobacco-related diseases. For more information about the American Lung Association, a holder of the Better Business Bureau Wise Giving Guide Seal, or to support the work it does, call 1-800-LUNGUSA (1-800-586-4872) or visit: www.Lung.org.

AMERICAN LUNG ASSOCIATION.