AMERICAN LUNG ASSOCIATION®

STATE OF THE AIR 2018

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The American Lung Association assumes sole responsibility for the content of the American Lung Association "State of the Air® 2018."

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Contents

The State of the Air 2018

The "State of the Air 2018" found ozone pollution worsened significantly in 2014-2016 compared to the previous report, while improvements continued in year-round particle pollution and fewer episodes of high particle days. This year's report provides continued evidence that the United States must continue to fight climate change and to support and enforce the Clean Air Act to protect the nation from unhealthy air.

The State of the Air 2018 report shows that many cities across the nation experienced more days when ground-level ozone, also known as "smog," reached unhealthy levels, including most of the cities with the worst ozone problems. Fortunately, most cities continued to reduce their burden of year-round particle pollution, and fewer cities suffered from more spikes in particle pollution, often called "soot."

Many cities across the nation experienced more days when ground level ozone reached unhealthy levels in 2014-2016, thanks to record-setting heat.

The "State of the Air 2018" report adds to the evidence that a changing climate is making it harder to protect human health. With record-setting heat in 2016, high ozone days zoomed, putting millions more people at risk and adding challenges to the work cities are doing across the nation to clean up.

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 48 years, improvements that the State of the Air 2018 continues to document. The nation must ensure that the Clean Air Act's tools remain in place, funded and followed.

The "State of the Air 2018" report looks at levels of ozone and particle pollution found in official monitoring sites across the United States in 2014, 2015 and 2016. The report uses the most current quality-assured nationwide data available for these analyses.

The report examines particle pollution ($PM_{2.5}$) in two separate 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 2017" report covered data from 2013, 2014 and 2015.[1]

Overall Trends

The "State of the Air 2018" found ozone pollution significantly worsened in 2014-2016, while improvements continued in year-round particle pollution and fewer episodes of high particle days. The number of people exposed to unhealthy levels of air pollution increased to more than 133.9 million people, higher than the 125 million in the years covered by the 2017 report (2013-2015).

The spike in ozone demonstrates the public health impact of increased temperatures from the changing climate on the nation's air quality. With 2016 marking the second warmest year on record, the higher temperatures provided fuel to increase the formation of ozone from the still under-controlled emissions of the precursor emissions.

The **best progress came in the continued reduction of 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.

More than four in 10 people live where the air is unhealthy.

More than four in 10 people (41 percent) in the United States live in counties that have unhealthful levels of either ozone or particle pollution. More than 133.9 million people live in the 215 counties that had unhealthy ozone or particle pollution in 2014-2016.

Still, progress continues, thanks to the tools in the Clean Air Act. While this is a significant spike in areas with unhealthy levels of ozone and particle pollution, the number of people exposed to unhealthful air remains still far below the 166 million in the years covered in the 2016 report (2012-2014).

More than 7.7 million people (2.4 percent) **live in 10 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution.** This is 10.4 million fewer people than in the 2017 report, but also likely undercounts the number due to missing data. This year, two heavily populated counties in California—San Bernardino County and Los Angeles County—lacked year-round particle-pollution data. Had data been available from those two counties, which traditionally have unhealthful levels of all three measures, the actual number would likely be much higher, likely 19 million people. Furthermore, valid data remain missing on particle pollution in all of Illinois, as has been the case since the 2014 report covering 2010-2012.

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

Despite the increase in ozone, the "State of the Air 2018" report shows that actions taken under the Clean Air Act continue to clean up pollution in much of the nation, as it nearly completes its fifth decade of service. Many cities reported lower levels of year-round particle pollution, and many cities reached or remained close to their cleanest years ever.

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.

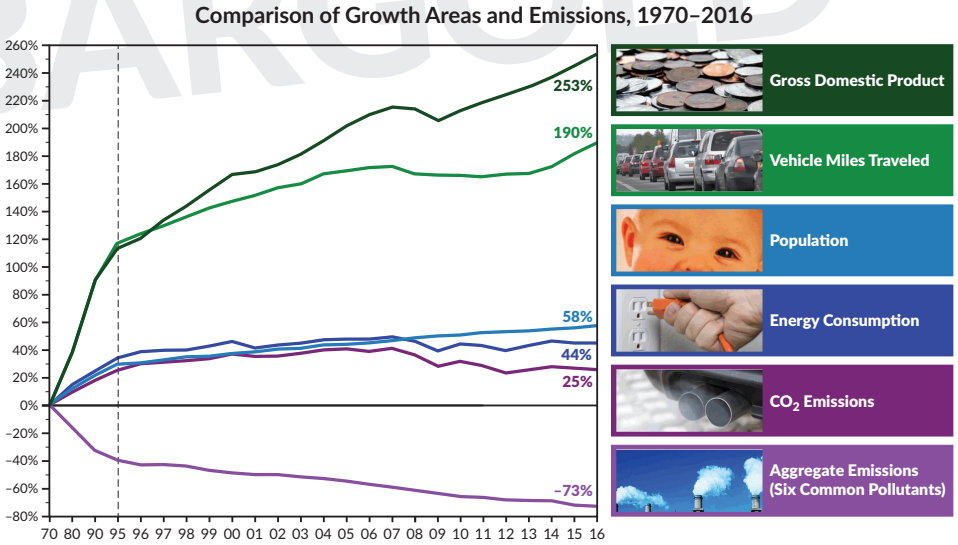

Figure 1: Air pollution emissions continue to drop steadily since 1970 thanks to the Clean Air Act. As the economy continues to grow, emissions that cause ozone and particle pollution continue to drop. Source: U.S. EPA, Air Trends: Air Quality National Summary, 2018.

As climate change continues, cleaning up these pollutants will become ever more challenging.

The "State of the Air 2018" report shows, again, that climate change makes it harder to protect human health. This year's report shows the spike in high ozone days; in last year's report, the spikes came in unhealthy particle-pollution episodes driven by wildfires. While most of the nation has much cleaner air quality than even a decade ago, too many cities suffered increased ozone from the increased temperature and continued high particle pollution from wildfires driven by changing rain patterns.

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 work to reduce emissions that worsen climate.

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. At its core, the Clean Air Act protects public health and has driven improvements in air quality for 48 years, as shown in Figure 1. Since 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. That progress is not certain to continue, as some in Congress seek to remove or weaken that law, and as the administration seeks to repeal or reverse the safeguards in place to enforce the law.

Ozone Pollution

Of the 25 most ozone-polluted cities, 16 had worse ozone, experiencing more unhealthy air days on average in 2014-2016. Nine cities improved, while five had their fewest days ever.

Increased heat in 2016, the second warmest year on record in the United States, likely drove this increase in ozone.

Increased heat in 2016 likely drove this increase in ozone. Warmer temperatures stimulate the reactions in the atmosphere that cause ozone to form, and 2016 saw the second warmest temperatures on record in the United States.[2]

Los Angeles remains at the top of this list, as it has for all but one of the 19 reports. Los Angeles also recorded more unhealthy air days in this report, measured in the weighted average, a change from last year when it reached its lowest level ever.

In addition to Los Angeles, 15 others among the 25 cities with the worst ozone pollution each had a higher average of unhealthy days than in 2014-2016, including some of the nation's largest metropolitan areas: New York City; Chicago; Atlanta; Philadelphia; San Diego; San Jose-San Francisco; Washington-Baltimore; and Salt Lake City. Many smaller cities on that list also suffered from more ozone: Bakersfield, CA; Visalia-Porterville-Hanford, CA; Sacramento, CA; Redding-Red Bluff, CA; Hartford, CT; Chico, CA; and Sheboygan, WI.

Fortunately, nine cities had fewer high ozone days, including five that experienced their fewest days since the report began: Modesto-Merced, CA; Las Vegas; Denver; El Centro, CA; and Dallas-Fort Worth. Also improving over last year's report were Fresno-Madera, CA; Phoenix; Houston; and Fort Collins, CO.

These comparisons are all based on the Air Quality Index adopted with the 2015 ozone national air quality standard. Unfortunately, EPA has delayed key steps to formally identify cities that do not meet that standard. In fact, the Lung Association and others had to take legal action to get EPA to announce its long-overdue list of cities that have unhealthy levels of ozone. The court directed EPA to release the final list by the end of April 2018.[3] That crucial step begins the process of cleaning up ozone to meet the current, more protective national air quality standard.

Regional differences. California retains its historic distinction with 11 of the 25 most polluted cities in that state. The Southwest continues to fill most of the remaining slots, with seven of the 25 most ozone-polluted. Texas has two cities in the 25 most-polluted list: Houston and Dallas-Fort Worth. Colorado has two, as well: Denver and Fort Collins. Arizona, Nevada and Utah each have one.

Only six cities of the most polluted are east of the Mississippi River. Three in the Northeast are on the list: New York City, Philadelphia, and Hartford, CT. The Midwest has two: Chicago and Sheboygan, WI. Atlanta is the only southern city to reach the list.

Many of those cities experienced high-ozone days from polluted air blown into their state from upwind sources, as well. Fairfield, CT, part of the New York City metropolitan area, recorded the most high ozone days on average in the eastern half of the nation,

largely driven by ozone blown in from outside the metro area. Hartford, CT, and Sheboygan, WI, both also receive high levels of ozone from upwind sources.

Those rankings reflect trends seen in the past three reports, where increased oil and gas extraction 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. The impact of climate shows up even in some cities with lowest weighted averages ever. For example, Denver and Las Vegas experienced more high-ozone days in 2016 than in 2015 or 2014, just not as many as in 2013, keeping their 2014-2016 three-year average at its lowest.

Year-Round Particles

Eighteen 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 2014-2016. The 11 most polluted remain the only metropolitan areas in the nation that fail to meet the official U.S. national limits on annual fine particle pollution. However, all 25 failed to meet the more protective standards established by the World Health Organization.[4]

Eleven of 25 most-polluted cities reached or tied their lowest average levels of particle pollution.

Twelve of 25 most-polluted cities reached or tied their lowest average levels of particle pollution: Fresno-Madera, CA; Modesto-Merced, CA; Cleveland; Philadelphia; Indianapolis; Detroit; Houston; Cincinnati; Johnstown-Somerset, PA; Louisville; Knoxville, TN; and Little Rock, AR.

Six others improved over the 2017 report: Visalia-Porterfield-Hanford, CA; Bakersfield, CA; El Centro, CA; San Jose-San Francisco; San Luis Obispo, CA; and Atlanta.

Fairbanks, AK, moved to the most-polluted city for the first time. Previously ranked as #17 most polluted, Fairbanks' improved monitoring in the borough now identifies that this problem is more severe than previously known. Six other cities in the 25 most polluted had higher particle levels year-round: Los Angeles; Pittsburgh; Lancaster, PA; Birmingham, AL; Harrisburg-York-Lebanon, PA; and Las Vegas.

Regional differences. Long-ranked on the short-term particle list, Fairbanks' new placement atop the year-round list shows the impact of sustained use of its chief source of particle pollution—burning of wood and other solid fuels to heat homes. They are making steps to change out old, dirty stoves for cleaner ones. Fairbanks is in a unique situation where wood- and solid-fuel-burning comprise the biggest sources and where the presence of snow can create weather inversions that trap particles in place.

Eight of the top 11 most-polluted cities are in California, including several in the Central Valley, where particles produced by agricultural production and transportation can easily be trapped by the physical terrain. Progress there is due to the aggressive work of the state and local officials.

A large concentration of cities with high levels also exists in the states lining the Great Lakes, especially Pennsylvania, Ohio, Indiana, and Michigan. (If it had data, possibly Illinois would be in that list). While all these cities have levels that meet the national air quality standard in the U.S., all have levels above the limit recommended by the World Health Organization. Much of their high particle levels likely come from coal-fired power plants, which line the region, as well as diesel emissions from transportation sources including heavy-duty trucks, rail and marine fleets using the Lakes for transport. Others in Kentucky, Tennessee, Georgia and Arkansas also had particles from power plants as a significant source.

Data remain missing on particle pollution in all of Illinois as it has since our 2014 report covering 2010-2012 data. That means that large cities, including Chicago and St. Louis (which is missing suburban counties in Illinois), have not known how much particulate matter they are breathing for four years. Data are now missing from all of Mississippi and two large counties in California: Los Angeles County and San Bernardino County. The new information on the extremely high levels in Fairbanks shows how important these data are to protecting health.

Short-Term Particle Pollution

Twenty cities among the 25 most-polluted cities experienced fewer days when particle pollution levels spiked, a positive turnaround from the 2017 report when eight had reached their highest number of episodes ever.

One city that did better in 2014-2016 is **Bakersfield, CA, which retains its ranking as the most polluted city** for particle pollution spikes. Bakersfield has held this position for all but two years since the 2010 report, covering data from 2006-2008.

Four of the 20 cities improved to their fewest days ever on average of high particles in 2014-2016: Fresno- Madera, CA; Salt Lake City; Logan, UT; and Eugene, OR. Also improving over the 2017 report were: San Jose-San Francisco; Los Angeles; Phoenix; Denver; Visalia-Porterfield, CA; Fairbanks, AK; Modesto-Merced, CA; Missoula, MT; Lancaster, PA; Anchorage, AK; South Bend, IN; Yakima, WA; Sacramento, CA; Reno-Carson City, NV; and Harrisburg-York-Lebanon, PA.

Four cities suffered more spikes in particles in 2014-2016: El Centro, CA; Pittsburgh; Seattle; and Salinas, CA. One city—Indianapolis—remained the same.

Regional differences. Western states, especially California, but also Utah, Montana, Arizona, Colorado and Washington have multiple or large cities on this list. Some reflect ongoing experiences with emissions from high emitting sources trapped by weather inversions that do not allow them to blow away, including, for example, Bakersfield, Visalia, Fresno and Modesto-Merced. Others, like some in California and Missoula, MT, reflect increased wildfires built from the ongoing low rainfall and climate impacts. Several include areas with high use of wood-burning or solid-fuel-burning stoves, including two cities in Alaska—Fairbanks and Anchorage—as well as Logan, UT, and Eugene, OR.

In the eastern states, most of the cities listed here are cities with high year-round levels as well, with three cities in Pennsylvania and two in Indiana on this list. Weather patterns here, too, may have helped build up particles to unhealthy short-term levels.

Data remain missing for Illinois and Mississippi here as well. Most of the other states have at least some data.

Cleanest Cities

Six cities ranked on all three cleanest-cities lists for ozone, year-round particle pollution and short-term particle pollution. They had zero high ozone or high particle pollution days, and were among the 25 cities with the lowest year-round particle levels. Four have repeated their ranking on this list, but two join this list for the first time. Listed alphabetically below, these six cities are:

- Bellingham, WA
- Burlington-South Burlington, VT
- Casper, WY
- 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:

- Cape Coral-Fort Myers-Naples, FL
- Elmira-Corning, NY
- Grand Island, NE
- Homosassa Springs, FL
- Lakeland-Winter Haven, FL
- North Port-Sarasota, FL
- Orlando-Deltona-Daytona Beach, FL
- Pittsfield, MA
- Pueblo-Cañon City, CO
- Sierra Vista-Douglas, AZ
- Syracuse-Auburn, NY

Eighteen 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:

- Bangor, ME
- Bowling Green-Glasgow, KY
- Dothan-Enterprise-Ozark, AL
- Eau Claire-Menomonie, WI
- Fayetteville-Lumberton-Laurinburg, NC
- Fayetteville-Springdale-Rogers, AR-MO
- Florence, SC
- Fort Smith, AR-OK
- Gadsden, AL
- Greenville-Washington, NC
- La Crosse-Onalaska, WI-MN
- Lafayette-Opelousas-Morgan City, LA
- McAllen-Edinburg, TX
- Monroe-Ruston-Bastrop, LA
- Rome-Summerville, GA
- Springfield-Branson, MO
- Tuscaloosa, AL
- Waterloo-Cedar Falls, IA

Two cities ranked on both lists for ozone and year-round particle pollution levels. Cheyenne, WY, 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

The **"State of the Air 2018" shows that too many people in the United States live where the air is unhealthy for them to breathe.**

- **More than four in 10 people (41.4 percent) in the United States live in counties that have unhealthful levels of either ozone or particle pollution.** More than 133.9 million Americans live in 215 counties where they breathe unhealthful levels of air pollution in the form of either ozone or short-term or year-round levels of particles.
- More people suffered unhealthy air in 2014-2016 than in the years covered by the 2017 report (2013-2015), when the total was only 125 million. However, these are still far below the 166 million in the years covered in the 2016 report (2012-2014).
- **This change reflects continued challenges in dealing with the impacts of the changing climate, as well as long-term 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 added days of high ozone.
- **Nearly four in 10 (39.9 percent) of the people in the United States live in areas with unhealthy levels of ozone pollution,** about 12.4 million more people in 2014-2016 than in the previous report. Approximately 128.9 million people live in 185 counties that earned an F for ozone this year's report, significantly more than the approximately 116.5 million who lived in counties earning an F in 2013-2015.
- **More than 9.8 million people (3 percent) suffered from unhealthy year-round levels of particle pollution** in 2014-2016. These people lived in 16 counties where the annual average concentration of particle pollution was too high. Although still too

Nearly 7.7 million people in the U.S. live in counties where the outdoor air failed all three tests—but the real number is likely much higher.

many, fewer people faced those dangerous year-round concentrations during this period than in last year's report. That report covered 2013-2015 when approximately 18 million people lived where monitors recorded unhealthy levels of year-round particle pollution. In this year's report, the lower tally of populations exposed is likely due to missing population data from two counties with incomplete data—Los Angeles County and San Bernardino County in California. Adding in those two would increase the total by 12 million.

- **More than one in 10 people in the United States—more than 35.1 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 occurred in 2014-2016 than in the previous report. The total population exposed to too-many episodes of high particle pollution dropped slightly to 35.1 million, fewer than the 43.0 million in 2013-2015 and well below the 45.0 million in the 2016 report.
- **Nearly 7.7 million people (2.4 percent) live in 10 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution** in 2014-2016. This is far fewer than the 18 million people who lived in such counties in the years covered in the 2017 report. However, two California counties that would likely have been in this group lacked complete data; had data been available for them, the total population with unhealthy air for all three would have risen to more than 19 million. In addition, data remain missing for particle pollution for all of Illinois and Mississippi.

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 and two large counties in California, the numbers of people living in counties that fail all three tests may be much higher.

- **Older and Younger**—Nearly 18.3 million adults age 65 and over and more than 31.3 million children under 18 years old live in counties that received an F for at least one pollutant. More than 1 million seniors and more than 2 million children live in counties failing all three tests.
- **People with Asthma**—More than 2.5 million children and more than 9 million adults with asthma live in counties of the United States that received an F for at least one pollutant. More than 157,000 children and nearly 471,000 adults with asthma live in counties failing all three tests.
- **Chronic Obstructive Pulmonary Disease (COPD)**—Nearly 6.0 million people with COPD live in counties that received an F for at least one pollutant. Nearly 277,000 people with COPD live in counties failing all three tests.
- **Lung Cancer**—Nearly 72,900 people with lung cancer live in counties that received an F for at least one pollutant. More than 3,500 people with lung cancer live in counties failing all three tests.
- **Cardiovascular Disease**—Nearly 8 million people with cardiovascular diseases live in counties that received an F for at least one pollutant; more than 394,000 people live in counties failing all three tests.
- **Diabetes**—More than 2.1 million people with diabetes live in counties that received an F for either short-term or year-round particle pollution; nearly 627,000 live in counties failing both tests. Having diabetes increases the risk of harm from particle pollution.
- **Poverty**—Nearly 18.3 million people with incomes meeting the federal poverty definition live in counties that received an F for at least one pollutant. More than 1.3 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.

Six threats to the nation's air quality

Our nation has made significant strides in cleaning up our air, as shown by this report over the past 19 years. 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.

Unfortunately, EPA Administrator Scott Pruitt, supported by the President, has taken many steps to roll back or create loopholes in many of the protections in place under the Clean Air Act in the past year. Members of Congress, governors and state leaders all have a key role to play, and while some are supportive, others are not.

Below are six key threats to the nation's progress toward cleaner, healthier air. The Lung Association continues to fight for healthy air and oppose these threats.

Threat 1: Weakening the Clean Air Act

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

The Clean Air Act remains 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 Act, Congress directed EPA and each state to take steps to clean up the air. For 19 years, the "State of the Air" report has chronicled the slow but steady improvement in the nation's air quality thanks to the Clean Air Act—a trend that continues even as climate change makes pollution cleanup more difficult.

Now, that positive trend is threatened, and not just by the impacts of climate change. Unfortunately, some in Congress seek changes to the Clean Air Act that would dismantle key provisions of the law and threaten the progress made over nearly five decades. Undermining the Clean Air Act itself is one of the fundamental goals of polluters and their allies. They have repeatedly challenged Clean Air Act provisions in court, and have repeatedly lost, so now they seek to weaken the law. Recent proposed efforts include exempting certain polluting facilities from some emissions controls, delaying science-based updates to air pollution standards, and undermining public health as the core premise of the Act's key pollution limits. To protect the lives and health of millions of Americans, the Lung Association calls on Congress to reject attempts to weaken the Clean Air Act and make certain the law remains strong, fully implemented and fully enforced.

Threat 2: Repealing plans to reduce carbon pollution from power plants

The Lung Association opposes efforts to repeal the Clean Power Plan and will continue to push for a system-wide reduction in carbon dioxide emissions from power plants.

To protect public health, the nation must act to fight climate change; core to that is cutting carbon pollution. Unfortunately, the current EPA has taken steps that would dismantle our nation's first and only federal plan to limit carbon pollution from power plants.

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. The increased ozone problems reflected in this year's report came in large part because 2016 was the second warmest year in U.S. history. Climate change also leads to particle-pollution from increased droughts and wildfires, leading to many of the high particle pollution days recorded in 2014-2016 also documented in this report.

Power plants comprise the largest industrial-scale source of carbon pollution in the United States. The electric sector contributed 35 percent of all energy-related carbon dioxide (CO_2) emissions in 2015.[5] Taking system-wide steps to reduce carbon pollution from electricity generation will also reduce ozone and particle pollution from these plants at the same time. Despite that, in 2017, EPA Administrator Pruitt proposed to repeal the Clean Power Plan, the only nationwide strategic approach to cutting carbon pollution from these plants.

Rolling back limits on emissions from oil and gas operations means more people will be forced to breathe cancer-causing and other toxic gases that also worsen ozone and climate change.

Adopted in 2015, the Clean Power Plan delivers a flexible, practical toolkit for 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 these tools. They can choose to require cleaner fuels for existing utilities, improve energy efficiency, produce more clean energy or partner with other states to jointly reduce carbon pollution.

Reducing carbon to tackle climate change is only one of the benefits from the Clean Power Plan. Steps to reduce carbon using the tools in the Clean Power Plan also reduce other air pollutants that themselves worsen asthma, cause cardiovascular harm and cause premature deaths. EPA's original analysis estimated that these co-benefits can prevent up to 3,600 premature deaths and up to 90,000 asthma attacks in children in 2030.[6] In an updated analysis published along with EPA's proposal to repeal the Plan, the Agency projected even greater benefits from putting the Plan in place, including preventing up to 4,500 premature deaths in 2030.[7]

The Clean Air Act requires that EPA act to reduce carbon pollution, which means that EPA must clean up carbon pollution from power plants. Unfortunately, Administrator Pruitt has kicked off a very long, slow process to collect information on possible alternative approaches, rather than moving quickly to propose a replacement plan. Worse, EPA has signaled a preferred replacement plan that, if adopted, could likely result in more deadly pollution from power plants, not less. Not only would the plan have less impact on reducing carbon pollution, independent scientists found that this type of approach could actually increase emissions of at least one other dangerous air pollutant and, with that, increase the risk of premature deaths and asthma attacks.[8]

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. The Lung Association will continue to oppose efforts to repeal the Clean Power Plan and push for a system-wide reduction in carbon dioxide emissions from power plants and other sources.

Threat 3: Removing limits on emissions from 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. For the last few years, "State of the Air" has reported elevated levels of unhealthy ozone in places where oil and gas production has expanded, even in largely rural counties in the West. Despite this, EPA has recently proposed steps to weaken or roll back health-protective standards the Agency had adopted in 2016 to reduce harmful emissions of these gases from new and modified sources within the oil and natural gas industry.[9]

Nor does EPA offer any protection from emissions from the existing oil and gas infrastructure. EPA even backed off collecting data 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, and EPA requested it in 2016. The industry objected, and in March 2017, EPA withdrew its request for updated information on their facilities.

All of 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. EPA's continued rollback of these protections reflects a much higher priority on eliminating so-called "burdensome regulations" on polluters than protecting the health of the American people.[10]

EPA's proposed glider loophole exempts trucks that emit up to 450 times more than other diesel trucks from having to clean up.

Threat 4: Opening doors for more polluting trucks and cars

Dirtiest diesel. Over many years, heavy-duty diesel trucks standards have become much tighter, reducing emissions recognized as causing cancer, heart attacks, asthma attacks and premature death. Thanks to the long-adopted requirements for cleaner fuels and engines, people living near heavily traveled highways and busy city streets have had to breathe less of these dangerous emissions. But now, that progress is threatened by a loophole that the current EPA seeks to open.

The loophole benefits "gliders." "Gliders" is the name used for trucks that embed an old, dirty engine in a new truck body. Originally conceived to help truck owners whose truck body had been damaged, but whose engine remained intact, the use of gliders has expanded to become a cottage industry repackaging old, polluting diesel engines in new truck bodies. One EPA study found that these engines produced emissions up to 450 times higher than a comparable 2014 or 2015 model year truck.[11] In 2016, EPA put in place a new rule to require that these glider trucks meet the same limits on emissions as all new trucks, a position that the trucking industry fully supported.

However, in 2017, EPA proposed a rollback of that requirement that would create a loophole for these dirtier trucks, despite broad opposition from the rest of the trucking industry.[12] The Lung Association spoke up to oppose this in the public hearing and in comments with eleven other health and medical groups, and continues to oppose this loophole.[13]

As the world learned from the Volkswagen diesel cheating scandal, even new diesels must be subject to strict oversight and enforcement to ensure that tighter standards are met.[14]

More polluting cars. Administrator Pruitt has also signaled that EPA will examine ways to block or roll back stronger limits on emissions from cars, SUVs and personal trucks. In 2012, EPA and the Department of Transportation developed new national standards that would cut 6 billion metric tons of greenhouse gas emissions for these vehicles for model years 2017 through 2025. Automobile industry representatives had called on Pruitt to withdraw these standards in February 2017,[15] despite having supported them previously.[16] On April 2, 2018, Pruitt announced that EPA and the Department of Transportation would proposed new rules to weaken these standards and threaten California's authority to set tighter standards.[17]

In addition to maintaining their standards through 2025, California is considering setting stronger standards for 2026 and beyond, and Pruitt has sent signals opposing the state's action.[18] Under the Clean Air Act, California has the right to establish its own emission standards for cars and trucks. Other states also have the option of adopting California's standards, and many states have done so. California's ability to set more protective emissions standards has helped drive lifesaving reductions in harmful pollution from vehicles nationwide; maintaining this authority is critical.

The Trump Administration's proposed budget would greatly reduce the ability of EPA to protect public health.

Threat 5: Cutting funding and expertise needed to clean up the air

The Clean Air Act set up smart, open processes for protecting Americans from air pollution, which have enabled the U.S. to reduce some of the most common pollutants by more than 70 percent, as shown in Figure 1. Still, these processes only work if EPA has the funding, staffing and scientific advisors it needs to enable them to implement and enforce the law. The Trump Administration proposed a budget that would greatly reduce the ability of EPA to protect public health, including slashing overall funding for the agency and reducing grants to support the work of state and local agencies and tribes to implement the requirements of the Clean Air Act and other critical laws. The proposed budget for FY 2019 claims to put a priority on "improving air quality" but would cut EPA funding for that work significantly.[19]

The Lung Association calls on Congress to ensure that EPA has sufficient funding to protect public health with the full range of programs, including state, local and tribal grants.

EPA has also taken steps to remove independent science advisors from key advisory committees.

EPA is stacking the deck to deny the scientific evidence.

Threat 6: Stacking the deck to deny the scientific evidence

A core driver of the success of the Clean Air Act is its requirement that up-to-date science be the basis for decisions and actions to protect public health. This requires ensuring that independent expert scientists regularly analyze up-to-date, peer-reviewed research and then provide their conclusions and perspectives to the EPA staff scientists and the administrator. Unfortunately, the current EPA has taken steps to remove independent science advisors from key advisory committees, including the Clean Air Scientific Advisory Committee, and replace them with people paid by polluting industries.[20] A group of physicians, scientists and professional associations are challenging EPA's decision to remove experts who have received funding from EPA from key advisory committees.[21]

Administrator Pruitt has also signaled that the agency will restrict the research that it will allow scientists to consider, proposing to eliminate major scientific research that supports strong clean air safeguards.[22] Some members of Congress have proposed similar limitations that would block EPA from using studies that cannot make all the underlying data fully open for public review. Many databases scientists use today do allow unrestricted access to the information, but others do not, because of patient confidentiality for subjects included in the research. Such arguments have been raised before and resolved, and these studies were established as core evidence of the harm from air pollution.[23] Blocking the use of key studies that have been through multiple independent reviews and show widespread harm from outdoor air pollutants introduces dangerous bias that could limit the evidence, risking weaker air pollution safeguards.

The Lung Association calls on EPA to return to its historic practice of appointing qualified, independent scientists to these review committees and for accepting peer-reviewed research without artificial limitations

What You Can Do

We need your help in the fight for healthy air! You can do a great deal to help reduce air pollution outdoors just by taking a few simple steps. 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 needs resources to make sure that the pollution is cleaned up, as do the states, local governments and tribes.

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 by submitting them 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.

Thank you for being part of the fight for healthy air.

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3. U.S. District Court for the Northern District of California. Case 4:17-cv-06936-HSG, March 12, 2018. There is one exception to the end of April deadline: The court directed EPA to make its decision on the status of one city, San Antonio, TX, by July 11, 2018.
4. Hamra GB, Guha N, Cohen A, Laden F, Raaschou-Nielsen O, Samet JM, Vineis P, Forastiere F, Saldiva P, Yorifuji T, and Loomis D. Outdoor particulate matter exposure and lung cancer: A systematic review and meta-analysis. *Environ Health Perspect.* 2014: 122: 906-911.
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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)	5,838,887	1,618,452	4,132,854	49,711	5,611,034	6,947,927	11,472,652	18,645,556	12,758,026	84,023,074	268
Grade B (0.3-0.9)	3,120,840	826,073	2,331,733	26,803	2,918,331	3,479,625	5,876,976	9,930,549	6,329,565	44,017,192	140
Grade C (1.0-2.0)	2,304,833	636,670	1,570,688	19,205	2,095,595	2,679,959	4,728,928	7,950,926	4,650,257	34,262,593	71
Grade D (2.1-3.2)	600,110	152,752	395,718	4,598	542,585	702,391	1,043,116	1,944,326	1,315,027	8,747,325	24
Grade F (3.3+)	2,244,178	660,113	1,356,777	16,119	1,875,389	2,604,191	5,381,047	8,652,382	4,633,221	35,134,372	53
National Population in Counties with $PM_{2.5}$ Monitors	15,358,839	4,215,934	10,683,562	127,930	14,202,633	17,859,652	30,913,020	51,195,138	32,310,476	223,962,358	638

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	11,836,303	3,251,732	8,387,271	99,345	11,096,141	13,746,260	23,311,877	38,892,832	24,788,791	171,144,645	481
Fail	635,718	193,480	405,687	4,898	548,509	755,071	1,643,847	2,477,682	1,388,721	9,812,136	16
National Population in Counties with $PM_{2.5}$ Monitors	15,358,839	4,215,934	10,683,562	127,930	14,202,633	17,859,652	30,913,020	51,195,138	32,310,476	223,962,358	638

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)	1,708,440	473,478	1,252,028	1,727,328	3,609,433	5,763,909	3,976,897	25,488,289	201
Grade B (0.3-0.9)	2,489,383	653,229	2,007,393	2,693,111	4,855,195	8,003,172	6,249,881	37,363,241	166
Grade C (1.0-2.0)	1,908,891	515,408	1,406,636	1,843,784	3,339,357	6,013,494	4,083,522	26,358,211	145
Grade D (2.1-3.2)	1,510,007	386,391	1,046,613	1,359,956	2,370,710	4,477,135	2,972,264	19,953,294	71
Grade F (3.3+)	8,683,205	2,450,851	5,736,555	7,652,747	17,634,135	30,145,325	17,572,621	128,874,081	185
National Population in Counties with Ozone Monitors	16,477,447	4,524,016	11,592,855	15,469,619	32,168,386	54,929,852	35,288,481	240,472,168	804

Note: *The State of the Air 2018* covers the period 2014-2016. The Methodology section on page 51 provides a full discussion of the methodology.

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

2018 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	884,788	258,054	91,719	19,840	48,388	25,731	377	36,967	57,988	190,993
2	Visalia-Porterville-Hanford, CA	610,222	184,746	64,889	14,204	32,845	17,612	260	25,364	39,595	135,634
3	Fresno-Madera, CA	1,134,612	323,032	136,983	24,836	62,984	34,873	482	50,921	78,731	275,160
4	Fairbanks, AK	100,605	24,518	8,884	1,975	6,611	4,353	55	3,893	5,074	8,144
5	Modesto-Merced, CA	810,232	227,322	98,506	17,477	45,364	25,251	345	37,012	57,294	131,330
6	San Jose-San Francisco-Oakland, CA	8,751,807	1,874,550	1,250,653	144,121	539,410	309,563	3,721	460,334	708,929	857,722
7	Los Angeles-Long Beach, CA	18,688,022	4,353,354	2,444,450	334,698	1,119,385	628,200	7,942	925,418	1,433,318	2,788,201
8	Salt Lake City-Provo-Orem, UT	2,514,748	765,804	241,347	44,770	145,432	66,492	654	91,659	122,337	234,142
9	El Centro, CA	180,883	51,832	22,953	3,985	10,037	5,646	77	8,295	12,757	40,601
10	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,635,228	504,285	506,493	44,123	225,518	163,462	1,709	214,263	247,735	297,285
11	Logan, UT-ID	136,159	42,104	13,031	2,559	7,903	3,536	39	4,819	6,215	16,448
12	Missoula, MT	116,130	22,378	16,999	1,297	7,948	6,368	62	6,756	6,585	17,206
13	Lancaster, PA	538,500	128,457	92,089	11,288	43,467	29,881	347	39,063	45,440	56,082
14	Anchorage, AK	402,557	102,330	40,390	8,243	26,246	17,868	220	16,970	21,850	30,749
15	Seattle-Tacoma, WA	4,684,516	1,012,980	653,868	74,047	355,494	211,282	2,637	274,294	335,033	456,972
16	Salinas, CA	435,232	114,665	55,240	8,816	24,946	13,945	186	20,462	31,599	53,898
17	South Bend-Elkhart-Mishawaka, IN-MI	725,087	177,793	115,642	14,872	56,622	46,031	496	55,932	63,528	105,563
17	Yakima, WA	249,636	74,588	33,451	5,452	16,898	10,109	141	13,327	15,999	44,819
19	Sacramento-Roseville, CA	2,567,451	595,320	389,039	45,770	155,308	91,493	1,090	137,379	209,852	365,816
20	Phoenix-Mesa-Scottsdale, AZ	4,661,537	1,138,270	703,512	91,762	331,403	233,308	2,213	311,232	373,254	685,602
21	Indianapolis-Carmel-Muncie, IN	2,386,199	584,597	323,083	47,845	183,229	142,178	1,668	172,926	200,891	314,989
22	Harrisburg-York-Lebanon, PA	1,252,820	273,228	215,572	24,009	104,213	72,168	809	94,237	109,710	118,036
22	Reno-Carson City-Fernley, NV	613,608	131,267	107,052	8,531	38,542	35,393	319	47,039	56,833	74,027
24	Denver-Aurora, CO	3,470,235	803,223	427,601	64,700	234,863	112,500	1,483	164,390	167,799	335,377
24	Eugene, OR	369,519	69,498	68,269	3,883	31,356	19,904	198	25,929	28,502	66,339

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 2016 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 2016 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 2014.
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 $PM_{2.5}$)

2018 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	Fairbanks, AK	100,605	24,518	8,884	1,975	6,611	4,353	55	3,893	5,074	8,144
2	Visalia-Porterville-Hanford, CA	610,222	184,746	64,889	14,204	32,845	17,612	260	25,364	39,595	135,634
3	Bakersfield, CA	884,788	258,054	91,719	19,840	48,388	25,731	377	36,967	57,988	190,993
4	Los Angeles-Long Beach, CA	18,688,022	4,353,354	2,444,450	334,698	1,119,385	628,200	7,942	925,418	1,433,318	2,788,201
5	Fresno-Madera, CA	1,134,612	323,032	136,983	24,836	62,984	34,873	482	50,921	78,731	275,160
6	Modesto-Merced, CA	810,232	227,322	98,506	17,477	45,364	25,251	345	37,012	57,294	131,330
7	El Centro, CA	180,883	51,832	22,953	3,985	10,037	5,646	77	8,295	12,757	40,601
8	Lancaster, PA	538,500	128,457	92,089	11,288	43,467	29,881	347	39,063	45,440	56,082
8	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,635,228	504,285	506,493	44,123	225,518	163,462	1,709	214,263	247,735	297,285
10	Cleveland-Akron-Canton, OH	3,483,311	748,251	610,191	51,396	267,821	244,131	2,378	272,485	312,974	486,591
10	San Jose-San Francisco-Oakland, CA	8,751,807	1,874,550	1,250,653	144,121	539,410	309,563	3,721	460,334	708,929	857,722
12	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,179,357	1,583,881	1,110,738	135,570	550,637	380,103	4,487	491,686	572,192	908,613
13	Indianapolis-Carmel-Muncie, IN	2,386,199	584,597	323,083	47,845	183,229	142,178	1,668	172,926	200,891	314,989
14	Detroit-Warren-Ann Arbor, MI	5,318,653	1,185,725	821,616	105,502	454,845	366,206	3,417	401,725	455,949	796,295
15	Birmingham-Hoover-Talladega, AL	1,361,299	311,799	215,600	41,149	102,388	100,317	911	128,524	153,652	194,319
15	Harrisburg-York-Lebanon, PA	1,252,820	273,228	215,572	24,009	104,213	72,168	809	94,237	109,710	118,036
15	Houston-The Woodlands, TX	6,972,374	1,860,373	739,774	147,214	389,479	241,094	3,688	369,692	550,064	1,009,619
18	Cincinnati-Wilmington-Maysville, OH-KY-IN	2,224,231	529,256	320,887	37,633	172,862	154,509	1,637	170,157	189,471	275,394
18	Johnstown-Somerset, PA	209,793	39,558	44,930	3,476	17,863	13,162	136	17,886	20,711	29,918
18	San Luis Obispo-Paso Robles-Arroyo Grande, CA	282,887	50,703	53,512	3,898	18,338	11,297	121	17,180	25,754	29,345
21	Louisville/Jefferson County—Elizabethtown—Madison, KY-IN	1,510,945	346,116	226,835	27,393	132,104	125,709	1,337	147,971	148,437	195,079
22	Atlanta—Athens-Clarke County—Sandy Springs, GA	6,451,262	1,606,983	760,202	142,134	420,082	367,638	4,180	441,138	572,742	864,419
22	Knoxville-Morristown-Sevierville, TN	1,117,758	234,117	200,825	22,801	96,989	92,906	844	106,997	117,132	168,544
24	Las Vegas-Henderson, NV-AZ	2,404,336	551,082	374,922	36,391	150,570	129,535	1,242	168,782	205,979	354,741
24	Little Rock-North Little Rock, AR	905,847	213,354	134,142	17,186	58,559	64,878	714	85,561	90,183	138,834

Notes:

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2. **Total Population** represents the at-risk populations for all counties within the respective Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
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8. **Lung cancer** estimates are the number of new cases diagnosed in 2014.
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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

2018 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	18,688,022	4,353,354	2,444,450	334,698	1,119,385	628,200	7,942	1,433,318
2	Bakersfield, CA	884,788	258,054	91,719	19,840	48,388	25,731	377	57,988
3	Visalia-Porterville-Hanford, CA	610,222	184,746	64,889	14,204	32,845	17,612	260	39,595
4	Fresno-Madera, CA	1,134,612	323,032	136,983	24,836	62,984	34,873	482	78,731
5	Sacramento-Roseville, CA	2,567,451	595,320	389,039	45,770	155,308	91,493	1,090	209,852
6	San Diego-Carlsbad, CA	3,317,749	728,325	446,038	55,996	201,462	112,570	1,413	254,999
7	Modesto-Merced, CA	810,232	227,322	98,506	17,477	45,364	25,251	345	57,294
8	Phoenix-Mesa-Scottsdale, AZ	4,661,537	1,138,270	703,512	91,762	331,403	233,308	2,213	373,254
9	Redding-Red Bluff, CA	242,907	53,835	48,295	4,139	15,160	9,825	103	22,749
10	New York-Newark, NY-NJ-CT-PA	23,689,255	5,145,013	3,539,645	458,494	1,721,736	1,038,329	13,759	1,826,564
11	Houston-The Woodlands, TX	6,972,374	1,860,373	739,774	147,214	389,479	241,094	3,688	550,064
12	Las Vegas-Henderson, NV-AZ	2,404,336	551,082	374,922	36,391	150,570	129,535	1,242	205,979
13	San Jose-San Francisco-Oakland, CA	8,751,807	1,874,550	1,250,653	144,121	539,410	309,563	3,721	708,929
14	Denver-Aurora, CO	3,470,235	803,223	427,601	64,700	234,863	112,500	1,483	167,799
15	El Centro, CA	180,883	51,832	22,953	3,985	10,037	5,646	77	12,757
16	Dallas-Fort Worth, TX-OK	7,673,305	2,016,215	862,921	159,749	432,736	273,449	4,058	624,821
17	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA	9,665,892	2,205,657	1,282,504	199,530	692,877	423,744	5,526	762,909
18	Salt Lake City-Provo-Orem, UT	2,514,748	765,804	241,347	44,770	145,432	66,492	654	122,337
19	Fort Collins, CO	339,993	68,025	50,096	5,479	23,835	11,703	145	17,434
20	Hartford-West Hartford, CT	1,476,637	301,063	243,852	33,160	123,604	69,574	887	115,420
21	Chico, CA	226,864	45,489	40,815	3,497	14,266	8,676	96	19,679
22	Chicago-Naperville, IL-IN-WI	9,882,634	2,300,124	1,348,267	170,477	683,560	473,577	6,620	775,469
23	Atlanta--Athens-Clarke County--Sandy Springs, GA	6,451,262	1,606,983	760,202	142,134	420,082	367,638	4,180	572,742
24	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,179,357	1,583,881	1,110,738	135,570	550,637	380,103	4,487	572,192
24	Sheboygan, WI	115,427	25,986	19,797	2,159	7,662	5,385	68	9,052

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 2016 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 2016 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 $PM_{2.5}$)

2018 Rank[1]	County	ST	Total Population[2]	At-Risk Groups: 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]	High $PM_{2.5}$ Days in Unhealthy Ranges, 2014–2016: Weighted Avg.[12]	Grade[13]
1	Kern	CA	884,788	258,054	91,719	19,840	48,388	25,731	377	36,967	57,988	190,993	40.5	F
2	Kings	CA	149,785	40,935	14,539	3,147	8,340	4,289	64	6,055	9,565	23,247	32.8	F
3	Fresno	CA	979,915	280,490	116,071	21,565	54,217	29,841	417	43,457	67,291	245,131	30.2	F
4	Fairbanks North Star Borough	AK	100,605	24,518	8,884	1,975	6,611	4,353	55	3,893	5,074	8,144	24.8	F
5	Stanislaus	CA	541,560	147,117	69,159	11,311	30,793	17,381	230	25,639	39,572	77,913	19.0	F
6	Madera	CA	154,697	42,542	20,912	3,271	8,768	5,032	66	7,464	11,440	30,029	17.5	F
7	Merced	CA	268,672	80,205	29,347	6,166	14,571	7,870	114	11,373	17,722	53,417	14.5	F
7	San Joaquin	CA	733,709	201,363	90,581	15,481	41,538	23,267	312	34,236	53,020	105,268	14.5	F
9	Ravalli	MT	42,088	8,234	10,357	477	2,984	2,842	22	3,442	3,248	5,773	14.2	F
10	Riverside	CA	2,387,741	613,935	331,531	47,201	138,861	79,941	1,015	118,793	182,153	359,774	13.0	F
11	Salt Lake	UT	1,121,354	313,040	113,730	18,301	67,241	31,192	292	43,238	57,854	104,297	12.5	F
12	Shoshone	ID	12,452	2,477	2,834	200	932	645	6	954	1,099	2,319	12.3	F
13	Lemhi	ID	7,723	1,425	2,254	115	587	443	4	687	770	1,351	12.0	F
14	Imperial	CA	180,883	51,832	22,953	3,985	10,037	5,646	77	8,295	12,757	40,601	11.2	F
14	Plumas	CA	18,627	3,189	4,883	245	1,267	902	8	1,446	2,118	2,312	11.2	F
16	Los Angeles	CA	10,137,915	2,253,113	1,308,573	173,226	614,420	341,446	4,307	500,783	777,378	1,629,450	10.0	F
17	Lincoln	MT	19,259	3,535	5,143	205	1,399	1,373	10	1,688	1,591	3,550	9.7	F
18	Tulare	CA	460,437	143,811	50,350	11,057	24,506	13,323	196	19,309	30,030	112,387	9.5	F
19	Lewis and Clark	MT	67,282	14,538	11,940	842	4,592	4,030	36	4,500	4,372	6,858	8.8	F
20	Allegheny	PA	1,225,365	232,012	220,511	20,388	105,401	72,243	789	94,220	109,638	137,017	8.5	F
21	Cache	UT	122,753	37,673	11,165	2,202	7,063	3,042	32	4,117	5,403	15,209	8.2	F
22	San Bernardino	CA	2,140,096	573,306	237,432	44,077	121,553	65,711	910	95,271	149,172	369,012	7.8	F
22	Missoula	MT	116,130	22,378	16,999	1,297	7,948	6,368	62	6,756	6,585	17,206	7.8	F
24	Inyo	CA	18,144	3,720	4,166	286	1,170	798	8	1,260	1,858	2,184	7.5	F
24	Lancaster	PA	538,500	128,457	92,089	11,288	43,467	29,881	347	39,063	45,440	56,082	7.5	F

Notes:

1. Counties are ranked by weighted average. See note 12 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 2016 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 2016 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 2014.
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 (2014-2016), 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 $PM_{2.5}$)

2018 Rank[1]	County	ST	Total Population[2]	At-Risk Groups									$PM_{2.5}$ Annual, 2014–2016	
				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/ Fail[13]
1	Fairbanks North Star Borough	AK	100,605	24,518	8,884	1,975	6,611	4,353	55	3,893	5,074	8,144	23.0	Fail
2	Kings	CA	149,785	40,935	14,539	3,147	8,340	4,289	64	6,055	9,565	23,247	22.0	Fail
3	Kern	CA	884,788	258,054	91,719	19,840	48,388	25,731	377	36,967	57,988	190,993	18.4	Fail
4	Tulare	CA	460,437	143,811	50,350	11,057	24,506	13,323	196	19,309	30,030	112,387	16.2	Fail
5	Plumas	CA	18,627	3,189	4,883	245	1,267	902	8	1,446	2,118	2,312	15.0	Fail
6	Riverside	CA	2,387,741	613,935	331,531	47,201	138,861	79,941	1,015	118,793	182,153	359,774	14.5	Fail
7	Fresno	CA	979,915	280,490	116,071	21,565	54,217	29,841	417	43,457	67,291	245,131	14.1	Fail
8	Madera	CA	154,697	42,542	20,912	3,271	8,768	5,032	66	7,464	11,440	30,029	13.3	Fail
9	Hawaii	HI	198,449	43,253	37,871	4,427	16,567	6,696	89	12,799	17,655	29,962	13.1	Fail
10	Stanislaus	CA	541,560	147,117	69,159	11,311	30,793	17,381	230	25,639	39,572	77,913	13.0	Fail
11	Imperial	CA	180,883	51,832	22,953	3,985	10,037	5,646	77	8,295	12,757	40,601	12.9	Fail
12	Allegheny	PA	1,225,365	232,012	220,511	20,388	105,401	72,243	789	94,220	109,638	137,017	12.8	Fail
12	Lancaster	PA	538,500	128,457	92,089	11,288	43,467	29,881	347	39,063	45,440	56,082	12.8	Fail
14	Lemhi	ID	7,723	1,425	2,254	115	587	443	4	687	770	1,351	12.4	Fail
15	San Joaquin	CA	733,709	201,363	90,581	15,481	41,538	23,267	312	34,236	53,020	105,268	12.2	Fail
15	Cuyahoga	OH	1,249,352	264,749	214,414	18,185	96,371	86,719	851	96,185	110,559	223,636	12.2	Fail
17	Shoshone	ID	12,452	2,477	2,834	200	932	645	6	954	1,099	2,319	11.9	Pass
18	Merced	CA	268,672	80,205	29,347	6,166	14,571	7,870	114	11,373	17,722	53,417	11.8	Pass
19	Delaware	PA	563,402	125,082	88,105	10,991	46,885	31,486	363	40,303	47,042	58,546	11.5	Pass
20	Marion	IN	941,229	234,792	110,701	19,216	71,930	53,343	656	62,629	74,108	173,996	11.4	Pass
20	Lincoln	MT	19,259	3,535	5,143	205	1,399	1,373	10	1,688	1,591	3,550	11.4	Pass
20	Philadelphia	PA	1,567,872	346,207	201,694	30,422	131,464	80,681	1,007	98,063	115,085	384,148	11.4	Pass
23	Wayne	MI	1,749,366	419,419	252,117	37,319	146,820	116,011	1,122	125,807	143,328	395,250	11.3	Pass
24	Jefferson	AL	659,521	151,817	99,342	20,036	49,675	47,648	439	60,443	72,597	98,463	11.2	Pass
24	Lebanon	PA	138,863	31,962	26,249	2,809	11,265	8,014	90	10,697	12,411	13,361	11.2	Pass
24	Harris	TX	4,589,928	1,239,122	447,828	98,053	254,461	153,270	2,428	233,148	346,643	752,261	11.2	Pass

Notes:

1. Counties are ranked by Design Value. See note 12 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 2016 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 2016 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 2014.
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 (NAAQS) 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 2014-2016. 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

2018 Rank[1]	County	ST	Total Population[2]	At-Risk Groups							High Ozone Days in Unhealthy Ranges, 2014–2016	
				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	2,140,096	573,306	237,432	44,077	121,553	65,711	95,271	369,012	145.7	F
2	Riverside	CA	2,387,741	613,935	331,531	47,201	138,861	79,941	118,793	359,774	121.7	F
3	Los Angeles	CA	10,137,915	2,253,113	1,308,573	173,226	614,420	341,446	500,783	1,629,450	111.2	F
4	Kern	CA	884,788	258,054	91,719	19,840	48,388	25,731	36,967	190,993	103.3	F
5	Tulare	CA	460,437	143,811	50,350	11,057	24,506	13,323	19,309	112,387	96.8	F
6	Fresno	CA	979,915	280,490	116,071	21,565	54,217	29,841	43,457	245,131	92.7	F
7	Kings	CA	149,785	40,935	14,539	3,147	8,340	4,289	6,055	23,247	44.7	F
8	Madera	CA	154,697	42,542	20,912	3,271	8,768	5,032	7,464	30,029	43.5	F
9	El Dorado	CA	185,625	37,699	36,007	2,898	11,979	7,770	12,149	16,073	39.3	F
10	San Diego	CA	3,317,749	728,325	446,038	55,996	201,462	112,570	165,134	400,028	36.8	F
11	Merced	CA	268,672	80,205	29,347	6,166	14,571	7,870	11,373	53,417	33.2	F
11	Nevada	CA	99,107	17,346	25,252	1,334	6,682	4,697	7,495	10,662	33.2	F
13	Stanislaus	CA	541,560	147,117	69,159	11,311	30,793	17,381	25,639	77,913	32.5	F
14	Sacramento	CA	1,514,460	363,059	205,786	27,913	90,121	51,327	76,049	243,760	31.8	F
15	Maricopa	AZ	4,242,997	1,040,113	619,931	83,849	301,393	210,580	279,394	624,923	31.2	F
16	Placer	CA	380,531	85,400	72,139	6,566	23,645	15,122	23,413	27,340	27.7	F
17	Tehama	CA	63,276	15,221	11,725	1,170	3,845	2,452	3,792	13,060	25.7	F
18	Tuolumne	CA	53,804	8,960	13,297	689	3,639	2,503	3,963	7,781	25.2	F
19	Fairfield	CT	944,177	217,667	139,905	23,975	76,641	42,482	53,502	79,966	24.2	F
20	Harris	TX	4,589,928	1,239,122	447,828	98,053	254,461	153,270	233,148	752,261	22.5	F
21	Clark	NV	2,155,664	506,883	303,648	32,943	131,653	112,663	143,914	311,352	20.3	F
22	San Joaquin	CA	733,709	201,363	90,581	15,481	41,538	23,267	34,236	105,268	18.8	F
23	Jefferson	CO	571,837	115,935	88,932	9,339	39,972	20,811	31,417	39,397	18.5	F
24	Imperial	CA	180,883	51,832	22,953	3,985	10,037	5,646	8,295	40,601	17.2	F
25	Tarrant	TX	2,016,872	539,423	217,694	42,685	112,659	70,413	108,112	270,348	16.7	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.
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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 2016 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 (2014-2016), 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	1,172,299
Albuquerque-Santa Fe-Las Vegas, NM	1,171,991
Alexandria, LA	154,789
Altoona, PA	124,650
Austin-Round Rock, TX	2,056,405
Bangor, ME	151,806
Bellingham, WA	216,800
Birmingham-Hoover-Talladega, AL	1,361,299
Bowling Green-Glasgow, KY	225,133
Buffalo-Cheektowaga, NY	1,210,481
Burlington-South Burlington, VT	217,365
Cape Coral-Fort Myers-Naples, FL	1,087,472
Casper, WY	81,039
Charlotte-Concord, NC-SC	2,632,249
Charlottesville, VA	231,349
Clarksville, TN-KY	282,349
Colorado Springs, CO	712,327
Columbus-Marion-Zanesville, OH	2,443,402
Corpus Christi-Kingsville-Alice, TX	527,969
Dallas-Fort Worth, TX-OK	7,673,305
Dothan-Enterprise-Ozark, AL	248,286
Eau Claire-Menomonie, WI	211,318
Edwards-Glenwood Springs, CO	130,628
Elmira-Corning, NY	183,262
Erie-Meadville, PA	362,464
Evansville, IN-KY	315,948
Fayetteville-Lumberton-Laurinburg, NC	548,868
Fayetteville-Springdale-Rogers, AR-MO	525,032
Florence, SC	205,976
Florence-Muscle Shoals, AL	146,534
Fort Smith, AR-OK	281,227
Gadsden, AL	102,564
Gainesville-Lake City, FL	350,007
Grand Island, NE	85,148
Greenville-Washington, NC	224,746
Harrisonburg-Staunton-Waynesboro, VA	254,069
Homosassa Springs, FL	143,621
Hot Springs-Malvern, AR	130,851
Houma-Thibodaux, LA	211,525
Jackson-Brownsville, TN	147,380
La Crosse-Onalaska, WI-MN	136,936
Lafayette-Opelousas-Morgan City, LA	627,504
Lake Charles-Jennings, LA	238,896
Lakeland-Winter Haven, FL	666,149
Lansing-East Lansing-Owosso, MI	543,653
Lawton, OK	128,077
Lexington-Fayette--Richmond--Frankfort, KY	732,372
Lima-Van Wert-Celina, OH	218,907
Little Rock-North Little Rock, AR	905,847
Longview-Marshall, TX	283,980
Lynchburg, VA	260,232
McAllen-Edinburg, TX	913,965
Mobile-Daphne-Fairhope, AL	623,399
Monroe-Ruston-Bastrop, LA	253,286
Montgomery, AL	373,922
Morgantown-Fairmont, WV	194,918
New Orleans-Metairie-Hammond, LA-MS	1,501,213
North Port-Sarasota, FL	1,002,722
Oklahoma City-Shawnee, OK	1,445,501
Orlando-Deltona-Daytona Beach, FL	3,202,927
Owensboro, KY	117,959
Palm Bay-Melbourne-Titusville, FL	579,130
Parkersburg-Marietta-Vienna, WV-OH	152,059
Pensacola-Ferry Pass, FL-AL	523,412
Pittsfield, MA	126,903
Portland-Lewiston-South Portland, ME	636,976
Pueblo-Cañon City, CO	212,569
Richmond, VA	1,281,708
Rochester-Batavia-Seneca Falls, NY	1,172,138
Rome-Summerville, GA	121,384
Saginaw-Midland-Bay City, MI	380,535
Salisbury, MD-DE	400,200
San Antonio-New Braunfels, TX	2,429,609
Santa Maria-Santa Barbara, CA	446,170
Scranton--Wilkes-Barre--Hazleton, PA	555,225
Shreveport-Bossier City, LA	441,767
Sierra Vista-Douglas, AZ	125,770
Springfield-Branson, MO	544,712
Springfield-Greenfield Town, MA	700,665
St. George, UT	160,245
State College-DuBois, PA	242,060
Syracuse-Auburn, NY	734,371
Tampa-St. Petersburg-Clearwater, FL	3,032,171
Texarkana, TX-AR	150,098
Tuscaloosa, AL	241,378
Urban Honolulu, HI	992,605
Valdosta, GA	144,676
Virginia Beach-Norfolk, VA-NC	1,830,629
Waterloo-Cedar Falls, IA	170,015
Wilmington, NC	282,573

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 National Ambient Air Quality Standard (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	4.2	Cheyenne, WY	98,136
2	4.6	Urban Honolulu, HI	992,605
3	4.7	Casper, WY	81,039
4	4.8	Bismarck, ND	131,635
4	4.8	Kahului-Wailuku-Lahaina, HI	165,474
6	5.2	Pueblo-Cañon City, CO	212,569
7	5.3	Elmira-Corning, NY	183,262
8	5.4	Palm Bay-Melbourne-Titusville, FL	579,130
8	5.4	Sierra Vista-Douglas, AZ	125,770
10	5.6	Wenatchee, WA	117,665
11	5.8	Cape Coral-Fort Myers-Naples, FL	1,087,472
12	5.9	Homosassa Springs, FL	143,621
12	5.9	Syracuse-Auburn, NY	734,371
12	5.9	Wilmington, NC	282,573
15	6.0	Burlington-South Burlington, VT	217,365
15	6.0	Grand Island, NE	85,148
15	6.0	Redding-Red Bluff, CA	242,907
18	6.2	Duluth, MN-WI	279,227
19	6.3	Bellingham, WA	216,800
19	6.3	Lakeland-Winter Haven, FL	666,149
19	6.3	North Port-Sarasota, FL	1,002,722
19	6.3	Pittsfield, MA	126,903
23	6.5	Grand Junction, CO	150,083
23	6.5	Salinas, CA	435,232
25	6.6	Orlando-Deltona-Daytona Beach, FL	3,202,927

Notes:

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

2. Cities are ranked 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
Anchorage, AK	402,557
Bangor, ME	151,806
Bellingham, WA	216,800
Bowling Green-Glasgow, KY	225,133
Brownsville-Harlingen-Raymondville, TX	443,945
Brunswick, GA	116,784
Burlington-South Burlington, VT	217,365
Casper, WY	81,039
Cedar Rapids-Iowa City, IA	436,627
Charleston-North Charleston, SC	761,155
Cheyenne, WY	98,136
Cleveland-Indianola, MS	59,144
Columbia-Moberly-Mexico, MO	227,604
Decatur, IL	106,550
Des Moines-Ames-West Des Moines, IA	795,055
Dothan-Enterprise-Ozark, AL	248,286
Eau Claire-Menomonie, WI	211,318
Fairbanks, AK	100,605
Fargo-Wahpeton, ND-MN	260,835
Fayetteville-Lumberton-Laurinburg, NC	548,868
Fayetteville-Springdale-Rogers, AR-MO	525,032
Florence, SC	205,976
Fort Smith, AR-OK	281,227
Gadsden, AL	102,564
Greenville-Washington, NC	224,746
Hickory-Lenoir, NC	409,262
Idaho Falls-Rexburg-Blackfoot, ID	239,764
Jackson-Vicksburg-Brookhaven, MS	670,031
Joplin-Miami, MO-OK	209,496
La Crosse-Onalaska, WI-MN	136,936
Lafayette-Opelousas-Morgan City, LA	627,504
Laredo, TX	271,193
Lincoln-Beatrice, NE	348,720
McAllen-Edinburg, TX	913,965
Missoula, MT	116,130
Monroe-Ruston-Bastrop, LA	253,286
New Bern-Morehead City, NC	195,001
Palm Bay-Melbourne-Titusville, FL	579,130
Panama City, FL	199,964
Quincy-Hannibal, IL-MO	115,830
Rapid City-Spearfish, SD	170,942
Roanoke, VA	313,698
Rochester-Austin, MN	255,047
Rocky Mount-Wilson-Roanoke Rapids, NC	300,750
Rome-Summerville, GA	121,384
Salinas, CA	435,232
Savannah-Hinesville-Statesboro, GA	539,753
Sebring, FL	100,917
Sioux City-Vermillion, IA-SD-NE	183,226
Springfield-Branson, MO	544,712
Steamboat Springs-Craig, CO	37,757
Tallahassee-Bainbridge, FL-GA	406,449
Tuscaloosa, AL	241,378
Urban Honolulu, HI	992,605
Waterloo-Cedar Falls, IA	170,015
Wilmington, NC	282,573

Notes:

1. This list represents cities with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 National Ambient Air Quality Standard (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
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
Talladega	AL	Birmingham-Hoover-Talladega, AL
Tuscaloosa	AL	Tuscaloosa, AL
Apache	AZ	
Cochise	AZ	Sierra Vista-Douglas, AZ
La Paz	AZ	
Mohave	AZ	Las Vegas-Henderson, NV-AZ
Pima	AZ	Tucson-Nogales, AZ
Arkansas	AR	
Ashley	AR	
Crittenden	AR	Memphis-Forrest City, TN-MS-AR
Garland	AR	Hot Springs-Malvern, AR
Jackson	AR	
Polk	AR	
Pulaski	AR	Little Rock-North Little Rock, AR
Union	AR	
Washington	AR	Fayetteville-Springdale-Rogers, AR-MO
Humboldt	CA	
San Benito	CA	San Jose-San Francisco-Oakland, CA
San Francisco	CA	San Jose-San Francisco-Oakland, CA
San Mateo	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	
Pueblo	CO	Pueblo-Cañon City, CO
Rio Blanco	CO	
Hartford	CT	Hartford-West Hartford, CT
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
Floyd	GA	Rome-Summerville, GA
Lowndes	GA	Valdosta, GA
Paulding	GA	Atlanta--Athens-Clarke County--Sandy Springs, GA
Honolulu	HI	Urban Honolulu, HI
Kauai	HI	
Bartholomew	IN	Indianapolis-Carmel-Muncie, IN
Dubois	IN	
Greene	IN	
Spencer	IN	
Vanderburgh	IN	Evansville, IN-KY
Black Hawk	IA	Waterloo-Cedar Falls, IA
Delaware	IA	
Lee	IA	
Palo Alto	IA	
Van Buren	IA	
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Boyd	KY	Charleston-Huntington-Ashland, WV-OH-KY
Campbell	KY	Cincinnati-Wilmington-Maysville, OH-KY-IN
Christian	KY	Clarksville, TN-KY
Daviess	KY	Owensboro, KY
Fayette	KY	Lexington-Fayette--Richmond--Frankfort, KY
Hardin	KY	Louisville/Jefferson County--Elizabeth-town--Madison, KY-IN
Henderson	KY	Evansville, IN-KY
McCracken	KY	Paducah-Mayfield, KY-IL
Madison	KY	Lexington-Fayette--Richmond--Frankfort, KY
Pulaski	KY	
Warren	KY	Bowling Green-Glasgow, KY
Caddo Parish	LA	Shreveport-Bossier City, LA
Calcasieu Parish	LA	Lake Charles-Jennings, LA

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 2006 National Ambient Air Quality Standard (NAAQS).
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. CSA stands for Combined Statistical Area, which 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]
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
Androscoggin	ME	Portland-Lewiston-South Portland, ME
Cumberland	ME	Portland-Lewiston-South Portland, ME
Hancock	ME	
Oxford	ME	
Penobscot	ME	Bangor, ME
Anne Arundel	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Baltimore	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Cecil	MD	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Dorchester	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Garrett	MD	
Harford	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Howard	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
Berkshire	MA	Pittsfield, MA
Bristol	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Essex	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Franklin	MA	Springfield-Greenfield Town, MA
Hampden	MA	Springfield-Greenfield Town, MA
Norfolk	MA	Boston-Worcester-Providence, MA-RI-NH-CT
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
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
Manistee	MI	
Missaukee	MI	
Washtenaw	MI	Detroit-Warren-Ann Arbor, MI
Scott	MN	Minneapolis-St. Paul, MN-WI
Cedar	MO	
Greene	MO	Springfield-Branson, MO
Hall	NE	Grand Island, NE
Scotts Bluff	NE	
Washington	NE	Omaha-Council Bluffs-Fremont, NE-IA
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
Camden	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
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
Bernalillo	NM	Albuquerque-Santa Fe-Las Vegas, 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
Caswell	NC	
Cumberland	NC	Fayetteville-Lumberton-Laurinburg, NC
Davidson	NC	Greensboro--Winston-Salem--High Point, NC
Forsyth	NC	Greensboro--Winston-Salem--High Point, NC
Mecklenburg	NC	Charlotte-Concord, NC-SC
Montgomery	NC	
New Hanover	NC	Wilmington, NC
Pitt	NC	Greenville-Washington, 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 2006 National Ambient Air Quality Standard (NAAQS).
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. CSA stands for Combined Statistical Area, which 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]
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	
Trumbull	OH	Youngstown-Warren, OH-PA
Cleveland	OK	Oklahoma City-Shawnee, OK
Comanche	OK	Lawton, OK
Dewey	OK	
Oklahoma	OK	Oklahoma City-Shawnee, OK
Pittsburg	OK	
Sequoyah	OK	Fort Smith, AR-OK
Armstrong	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
Blair	PA	Altoona, PA
Centre	PA	State College-DuBois, PA
Chester	PA	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Erie	PA	Erie-Meadville, PA
Lackawanna	PA	Scranton--Wilkes-Barre--Hazleton, PA
Monroe	PA	New York-Newark, NY-NJ-CT-PA
Tioga	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	
Florence	SC	Florence, SC
Oconee	SC	Greenville-Spartanburg-Anderson, SC
Spartanburg	SC	Greenville-Spartanburg-Anderson, SC
Brown	SD	
Dyer	TN	
Lawrence	TN	Nashville-Davidson--Murfreesboro, TN
Madison	TN	Jackson-Brownsville, TN
Maury	TN	Nashville-Davidson--Murfreesboro, TN
Montgomery	TN	Clarksville, TN-KY
Putnam	TN	
Sumner	TN	Nashville-Davidson--Murfreesboro, TN
Bexar	TX	San Antonio-New Braunfels, TX
Bowie	TX	Texarkana, TX-AR
Dallas	TX	Dallas-Fort Worth, TX-OK
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
Tarrant	TX	Dallas-Fort Worth, TX-OK
Travis	TX	Austin-Round Rock, TX
Washington	UT	St. George, UT
Bennington	VT	
Chittenden	VT	Burlington-South Burlington, VT
Albemarle	VA	Charlottesville, VA
Charles City	VA	Richmond, VA
Chesterfield	VA	Richmond, VA
Frederick	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Henrico	VA	Richmond, VA
Loudoun	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Rockingham	VA	Harrisonburg-Staunton-Waynesboro, VA
Hampton City	VA	Virginia Beach-Norfolk, VA-NC
Lynchburg City	VA	Lynchburg, VA
Norfolk City	VA	Virginia Beach-Norfolk, VA-NC
Salem City	VA	Roanoke, VA
Virginia Beach City	VA	Virginia Beach-Norfolk, VA-NC
Kitsap	WA	Seattle-Tacoma, WA
Skagit	WA	Seattle-Tacoma, WA
Whatcom	WA	Bellingham, WA
Berkeley	WV	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
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
Wood	WV	Parkersburg-Marietta-Vienna, WV-OH
Ashland	WI	
Eau Claire	WI	Eau Claire-Menomonie, WI
Forest	WI	
Grant	WI	
La Crosse	WI	La Crosse-Onalaska, WI-MN

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 2006 National Ambient Air Quality Standard (NAAQS).
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. CSA stands for Combined Statistical Area, which 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]
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
Albany	WY	
Carbon	WY	
Natrona	WY	Casper, WY
Park	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 2006 National Ambient Air Quality Standard (NAAQS).
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. CSA stands for Combined Statistical Area, which may include multiple MSAs and individual counties.

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

2018 Rank[2]	County	State	Design Value[3]
1	La Paz	AZ	1.8
2	McKenzie	ND	2.8
2	Custer	SD	2.8
4	Lake	CA	3.6
5	Kauai	HI	3.7
5	Jackson	SD	3.7
7	Essex	NY	3.8
7	Park	WY	3.8
9	La Plata	CO	4.1
9	Burke	ND	4.1
9	Albany	WY	4.1
12	Laramie	WY	4.2
13	Lake	MN	4.3
13	Oliver	ND	4.3
15	San Benito	CA	4.4
16	Williams	ND	4.5
16	Kent	RI	4.5
16	Teton	WY	4.5
19	Honolulu	HI	4.6
19	Fergus	MT	4.6
21	Belknap	NH	4.7
21	Campbell	WY	4.7
21	Natrona	WY	4.7
21	Sweetwater	WY	4.7
25	Maui	HI	4.8
25	Carson City	NV	4.8
25	Burleigh	ND	4.8
25	Ashland	WI	4.8

Notes:

1. This list represents counties with the lowest levels of annual average $PM_{2.5}$ 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 $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) 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
Etowah	AL	Gadsden, AL
Houston	AL	Dothan-Enterprise-Ozark, AL
Morgan	AL	Huntsville-Decatur-Albertville, AL
Sumter	AL	
Tuscaloosa	AL	Tuscaloosa, AL
Denali Borough	AK	
Fairbanks North Star Borough	AK	Fairbanks, AK
Matanuska-Susitna Borough	AK	Fairbanks, AK
Clark	AR	
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
Napa	CA	San Jose-San Francisco-Oakland, CA
San Francisco	CA	San Jose-San Francisco-Oakland, CA
Santa Cruz	CA	San Jose-San Francisco-Oakland, CA
Siskiyou	CA	
Sonoma	CA	San Jose-San Francisco-Oakland, CA
Moffat	CO	Steamboat Springs-Craig, CO
Montezuma	CO	
Rio Blanco	CO	
Baker	FL	Jacksonville-St. Marys-Palatka, FL-GA
Bay	FL	Panama City, FL
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	
Leon	FL	Tallahassee-Bainbridge, FL-GA
Liberty	FL	
Osceola	FL	Orlando-Deltona-Daytona Beach, 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
Columbia	GA	Augusta-Richmond County, GA-SC
Glynn	GA	Brunswick, GA
Richmond	GA	Augusta-Richmond County, GA-SC
Honolulu	HI	Urban Honolulu, HI
Butte	ID	Idaho Falls-Rexburg-Blackfoot, ID
Adams	IL	Quincy-Hannibal, IL-MO
Effingham	IL	
Hamilton	IL	
Macon	IL	Decatur, IL
Macoupin	IL	St. Louis-St. Charles-Farmington, MO-IL
Hendricks	IN	Indianapolis-Carmel-Muncie, IN
Johnson	IN	Indianapolis-Carmel-Muncie, IN
Madison	IN	Indianapolis-Carmel-Muncie, IN
Bremer	IA	Waterloo-Cedar Falls, IA
Linn	IA	Cedar Rapids-Iowa City, IA
Montgomery	IA	
Palo Alto	IA	
Polk	IA	Des Moines-Ames-West Des Moines, IA
Story	IA	Des Moines-Ames-West Des Moines, IA
Van Buren	IA	
Warren	IA	Des Moines-Ames-West Des Moines, IA
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Trego	KS	
Bell	KY	
Carter	KY	
Christian	KY	Clarksville, TN-KY
Edmonson	KY	Bowling Green-Glasgow, KY
Greenup	KY	Charleston-Huntington-Ashland, WV-OH-KY
Perry	KY	
Pike	KY	
Pulaski	KY	
Warren	KY	Bowling Green-Glasgow, KY
Caddo Parish	LA	Shreveport-Bossier City, LA
Lafayette Parish	LA	Lafayette-Opelousas-Morgan City, LA
Ouachita Parish	LA	Monroe-Ruston-Bastrop, LA
Androscoggin	ME	Portland-Lewiston-South Portland, ME
Aroostook	ME	
Kennebec	ME	
Oxford	ME	
Penobscot	ME	Bangor, ME
Washington	ME	
Garrett	MD	
Becker	MN	
Crow Wing	MN	
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
Scott	MN	Minneapolis-St. Paul, MN-WI
Stearns	MN	Minneapolis-St. Paul, MN-WI
Washington	MN	Minneapolis-St. Paul, MN-WI

Notes:

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

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

County	State	Metropolitan Statistical Area
Bolivar	MS	Cleveland-Indianola, MS
Hinds	MS	Jackson-Vicksburg-Brookhaven, MS
Lauderdale	MS	
Lee	MS	
Yalobusha	MS	
Andrew	MO	Kansas City-Overland Park-Kansas City, MO-KS
Boone	MO	Columbia-Moberly-Mexico, MO
Cass	MO	Kansas City-Overland Park-Kansas City, MO-KS
Greene	MO	Springfield-Branson, MO
Jasper	MO	Joplin-Miami, MO-OK
Taney	MO	Springfield-Branson, MO
Fergus	MT	
Flathead	MT	
Lewis and Clark	MT	
Missoula	MT	Missoula, MT
Phillips	MT	
Powder River	MT	
Richland	MT	
Rosebud	MT	
Lancaster	NE	Lincoln-Beatrice, NE
Belknap	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Rio Arriba	NM	Albuquerque-Santa Fe-Las Vegas, NM
Sandoval	NM	Albuquerque-Santa Fe-Las Vegas, NM
Santa Fe	NM	Albuquerque-Santa Fe-Las Vegas, NM
Valencia	NM	Albuquerque-Santa Fe-Las Vegas, NM
Alexander	NC	Hickory-Lenoir, NC
Caldwell	NC	Hickory-Lenoir, NC
Carteret	NC	New Bern-Morehead City, NC
Caswell	NC	
Cumberland	NC	Fayetteville-Lumberton-Laurinburg, NC
Durham	NC	Raleigh-Durham-Chapel Hill, NC
Edgecombe	NC	Rocky Mount-Wilson-Roanoke Rapids, NC
Granville	NC	Raleigh-Durham-Chapel Hill, NC
Johnston	NC	Raleigh-Durham-Chapel Hill, NC
Lee	NC	Raleigh-Durham-Chapel Hill, NC
Lenoir	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	
Portage	OH	Cleveland-Akron-Canton, OH
Adair	OK	
Caddo	OK	
Canadian	OK	Oklahoma City-Shawnee, OK
Cherokee	OK	Tulsa-Muskogee-Bartlesville, OK
Creek	OK	Tulsa-Muskogee-Bartlesville, OK
Ottawa	OK	Joplin-Miami, MO-OK
Pittsburg	OK	
Sequoyah	OK	Fort Smith, AR-OK
Columbia	OR	Portland-Vancouver-Salem, OR-WA
Bradford	PA	
Franklin	PA	Washington-Baltimore-Arlington, DC-MD-VA-WV-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
Custer	SD	Rapid City-Spearfish, SD
Jackson	SD	
Meade	SD	Rapid City-Spearfish, SD
Union	SD	Sioux City-Vermillion, IA-SD-NE
Anderson	TN	Knoxville-Morristown-Sevierville, TN
DeKalb	TN	
Wilson	TN	Nashville-Davidson--Murfreesboro, TN
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Hidalgo	TX	McAllen-Edinburg, TX
Hunt	TX	Dallas-Fort Worth, TX-OK
Kaufman	TX	Dallas-Fort Worth, TX-OK
Webb	TX	Laredo, TX
Chittenden	VT	Burlington-South Burlington, VT
Fauquier	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Frederick	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Roanoke	VA	Roanoke, VA
Rockbridge	VA	
Wythe	VA	
Clallam	WA	
Pierce	WA	Seattle-Tacoma, WA
Skagit	WA	Seattle-Tacoma, WA
Thurston	WA	Seattle-Tacoma, WA
Whatcom	WA	Bellingham, WA
Greenbrier	WV	

Notes:

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

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

County	State	Metropolitan Statistical Area
Ashland	WI	
Eau Claire	WI	Eau Claire-Menomonie, WI
Forest	WI	
La Crosse	WI	La Crosse-Onalaska, WI-MN
Taylor	WI	
Albany	WY	
Big Horn	WY	
Campbell	WY	
Converse	WY	
Fremont	WY	
Laramie	WY	Cheyenne, WY
Natrona	WY	Casper, WY
Teton	WY	
Weston	WY	

Notes:

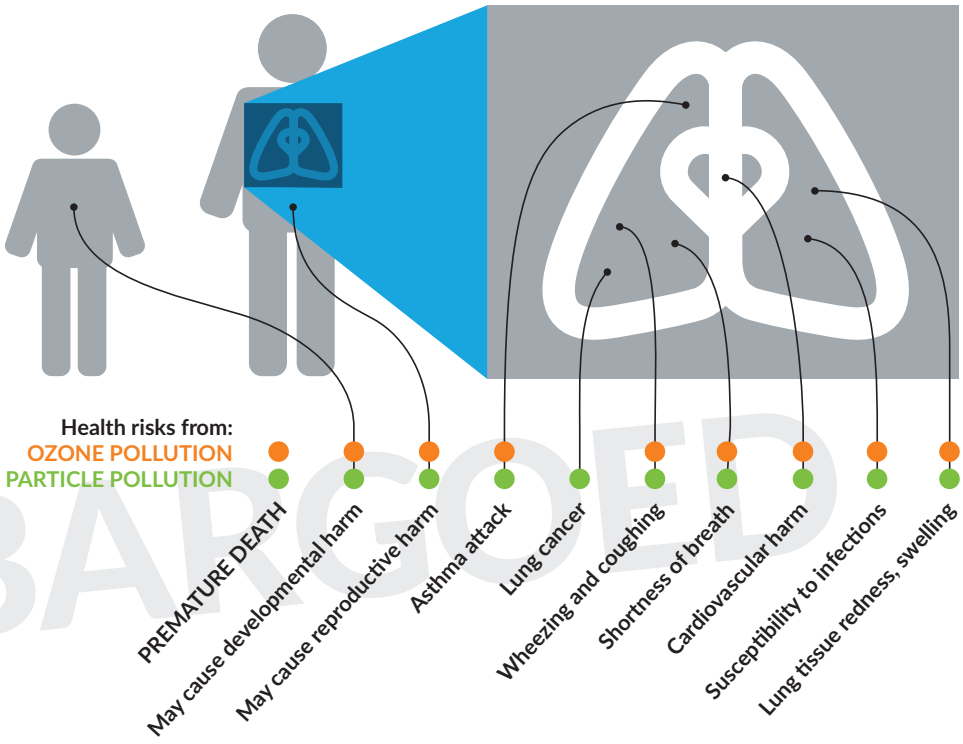
1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 National Ambient Air Quality Standard (NAAQS).

Health Effects of Ozone and Particle Pollution

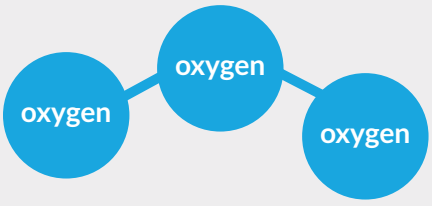
Two types of air pollution dominate in the U.S.: ozone and particle pollution.[1] These two pollutants threaten the health and the lives of millions of Americans. Thanks to the Clean Air Act, the U.S. has far less of both pollutants now than in the past. Still, more than 133.9 million people live in 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



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. It is currently one of the least well-controlled pollutants in the United States.[2] And it 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. When ozone is present, there are other harmful pollutants created by the same processes that make ozone.

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.

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

The essential raw ingredients for ozone come from nitrogen oxides (NOx); hydrocarbons, also called volatile organic compounds (VOCs). They are 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.[3]

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, even internationally across borders and even the oceans.

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;[4]
- anyone 65 and older;[5]
- people who work or exercise outdoors;[6]
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis);[7] and
- people with cardiovascular disease.[8]

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.[9] More research is needed to confirm these findings.

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 of 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 from 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]

Even low levels of ozone may be deadly. A large study of 48 U.S. cities looked at the association between ozone and mortality during the summer months. Ozone concentrations by city in the summer months ranged from 16 percent to 80 percent lower than the U.S. Environmental Protection Agency (EPA) currently considers safe. Researchers found that ozone at those lower levels was associated with deaths from cardiovascular disease, strokes and respiratory causes.[13]

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.[14]

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.[15] 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.[16] Several studies around the world have found increased risk of hospital admissions or emergency department visits for cardiovascular disease.[17]

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 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.[18]
- 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.[19]
- 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.[20]
- Studies link lower birthweight and decreased lung function in newborns to ozone levels in their community.[21] 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.[22]

Research shows that lower levels of ozone cause harm. The EPA released their latest complete review of the current research on ozone pollution in February 2013.[23] 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 below. Based on that review, EPA strengthened the official limit on ozone, called the National Ambient Air Quality Standard, in 2015.

However, new research provides evidence that ozone can cause serious harm even at much lower levels. In a 2017 scientific paper, researchers further evidence in a nationwide study that older adults faced a higher risk of premature death even when levels of ozone pollution remained well below the current national standard.[24]

EPA Concludes Ozone Pollution Poses Serious Health Threats

- Causes respiratory harm (e.g., worsened asthma, worsened COPD, inflammation)
- Likely to cause early death (from 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.

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 tiny solid and liquid particles that are in the air we breathe. Many of the particles are so small as to be invisible, but when levels are high, the air becomes opaque. But nothing about particle pollution is simple. And it is so dangerous that 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.

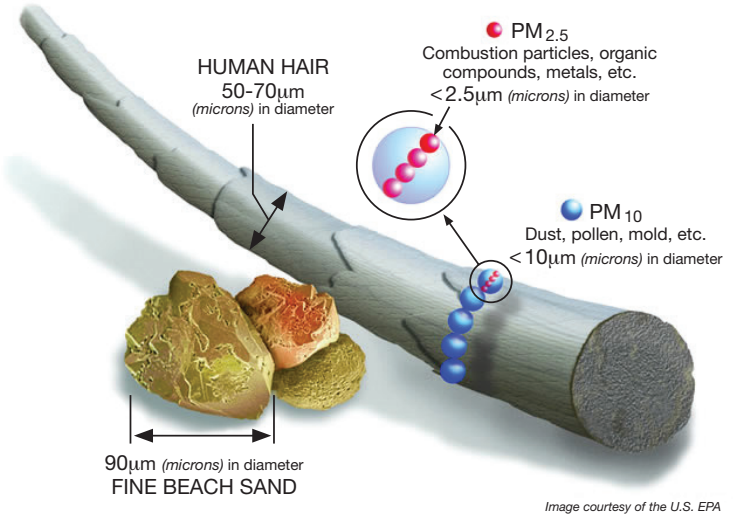


Image courtesy of the U.S. EPA

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 (shown as blue dots in the illustration) fall between 2.5 microns and 10 microns in diameter and are called $PM_{10-2.5}$. Fine particles (shown as pink dots) are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Ultrafine particles (not shown) are smaller than 0.1 micron in diameter[25] 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."[26]

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.[27]

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;[28]
- People over 65 years of age;[29]
- People with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema;
- People with heart disease[30] or diabetes;[31]
- People with low incomes;[32] and
- People who work or are active outdoors.[33]

Diabetics face increased risk at least in part because of their higher risk for cardiovascular disease.[34]

People with lung cancer also appear to be at higher risk from particle pollution, according to a 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 poorer survival.[35]

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

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.

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.[36]

Another long-term study of six U.S. cities tracked from 1974 to 2009 added more evidence of the benefits. The findings suggest that cleaning up particle pollution had almost immediate health benefits. The researchers 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.[37]

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.[38]

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 from hours to days. Premature deaths from breathing these particles 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 so early if the air were cleaner.[39]

Even low levels of particles can be deadly. A 2016 study found that people aged 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.[40] 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.[41] Looking nationwide in a 2017 study, researchers found more evidence that older adults faced a higher risk of premature death even when levels of short-term particle pollution remained well below the current national standards. This was consistent whether the older adults lived in cities, suburbs or rural areas.[42]

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;[43,44,45,46]
- increased mortality in infants and young children;[47]
- increased numbers of heart attacks, especially among the elderly and in people with heart conditions;[48]
- inflammation of lung tissue in young, healthy adults;[49]
- increased hospitalization for cardiovascular disease, including strokes and congestive heart failure;[50,51,52]
- increased emergency room visits for patients suffering from acute respiratory ailments;[53]
- increased hospitalization for asthma among children;[54,55,56] and
- increased severity of asthma attacks in children.[57]

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.[58]

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

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[59] and as other studies confirmed.[60] Chronic exposure to particle pollution can shorten life by one to three years.[61] Recent research has confirmed that long-term exposure to particle pollution still kills, even with the declining levels in the U.S. since 2000[62] and even in areas, such as New England, that currently meet the official limit, or standard, for year-round particle pollution.[63]

In late 2013, the International Agency for Research on Cancer (known as IARC), part of the World Health Organization, concluded that particle pollution causes lung cancer. The IARC reviewed the most recent research and reported that the risk of lung cancer increases as the particle levels rise.[64]

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;[65,66]
- slowed lung function growth in children and teenagers;[67,68]
- development of asthma in children up to age 14;[69]
- significant damage to the small airways of the lungs;[70]
- increased risk of death from cardiovascular disease;[71] and
- increased risk of lower birth weight and infant mortality.[72]

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.[73]

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.[74]

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.[75] 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.[76]

EPA completed the most recent review of the current research on particle pollution in December 2009.[77] 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. The 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.[78] 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.[79]

By contrast, chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles in the air. Some particles have precursors that are gases emitted by burning fuels or other human activity or by natural sources. These gases can oxidize and then condense to become a particle of a simple chemical compound. Or they can react with other gases or particles in the atmosphere to form a particle of a different compound or of multiple chemical compounds. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO_2), nitrogen oxides (NOx) and volatile organic compounds with water and other compounds in the atmosphere.[80] Burning fossil fuels in factories, power plants, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment generate a large part of the raw materials for fine particles. Other sources include burning wood in residential fireplaces and woodstoves or wildfires.

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.[81]

Some studies have found different kinds of particles may have greater risk for different health outcomes.[82,83,84]

Other studies have identified the challenges of exploring all the kinds of particles and their health effects with the limited monitoring across the nation.[85] Some particles serve as carriers for other chemicals that are also toxic, and the combination may worsen the impact.[86,87]

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 and breathe in a great deal of air.

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.[88] In addition, the body's defenses that help adults fight off infections are still developing in young bodies.[89] Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.[90]

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.[91]

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.[92] Pregnant women exposed to even low levels of particle pollution had higher risk for preterm birth in a Boston study.[93] Preterm births occurred more frequently when particle pollution spiked, as an Australian study found, even when the researchers controlled for other risk factors.[94]

Air Pollution Limits Lung Growth in Children

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

The Southern California Children's Health study looked at the long-term effects of air 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 reduced lung growth, which may never recover to their full capacity. The average drop in lung function was similar to the impact of growing up in a home with parents who smoked.[95]

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.[96] 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.[97]

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 the Southern California Children's Health study showed that reducing pollution could improve children's health. The researchers compared the children who had been part of their earlier studies to a new 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. 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."[98]

Further evidence that cleaner air provides real benefits to children's health came in a 2016 report from the same study exploring changes to 4,602 children's respiratory symptoms such as coughing, congestion and phlegm. The study looked at the changes in these symptoms in three groups of children living in Southern California over different periods of time when air quality also differed (1993-2001, 1996-2004, and 2003-2012). As air quality improved, the children in the study suffered fewer bronchial symptoms whether they had asthma or not. In communities where the air quality improved the most, the children experienced even fewer symptoms.[99]

So, does cleaning up the air really improve children's health? In 2017 researchers reviewed these long-term studies of children in Southern California and the impact of improvements in air quality on their health. They concluded that the 20 years of collected data provided strong evidence of the potential to improve children's health by reducing some of the most common outdoor air pollutants.[100]

The U.S. is not alone in this finding. 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.[101]

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,[102] including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.[103]

Many studies have looked at differences in the impact of air pollution on premature death. Results have varied widely, particularly for effects between racial groups. Some studies have found no differences among races,[104] while others found greater responsiveness for whites and Hispanics, but not African Americans,[105] or for African Americans but not other races or ethnic groups.[106] Other researchers have found greater risk for African Americans from hazardous air pollutants, including those pollutants that also come from traffic sources.[107]

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-related mortality nationwide.[108] In the 2008 study that found greater risk for premature death for communities with higher African-American populations, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.[109] 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.[110] 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.[111] However, two other studies in France have found no association with lower income and asthma attacks.[112]

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.[113]

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.[114]

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.[115]

Highways May Be Especially Dangerous for Breathing

Being in heavy traffic or living near a road may be risky compared with being in other places in a community. Growing evidence shows that pollution levels along busy 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 put together by a panel of expert scientists. The panel looked at over 700 studies from around the world, examining the health effects of traffic pollution. 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 the band within 0.2 to 0.3 miles (300 to 500 meters) of the highway.[116]

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.

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.[117] Studies have found increased risk of premature death from living near a major highway or an urban road.[118] Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.[119] Urban women in a Boston study experienced decreased lung function associated with traffic-related pollution.[120]

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, although 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.[121] A study of older men in 2011 also found that long-term exposure to traffic pollution increased their risk of having poor cognition.[122]

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.

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 the 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 2014-2016 for each monitoring site.

Design values for the annual $PM_{2.5}$ concentrations by county for the period 2014-2016 were retrieved from data posted on July 26, 2017, at the U.S. Environmental Protection Agency's website at https://www.epa.gov/sites/production/files/2017-07/pm25_designvalues_20142016_final_07_14_17.xlsx.

Ozone Data Analysis

The 2014, 2015 and 2016 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 June 30, 2017, 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 that inaccurately reflect the normal conditions. The highest 8-hour daily maximum concentration in each county for 2014, 2015, and 2016, 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 (AQI) 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)
>200 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 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 2014, 2015 and 2016 with monitoring information. The 24-hour $PM_{2.5}$ data were downloaded on August 3, 2017, 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 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 EPA based on 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)
equal to or greater than 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 above.

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 days when 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 two 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 one 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 county population at risk from these pollutants based on the population from the entire county where the monitor is located. The Lung Association then calculates the metropolitan population at risk based upon 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 2017 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 $\mu g/m^3$. Counties that EPA listed as being at or below 12 $\mu g/m^3$ were given grades of "Pass." Counties EPA listed as being at or above 12.1 $\mu g/m^3$ 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 and Mississippi counties and in some counties in other states had 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 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 2017 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. 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. 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.

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. For that reason, the Lung Association calculates the county population at risk from these pollutants based on the population from the entire county where the monitor is located. The Lung Association then calculates the metropolitan population at risk based upon the largest metropolitan area that contains that county.

The counties assigned to a metropolitan area follow the groupings determined by the White House Office of Management and Budget (OMB) and used by the U.S. Census Bureau. The Lung Association uses the largest definition of a metropolitan area for these groupings where at least one urban core of 50,000 people or more is present. The Metropolitan Statistical Areas and Combined Statistical Areas are used as the basis for considering populations at risk in these urban areas because they reflect the "high degree of social and economic interaction as measured by commuting ties," as OMB describes them.[1] The definitions of these areas reflect review and analysis of such patterns by these agencies.

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2016. The Census Bureau also estimated the age-specific breakdown of the population and the number of individuals 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 2016, the Behavioral Risk Factor Surveillance System (BRFSS) survey found that approximately 22.0 million (8.9 percent) of adults residing in the United States and 8.1 percent of children from 31 states reported currently having asthma. Among adults in the Unites States in 2016, 16.2 million (6.5 percent) had ever been diagnosed with

1 Executive Office of the President, Office of Management and Budget Bulletin No. 17-01. August 15, 2017.

chronic obstructive pulmonary disease (COPD), 21.4 million (8.7 percent) had ever been diagnosed with cardiovascular disease, and 26.6 million (10.8 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 2016 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 2016 BRFSS were available for 31 states, from the 2015 BRFSS for three states and Washington D.C., from the 2014 BRFSS for five states, from the 2012 BRFSS for two states, from the 2011 BRFSS for one state and national data were used for the eight states[2] 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 2016 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 2014 were obtained from StateCancerProfiles.gov, a system that provides access to statistics from both the NCI's Surveillance, Epidemiology and End Results (SEER) program and the CDC's National Program of Cancer Registries.

Local area incidence of lung cancer is estimated by applying 2014 age-adjusted and sex-specific incidence rates to 2016 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.

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, nonresponse 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.

2 *2015:* District of Columbia, Louisiana, New Hampshire, Texas. *2014:* Alabama, Maryland, North Carolina, Tennessee, West Virginia. *2012:* North Dakota and Wyoming. *2011:* Iowa. National: Alaska, Arkansas, Colorado, Delaware, 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 2016 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 2016 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 2016 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 2014 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, 2016.
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. 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 is not collected in that county.
4. The **Weighted Average (Wgt. Avg)** was derived by adding the three years of individual level data (2014-2016), 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 µg/m^3. Design values for the annual $PM_{2.5}$ concentrations by county for the period 2014-2016 are as posted on July 26, 2017 at EPA's website at https://www.epa.gov/sites/production/files/2017-07/pm25_designvalues_20142016_final_07_14_17.xlsx. The 2014-2016 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 µg/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	208,563	45,330	41,104	5,982	15,741	16,477	140	21,941	25,611	24,005
Clay	13,492	2,802	2,788	370	1,029	1,090	9	1,462	1,699	2,495
Colbert	54,216	11,492	10,418	1,517	4,128	4,277	36	5,661	6,634	8,982
DeKalb	70,900	17,340	11,638	2,288	5,210	5,190	48	6,719	7,980	14,362
Elmore	81,799	18,461	12,112	2,436	6,201	5,946	55	7,518	9,060	10,316
Etowah	102,564	22,326	18,616	2,946	7,776	7,920	69	10,382	12,238	17,624
Houston	104,056	24,371	17,514	3,216	7,748	7,728	70	10,022	11,884	19,878
Jefferson	659,521	151,817	99,342	20,036	49,675	47,648	439	60,443	72,597	98,463
Madison	356,967	78,810	51,347	10,401	27,255	26,214	240	33,005	39,999	47,081
Mobile	414,836	98,318	63,636	12,975	30,925	29,940	277	38,178	45,720	79,364
Montgomery	226,349	52,568	31,753	6,937	17,065	15,961	151	19,979	24,165	40,760
Morgan	119,012	27,236	19,931	3,594	8,922	8,963	80	11,614	13,811	18,457
Russell	58,172	14,575	7,699	1,923	4,285	4,005	39	4,990	6,065	11,108
Shelby	210,622	50,489	29,487	6,663	15,692	15,080	141	18,978	23,005	16,406
Sumter	13,040	2,580	2,246	340	1,020	987	9	1,270	1,505	3,933
Talladega	80,103	17,406	13,624	2,297	6,095	6,129	54	7,943	9,447	13,864
Tuscaloosa	206,102	43,171	25,472	5,697	16,138	14,022	138	16,968	20,798	34,384
Totals	**2,980,314**	**679,092**	**458,727**	**89,621**	**224,904**	**217,578**	**1,992**	**277,074**	**332,218**	**461,482**

ALABAMA

American Lung Association in Alabama

www.lung.org/alabama

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	8.2	PASS
Clay	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.2	PASS
Colbert	1	0	0	0.3	B	0	0	0	0.0	A	8.5	PASS
DeKalb	1	0	0	0.3	B	1	0	0	0.3	B	8.8	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	8.9	PASS
Houston	0	0	0	0.0	A	0	0	0	0.0	A	7.7	PASS
Jefferson	15	1	0	5.5	F	0	0	0	0.0	A	11.2	PASS
Madison	1	0	0	0.3	B	0	0	0	0.0	A	8.2	PASS
Mobile	8	0	0	2.7	D	0	0	0	0.0	A	8.5	PASS
Montgomery	2	0	0	0.7	B	0	0	0	0.0	A	9.0	PASS
Morgan	0	0	0	0.0	A	0	0	0	0.0	A	8.5	PASS
Russell	2	0	0	0.7	B	0	0	0	0.0	A	INC	INC
Shelby	7	0	0	2.3	D	INC	INC	INC	INC	INC	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	9.3	PASS
Tuscaloosa	0	0	0	0.0	A	0	0	0	0.0	A	8.5	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	298,192	73,967	29,471	5,958	19,581	13,255	163	12,465	16,081	21,108
Denali Borough	1,953	354	167	29	141	97	1	89	116	121
Fairbanks North Star Borough	100,605	24,518	8,884	1,975	6,611	4,353	55	3,893	5,074	8,144
Juneau City and Borough	32,468	7,128	3,801	574	2,225	1,554	18	1,542	1,968	2,334
Kenai Peninsula Borough	58,506	13,333	9,122	1,074	3,976	2,907	32	3,177	3,986	6,835
Matanuska-Susitna Borough	104,365	28,363	10,919	2,285	6,665	4,614	57	4,505	5,769	9,641
Totals	**596,089**	**147,663**	**62,364**	**11,894**	**39,199**	**26,779**	**326**	**25,671**	**32,993**	**48,183**

ALASKA

American Lung Association in Alaska

www.lung.org/alaska

HIGH OZONE DAYS 2014–2016

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	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

Borough	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anchorage Municipality	0	1	0	0.5	B	6.3	PASS
Denali Borough	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fairbanks North Star Borough	29	29	1	24.8	F	23.0	FAIL
Juneau City and Borough	1	0	0	0.3	B	6.8	PASS
Kenai Peninsula Borough	INC	INC	INC	INC	INC	INC	INC
Matanuska-Susitna Borough	18	2	0	7.0	F	6.8	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	73,112	21,040	10,394	1,696	4,933	3,514	35	4,686	5,680	23,966
Cochise	125,770	27,706	26,761	2,234	9,241	7,168	60	10,117	11,692	25,424
Coconino	140,908	29,837	16,808	2,405	10,328	6,648	67	8,455	10,288	23,116
Gila	53,556	10,931	14,939	881	4,053	3,479	25	5,137	5,813	10,678
La Paz	20,317	3,503	7,675	282	1,571	1,480	10	2,308	2,468	4,976
Maricopa	4,242,997	1,040,113	619,931	83,849	301,393	210,580	2,013	279,394	336,570	624,923
Mohave	205,249	36,838	58,634	2,970	16,019	13,724	98	20,240	22,938	36,665
Navajo	110,026	30,067	18,642	2,424	7,572	5,631	52	7,718	9,167	30,379
Pima	1,016,206	217,496	193,700	17,533	74,937	55,584	482	76,798	89,535	180,513
Pinal	418,540	98,157	83,581	7,913	30,010	22,728	200	31,838	36,684	60,679
Santa Cruz	45,985	12,712	7,937	1,025	3,150	2,357	22	3,244	3,840	9,569
Yavapai	225,562	37,676	67,931	3,037	17,901	15,592	107	23,149	26,158	29,418
Yuma	205,631	52,203	37,967	4,208	14,252	10,473	98	14,540	16,650	37,850
Totals	**6,883,859**	**1,618,279**	**1,164,900**	**130,458**	**495,359**	**358,957**	**3,268**	**487,624**	**577,483**	**1,098,156**

ARIZONA

American Lung Association in Arizona

www.lung.org/arizona

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Apache	DNC	DNC	DNC	DNC	DNC
Cochise	3	0	0	1.0	C
Coconino	8	0	0	2.7	D
Gila	11	0	0	3.7	F
La Paz	8	0	0	2.7	D
Maricopa	92	1	0	31.2	F
Mohave	DNC	DNC	DNC	DNC	DNC
Navajo	2	0	0	0.7	B
Pima	5	0	0	1.7	C
Pinal	23	0	0	7.7	F
Santa Cruz	DNC	DNC	DNC	DNC	DNC
Yavapai	6	0	0	2.0	C
Yuma	17	2	0	6.7	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Apache	0	0	0	0.0	A	INC	INC
Cochise	0	0	0	0.0	A	5.4	PASS
Coconino	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gila	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Paz	0	0	0	0.0	A	1.8	PASS
Maricopa	7	0	2	3.7	F	9.5	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	5.8	PASS
Pinal	11	1	0	4.2	F	7.9	PASS
Santa Cruz	4	3	0	2.8	D	9.4	PASS
Yavapai	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Yuma	3	1	0	1.5	C	6.7	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	18,214	4,168	3,364	336	1,199	1,420	14	1,958	2,017	3,237
Ashley	20,492	4,769	3,968	384	1,341	1,605	16	2,235	2,291	3,636
Clark	22,657	4,339	3,718	350	1,528	1,643	18	2,166	2,280	4,406
Crittenden	49,235	13,728	6,315	1,106	3,014	3,324	39	4,330	4,596	12,314
Garland	97,477	20,086	21,761	1,618	6,593	8,053	77	11,450	11,609	17,037
Jackson	17,221	3,473	2,922	280	1,167	1,330	14	1,788	1,866	3,587
Newton	7,936	1,579	2,050	127	544	696	6	1,019	1,018	1,566
Polk	20,173	4,706	4,468	379	1,320	1,629	16	2,330	2,356	4,660
Pulaski	393,250	92,818	56,730	7,477	25,430	28,121	309	36,940	39,020	66,302
Union	39,887	9,647	6,849	777	2,580	3,017	31	4,115	4,264	7,603
Washington	228,049	56,235	25,693	4,530	14,326	14,569	181	18,140	19,695	34,567
Totals	**914,591**	**215,548**	**137,838**	**17,363**	**59,042**	**65,407**	**720**	**86,469**	**91,012**	**158,915**

ARKANSAS

American Lung Association in Arkansas

www.lung.org/arkansas

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Arkansas	DNC	DNC	DNC	DNC	DNC
Ashley	DNC	DNC	DNC	DNC	DNC
Clark	0	0	0	0.0	A
Crittenden	3	1	0	1.5	C
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	2	0	0	0.7	B
Union	DNC	DNC	DNC	DNC	DNC
Washington	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Arkansas	0	0	0	0.0	A	8.8	PASS
Ashley	0	0	0	0.0	A	8.4	PASS
Clark	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Crittenden	0	0	0	0.0	A	8.8	PASS
Garland	0	0	0	0.0	A	8.7	PASS
Jackson	0	0	0	0.0	A	8.7	PASS
Newton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	0	0	0	0.0	A	8.6	PASS
Pulaski	0	0	0	0.0	A	10.3	PASS
Union	0	0	0	0.0	A	8.9	PASS
Washington	0	0	0	0.0	A	8.2	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	1,647,704	345,488	215,416	26,562	101,507	56,402	700	82,740	128,509	173,386
Amador	37,383	5,810	9,810	447	2,581	1,818	16	2,902	4,253	3,846
Butte	226,864	45,489	40,815	3,497	14,266	8,676	96	13,115	19,679	43,428
Calaveras	45,171	7,757	11,892	596	3,077	2,199	19	3,531	5,174	5,833
Colusa	21,588	5,943	2,967	457	1,230	716	9	1,071	1,642	2,375
Contra Costa	1,135,127	261,556	169,746	20,109	69,150	40,935	482	61,773	94,778	97,573
El Dorado	185,625	37,699	36,007	2,898	11,979	7,770	79	12,149	18,316	16,073
Fresno	979,915	280,490	116,071	21,565	54,217	29,841	417	43,457	67,291	245,131
Glenn	28,085	7,445	4,352	572	1,631	983	12	1,488	2,258	4,632
Humboldt	136,646	26,575	22,618	2,043	8,633	5,103	58	7,645	11,592	26,632
Imperial	180,883	51,832	22,953	3,985	10,037	5,646	77	8,295	12,757	40,601
Inyo	18,144	3,720	4,166	286	1,170	798	8	1,260	1,858	2,184
Kern	884,788	258,054	91,719	19,840	48,388	25,731	377	36,967	57,988	190,993
Kings	149,785	40,935	14,539	3,147	8,340	4,289	64	6,055	9,565	23,247
Lake	64,116	13,289	14,026	1,022	4,122	2,774	27	4,373	6,488	13,065
Los Angeles	10,137,915	2,253,113	1,308,573	173,226	614,420	341,446	4,307	500,783	777,378	1,629,450
Madera	154,697	42,542	20,912	3,271	8,768	5,032	66	7,464	11,440	30,029
Marin	260,651	53,334	53,688	4,100	16,838	11,152	111	17,539	26,266	19,932
Mariposa	17,410	2,861	4,487	220	1,191	839	7	1,340	1,968	3,077
Mendocino	87,628	18,988	18,049	1,460	5,515	3,615	37	5,636	8,376	16,366
Merced	268,672	80,205	29,347	6,166	14,571	7,870	114	11,373	17,722	53,417
Monterey	435,232	114,665	55,240	8,816	24,946	13,945	186	20,462	31,599	53,898
Napa	142,166	30,252	25,707	2,326	8,907	5,546	60	8,500	12,800	10,958
Nevada	99,107	17,346	25,252	1,334	6,682	4,697	42	7,495	10,992	10,662
Orange	3,172,532	712,640	442,981	54,790	193,316	111,066	1,348	165,460	255,357	348,173
Placer	380,531	85,400	72,139	6,566	23,645	15,122	161	23,413	35,090	27,340
Plumas	18,627	3,189	4,883	245	1,267	902	8	1,446	2,118	2,312
Riverside	2,387,741	613,935	331,531	47,201	138,861	79,941	1,015	118,793	182,153	359,774
Sacramento	1,514,460	363,059	205,786	27,913	90,121	51,327	643	76,049	117,249	243,760
San Benito	59,414	15,575	7,255	1,197	3,437	1,930	25	2,852	4,441	6,206
San Bernardino	2,140,096	573,306	237,432	44,077	121,553	65,711	910	95,271	149,172	369,012
San Diego	3,317,749	728,325	446,038	55,996	201,462	112,570	1,413	165,134	254,999	400,028
San Francisco	870,887	118,143	129,116	9,083	58,228	32,166	371	46,810	72,112	87,690
San Joaquin	733,709	201,363	90,581	15,481	41,538	23,267	312	34,236	53,020	105,268
San Luis Obispo	282,887	50,703	53,512	3,898	18,338	11,297	121	17,180	25,754	29,345
San Mateo	764,797	161,522	116,554	12,418	47,599	27,988	325	42,065	64,484	50,438
Santa Barbara	446,170	99,911	65,339	7,681	26,912	15,336	190	22,599	34,481	59,468
Santa Clara	1,919,402	433,176	245,292	33,304	115,974	64,533	817	94,790	147,337	175,627

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	274,673	54,024	40,963	4,154	17,305	9,978	117	14,856	22,819	35,339
Shasta	179,631	38,614	36,570	2,969	11,316	7,373	76	11,472	17,069	30,359
Siskiyou	43,603	8,789	10,502	676	2,835	1,970	19	3,131	4,599	8,109
Solano	440,207	99,277	64,554	7,633	26,868	15,692	187	23,525	36,133	48,701
Sonoma	503,070	100,840	91,781	7,753	32,060	19,974	214	30,648	46,229	46,604
Stanislaus	541,560	147,117	69,159	11,311	30,793	17,381	230	25,639	39,572	77,913
Sutter	96,651	25,254	14,669	1,942	5,622	3,345	41	5,035	7,651	16,390
Tehama	63,276	15,221	11,725	1,170	3,845	2,452	27	3,792	5,679	13,060
Tulare	460,437	143,811	50,350	11,057	24,506	13,323	196	19,309	30,030	112,387
Tuolumne	53,804	8,960	13,297	689	3,639	2,503	23	3,963	5,822	7,781
Ventura	849,738	200,360	123,933	15,404	51,235	30,037	361	45,110	69,257	81,792
Yolo	215,802	45,971	26,056	3,534	13,010	6,881	92	9,801	15,231	39,303
Totals	**39,076,756**	**9,053,873**	**5,320,350**	**696,088**	**2,347,448**	**1,331,886**	**16,615**	**1,969,792**	**3,038,550**	**5,498,967**

CALIFORNIA

American Lung Association in California

www.lung.org/california

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alameda	29	2	0	10.7	F	6	0	0	2.0	C	9.5	PASS
Amador	23	0	0	7.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Butte	33	0	0	11.0	F	3	1	0	1.5	C	8.5	PASS
Calaveras	43	1	0	14.8	F	1	1	1	1.5	C	8.2	PASS
Colusa	0	0	0	0.0	A	3	1	0	1.5	C	7.3	PASS
Contra Costa	15	0	0	5.0	F	1	0	0	0.3	B	9.2	PASS
El Dorado	94	16	0	39.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fresno	195	54	1	92.7	F	53	25	0	30.2	F	14.1	FAIL
Glenn	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Humboldt	0	0	0	0.0	A	0	0	0	0.0	A	5.8	PASS
Imperial	50	1	0	17.2	F	26	5	0	11.2	F	12.9	FAIL
Inyo	11	0	0	3.7	F	7	9	1	7.5	F	7.2	PASS
Kern	236	48	1	103.3	F	72	33	0	40.5	F	18.4	FAIL
Kings	122	8	0	44.7	F	55	29	0	32.8	F	22.0	FAIL
Lake	0	0	0	0.0	A	1	0	0	0.3	B	3.6	PASS
Los Angeles	212	73	6	111.2	F	24	4	0	10.0	F	INC	INC
Madera	114	11	0	43.5	F	36	11	0	17.5	F	13.3	FAIL
Marin	0	0	0	0.0	A	3	0	0	1.0	C	8.6	PASS
Mariposa	47	1	0	16.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mendocino	0	0	0	0.0	A	2	2	0	1.7	C	7.6	PASS
Merced	92	5	0	33.2	F	39	3	0	14.5	F	11.8	PASS
Monterey	0	0	0	0.0	A	4	8	0	5.3	F	6.5	PASS
Napa	0	0	0	0.0	A	1	0	0	0.3	B	10.4	PASS
Nevada	89	7	0	33.2	F	1	1	0	0.8	B	5.0	PASS
Orange	30	6	0	13.0	F	8	0	0	2.7	D	INC	INC
Placer	68	10	0	27.7	F	1	3	1	2.5	D	7.6	PASS
Plumas	DNC	DNC	DNC	DNC	DNC	29	3	0	11.2	F	15.0	FAIL
Riverside	233	84	3	121.7	F	36	2	0	13.0	F	14.5	FAIL
Sacramento	82	9	0	31.8	F	13	0	0	4.3	F	9.3	PASS
San Benito	9	0	0	3.0	D	0	0	0	0.0	A	4.4	PASS
San Bernardino	212	126	18	145.7	F	22	1	0	7.8	F	INC	INC
San Diego	106	3	0	36.8	F	3	1	0	1.5	C	8.8	PASS
San Francisco	0	0	0	0.0	A	0	0	0	0.0	A	7.6	PASS
San Joaquin	52	3	0	18.8	F	39	3	0	14.5	F	12.2	FAIL
San Luis Obispo	18	1	0	6.5	F	5	0	0	1.7	C	10.7	PASS
San Mateo	1	0	0	0.3	B	0	0	0	0.0	A	7.0	PASS
Santa Barbara	8	2	0	3.7	F	0	0	0	0.0	A	7.7	PASS
Santa Clara	13	0	0	4.3	F	4	1	0	1.8	C	8.9	PASS

CALIFORNIA (cont.)

American Lung Association in California

www.lung.org/california

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Santa Cruz	0	0	0	0.0	A
Shasta	28	0	0	9.3	F
Siskiyou	0	0	0	0.0	A
Solano	4	0	0	1.3	C
Sonoma	0	0	0	0.0	A
Stanislaus	87	7	0	32.5	F
Sutter	45	1	0	15.5	F
Tehama	68	6	0	25.7	F
Tulare	229	41	0	96.8	F
Tuolumne	65	7	0	25.2	F
Ventura	36	0	0	12.0	F
Yolo	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Santa Cruz	12	0	0	4.0	F	5.2	PASS
Shasta	0	1	0	0.5	B	6.0	PASS
Siskiyou	2	2	0	1.7	C	INC	INC
Solano	5	0	0	1.7	C	8.9	PASS
Sonoma	0	0	0	0.0	A	6.4	PASS
Stanislaus	48	6	0	19.0	F	13.0	FAIL
Sutter	4	0	0	1.3	C	9.1	PASS
Tehama	INC	INC	INC	INC	INC	INC	INC
Tulare	15	9	0	9.5	F	16.2	FAIL
Tuolumne	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ventura	0	0	0	0.0	A	9.2	PASS
Yolo	0	0	0	0.0	A	6.6	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	498,187	136,056	49,885	10,959	31,991	14,557	213	20,769	21,325	57,811
Arapahoe	637,068	153,108	79,820	12,333	42,597	20,671	272	30,353	30,995	56,898
Boulder	322,226	63,227	42,626	5,093	22,785	10,927	138	16,017	16,259	33,749
Chaffee	19,058	2,948	4,531	237	1,393	835	8	1,336	1,322	2,009
Clear Creek	9,436	1,473	1,793	119	697	399	4	617	636	753
Denver	693,060	140,638	77,062	11,328	48,708	21,503	296	30,568	30,764	95,232
Douglas	328,632	89,500	36,387	7,209	21,133	10,403	140	15,171	15,895	11,114
El Paso	688,284	169,030	83,762	13,615	45,700	21,754	294	31,783	32,283	76,997
Garfield	58,887	15,001	6,923	1,208	3,870	1,883	25	2,752	2,844	5,276
Gunnison	16,408	2,825	1,957	228	1,198	543	7	778	789	2,128
Jackson	1,357	224	296	18	98	57	1	91	91	191
Jefferson	571,837	115,935	88,932	9,339	39,972	20,811	244	31,417	31,973	39,397
La Plata	55,623	10,728	8,624	864	3,937	2,028	24	3,053	3,101	5,861
Larimer	339,993	68,025	50,096	5,479	23,835	11,703	145	17,436	17,434	37,023
Mesa	150,083	33,122	26,870	2,668	10,186	5,515	64	8,532	8,481	21,922
Moffat	13,109	3,363	1,811	271	856	442	6	663	680	1,676
Montezuma	26,999	6,226	5,468	502	1,802	1,054	12	1,669	1,663	4,031
Montrose	41,471	9,139	9,242	736	2,793	1,683	18	2,701	2,666	6,716
Park	17,166	2,808	3,035	226	1,261	727	7	1,118	1,174	1,572
Pueblo	165,123	38,007	29,240	3,061	11,073	6,023	71	9,324	9,290	32,053
Rio Blanco	6,545	1,555	970	125	437	225	3	339	343	591
San Miguel	8,017	1,519	989	122	574	284	3	415	436	811
Weld	294,932	78,317	34,638	6,308	19,074	9,107	126	13,297	13,557	33,377
Totals	**4,963,501**	**1,142,774**	**644,957**	**92,051**	**335,970**	**163,132**	**2,122**	**240,200**	**244,000**	**527,188**

COLORADO

American Lung Association in Colorado

www.lung.org/colorado

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	6	0	0	2.0	C	2	0	0	0.7	B	INC	INC
Arapahoe	9	0	0	3.0	D	0	0	0	0.0	A	5.9	PASS
Boulder	10	0	0	3.3	F	2	0	0	0.7	B	6.9	PASS
Chaffee	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clear Creek	21	0	0	7.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Denver	7	0	0	2.3	D	8	1	0	3.2	D	9.2	PASS
Douglas	32	3	0	12.2	F	1	0	0	0.3	B	5.2	PASS
El Paso	3	0	0	1.0	C	0	0	0	0.0	A	INC	INC
Garfield	6	0	0	2.0	C	0	0	0	0.0	A	INC	INC
Gunnison	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	48	5	0	18.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Plata	10	0	0	3.3	F	0	0	0	0.0	A	4.1	PASS
Larimer	37	1	0	12.8	F	2	1	0	1.2	C	INC	INC
Mesa	4	0	0	1.3	C	1	0	0	0.3	B	6.5	PASS
Moffat	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montezuma	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Montrose	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Park	6	0	0	2.0	C	INC	INC	INC	INC	INC	INC	INC
Pueblo	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	5.2	PASS
Rio Blanco	0	0	0	0.0	A	0	0	0	0.0	A	7.8	PASS
San Miguel	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weld	12	0	0	4.0	F	4	0	0	1.3	C	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	944,177	217,667	139,905	23,975	76,641	42,482	567	53,502	70,545	79,966
Hartford	892,389	190,383	144,758	20,970	73,860	41,392	536	52,843	68,582	95,010
Litchfield	182,571	34,253	36,005	3,773	15,332	9,589	110	12,603	16,329	12,952
Middlesex	163,329	30,193	30,769	3,326	13,844	8,352	98	10,884	14,096	12,513
New Haven	856,875	176,921	139,421	19,487	71,592	39,916	514	50,909	66,030	94,687
New London	269,801	53,607	46,017	5,905	22,688	12,913	162	16,585	21,466	23,961
Tolland	151,118	26,880	22,308	2,961	13,212	6,916	91	8,602	11,275	9,786
Windham	116,192	23,390	18,220	2,576	9,782	5,441	70	6,879	9,032	13,297
Totals	**3,576,452**	**753,294**	**577,403**	**82,971**	**296,951**	**167,002**	**2,148**	**212,807**	**277,356**	**342,172**

CONNECTICUT

American Lung Association in Connecticut

www.lung.org/connecticut

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Fairfield	50	15	0	24.2	F
Hartford	23	1	0	8.2	F
Litchfield	14	1	0	5.2	F
Middlesex	33	3	0	12.5	F
New Haven	29	6	0	12.7	F
New London	20	2	0	7.7	F
Tolland	20	0	0	6.7	F
Windham	7	1	0	2.8	D

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fairfield	2	0	0	0.7	B	9.6	PASS
Hartford	0	0	0	0.0	A	7.1	PASS
Litchfield	1	0	0	0.3	B	5.2	PASS
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC
New Haven	3	0	0	1.0	C	7.6	PASS
New London	1	0	0	0.3	B	6.6	PASS
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	174,827	40,280	28,732	3,245	11,406	8,308	119	11,776	13,870	23,060
New Castle	556,987	121,785	81,302	9,810	37,077	26,296	379	36,625	43,489	61,319
Sussex	220,251	42,209	56,916	3,400	14,617	12,861	150	19,617	22,645	25,212
Totals	**952,065**	**204,274**	**166,950**	**16,454**	**63,100**	**47,465**	**648**	**68,018**	**80,004**	**109,591**

DELAWARE

American Lung Association in Delaware

www.lung.org/delaware

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Kent	3	0	0	1.0	C
New Castle	23	2	0	8.7	F
Sussex	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	0	0	0	0.0	A	INC	INC
New Castle	5	1	0	2.2	D	9.0	PASS
Sussex	0	0	0	0.0	A	8.0	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	681,170	120,893	78,691	10,415	55,739	28,080	344	32,651	42,179	119,778
Totals	**681,170**	**120,893**	**78,691**	**10,415**	**55,739**	**28,080**	**344**	**32,651**	**42,179**	**119,778**

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

www.lung.org/districtofcolumbia

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
District of Columbia	14	0	0	4.7	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
District of Columbia	2	0	0	0.7	B	9.0	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	263,496	47,802	35,249	3,745	14,522	13,088	152	16,553	19,915	55,990
Baker	27,937	6,893	3,762	540	1,431	1,393	16	1,812	2,198	4,329
Bay	183,974	39,581	30,820	3,101	9,777	9,985	106	13,410	16,096	26,845
Brevard	579,130	107,170	134,618	8,396	31,767	35,983	334	51,148	60,484	84,028
Broward	1,909,632	407,171	306,987	31,899	101,923	103,164	1,099	137,507	165,607	256,027
Citrus	143,621	21,130	51,645	1,655	8,070	10,551	83	16,223	18,650	23,472
Collier	365,136	64,262	113,064	5,035	19,875	24,431	210	36,685	42,344	41,076
Columbia	69,299	15,254	12,416	1,195	3,650	3,801	40	5,175	6,180	11,449
Duval	926,255	209,759	124,997	16,433	48,651	46,689	533	60,360	73,163	131,327
Escambia	315,187	65,782	51,827	5,154	16,840	16,814	182	22,416	26,849	45,044
Flagler	108,310	18,945	32,144	1,484	5,938	7,255	62	10,797	12,542	11,997
Highlands	100,917	17,584	34,781	1,378	5,463	6,988	58	10,726	12,276	19,035
Hillsborough	1,376,238	316,636	188,463	24,806	71,915	69,332	792	89,934	108,884	203,350
Holmes	19,487	3,946	3,812	309	1,048	1,113	11	1,535	1,826	4,276
Indian River	151,563	25,523	47,993	2,000	8,340	10,392	87	15,647	18,088	18,518
Lake	335,396	65,771	88,688	5,153	17,948	21,004	193	30,685	35,769	39,212
Lee	722,336	131,348	198,070	10,290	39,304	46,314	416	67,921	79,072	91,333
Leon	287,822	53,694	35,950	4,207	15,794	14,070	165	17,608	21,276	52,124
Liberty	8,202	1,530	1,023	120	454	424	5	536	655	1,468
Manatee	375,888	71,416	98,476	5,595	20,318	23,768	216	34,614	40,461	47,042
Marion	349,020	65,301	99,737	5,116	18,816	22,549	201	33,394	38,735	58,992
Martin	158,701	26,304	48,042	2,061	8,801	10,827	92	16,142	18,756	17,584
Miami-Dade	2,712,945	552,026	433,032	43,248	146,357	146,032	1,561	193,669	233,012	487,700
Okaloosa	201,170	44,458	31,781	3,483	10,595	10,537	117	13,990	16,793	21,032
Orange	1,314,367	296,318	148,039	23,215	69,217	63,019	758	78,775	96,233	209,800
Osceola	336,015	83,000	44,400	6,503	17,152	16,373	194	21,160	25,600	49,326
Palm Beach	1,443,810	279,964	336,445	21,933	77,897	86,957	830	123,753	145,477	178,918
Pasco	512,368	103,962	117,117	8,145	27,385	30,663	295	43,586	51,343	66,980
Pinellas	960,730	160,179	228,971	12,549	53,833	60,846	552	86,514	102,204	125,923
Polk	666,149	149,542	133,174	11,716	34,668	37,007	384	51,449	60,828	106,703
St. Lucie	306,507	61,865	72,101	4,847	16,381	18,492	177	26,427	31,063	51,657
Santa Rosa	170,497	37,945	25,971	2,973	9,009	9,052	99	11,982	14,480	17,308
Sarasota	412,569	59,932	145,919	4,695	23,231	30,016	237	45,978	52,867	43,904
Seminole	455,479	96,289	69,243	7,544	24,389	24,249	262	31,971	38,618	51,750
Volusia	529,364	94,002	127,232	7,364	29,192	32,988	305	47,077	55,426	73,420
Wakulla	31,893	6,789	4,555	532	1,711	1,690	19	2,209	2,683	3,728
Totals	**18,831,410**	**3,809,073**	**3,660,544**	**298,417**	**1,011,663**	**1,067,860**	**10,842**	**1,469,365**	**1,746,452**	**2,732,667**

FLORIDA

American Lung Association in Florida

www.lung.org/florida

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alachua	1	0	0	0.3	B	0	0	0	0.0	A	INC	INC
Baker	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bay	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brevard	0	0	0	0.0	A	0	0	0	0.0	A	5.4	PASS
Broward	2	0	0	0.7	B	0	0	0	0.0	A	6.5	PASS
Citrus	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	5.9	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	7.9	PASS
Escambia	4	0	0	1.3	C	0	0	0	0.0	A	7.6	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	9	1	0	3.5	F	0	0	0	0.0	A	8.4	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	1	0	0	0.3	B	0	0	0	0.0	A	5.8	PASS
Leon	0	0	0	0.0	A	0	1	0	0.5	B	7.9	PASS
Liberty	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Manatee	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marion	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Miami-Dade	2	0	0	0.7	B	2	0	0	0.7	B	7.1	PASS
Okaloosa	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orange	2	0	0	0.7	B	0	0	0	0.0	A	6.6	PASS
Osceola	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Palm Beach	2	0	0	0.7	B	0	0	0	0.0	A	5.6	PASS
Pasco	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pinellas	1	0	0	0.3	B	0	0	0	0.0	A	6.7	PASS
Polk	1	0	0	0.3	B	0	0	0	0.0	A	6.3	PASS
St. Lucie	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Santa Rosa	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sarasota	2	0	0	0.7	B	0	0	0	0.0	A	6.3	PASS
Seminole	0	0	0	0.0	A	0	0	0	0.0	A	6.0	PASS
Volusia	1	0	0	0.3	B	0	0	0	0.0	A	5.9	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	152,760	38,159	22,597	3,375	9,859	9,103	98	11,263	14,435	38,547
Chatham	289,082	63,493	41,267	5,616	19,363	17,114	187	20,901	26,692	45,636
Chattooga	24,824	5,536	4,194	490	1,658	1,597	16	2,006	2,568	4,716
Clarke	124,707	21,836	12,719	1,931	8,797	6,532	81	7,462	9,445	31,950
Clayton	279,462	79,033	24,844	6,990	17,444	14,363	180	16,714	21,866	57,057
Cobb	748,150	181,897	85,345	16,088	49,175	42,721	484	51,010	66,393	73,446
Columbia	147,450	37,819	18,349	3,345	9,494	8,459	96	10,240	13,263	10,512
Coweta	140,526	35,428	18,436	3,134	9,122	8,367	91	10,211	13,265	13,867
Dawson	23,604	4,876	4,593	431	1,608	1,634	15	2,091	2,674	2,373
DeKalb	740,321	175,597	82,254	15,531	48,944	41,570	477	49,319	64,006	127,476
Dougherty	90,017	22,276	13,161	1,970	5,820	5,307	58	6,547	8,375	26,389
Douglas	142,224	37,560	15,661	3,322	9,112	7,995	92	9,553	12,481	18,191
Floyd	96,560	22,720	15,662	2,010	6,339	5,994	63	7,497	9,580	14,596
Fulton	1,023,336	231,498	113,322	20,475	68,599	57,775	663	68,348	88,652	159,400
Glynn	84,502	19,223	15,840	1,700	5,591	5,585	54	7,131	9,084	15,916
Gwinnett	907,135	249,306	84,640	22,050	57,401	48,481	589	56,829	74,617	102,033
Hall	196,637	51,086	28,311	4,518	12,534	11,563	128	14,282	18,334	26,561
Henry	221,768	58,476	24,678	5,172	14,221	12,548	143	15,017	19,630	21,101
Houston	152,122	39,154	18,803	3,463	9,774	8,648	99	10,454	13,520	22,347
Lowndes	114,628	27,428	13,421	2,426	7,486	6,166	74	7,325	9,353	23,936
Murray	39,315	9,807	5,530	867	2,552	2,366	26	2,911	3,762	7,055
Muscogee	197,485	48,446	25,198	4,285	12,833	11,150	128	13,472	17,291	41,006
Paulding	155,825	41,912	16,137	3,707	9,923	8,574	101	10,170	13,307	13,373
Pike	17,941	4,244	2,755	375	1,185	1,135	12	1,412	1,826	2,074
Richmond	201,647	47,239	26,690	4,178	13,298	11,670	131	14,151	18,169	48,929
Rockdale	89,355	22,575	12,277	1,997	5,791	5,393	58	6,625	8,594	12,943
Sumter	30,389	7,121	4,852	630	1,994	1,854	20	2,311	2,944	8,290
Walker	67,896	15,148	11,761	1,340	4,537	4,430	44	5,588	7,160	12,349
Washington	20,457	4,575	3,461	405	1,367	1,323	13	1,663	2,132	5,063
Wilkinson	9,104	2,097	1,703	185	603	613	6	784	1,005	1,875
Totals	**6,529,229**	**1,605,565**	**768,461**	**142,008**	**426,425**	**370,032**	**4,227**	**443,285**	**574,421**	**989,007**

GEORGIA

American Lung Association in Georgia

www.lung.org/georgia

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bibb	4	0	0	1.3	C	3	0	0	1.0	C	10.1	PASS
Chatham	0	0	0	0.0	A	1	0	0	0.3	B	8.7	PASS
Chattooga	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clarke	1	0	0	0.3	B	0	1	0	0.5	B	9.0	PASS
Clayton	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	9.9	PASS
Cobb	5	1	0	2.2	D	1	0	0	0.3	B	9.5	PASS
Columbia	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Coweta	4	1	0	1.8	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dawson	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
DeKalb	14	0	0	4.7	F	1	1	0	0.8	B	9.3	PASS
Dougherty	DNC	DNC	DNC	DNC	DNC	2	0	0	0.7	B	9.3	PASS
Douglas	9	1	0	3.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Floyd	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.9	PASS
Fulton	26	3	0	10.2	F	1	0	0	0.3	B	10.4	PASS
Glynn	0	0	0	0.0	A	2	0	0	0.7	B	7.9	PASS
Gwinnett	11	1	0	4.2	F	1	0	0	0.3	B	8.8	PASS
Hall	DNC	DNC	DNC	DNC	DNC	1	1	0	0.8	B	8.4	PASS
Henry	15	2	0	6.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Houston	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.6	PASS
Lowndes	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.0	PASS
Murray	2	0	1	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Muscogee	1	0	0	0.3	B	2	0	0	0.7	B	9.6	PASS
Paulding	2	0	0	0.7	B	0	0	0	0.0	A	7.8	PASS
Pike	7	1	0	2.8	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richmond	0	0	0	0.0	A	1	1	0	0.8	B	9.6	PASS
Rockdale	19	0	0	6.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sumter	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Walker	DNC	DNC	DNC	DNC	DNC	0	1	0	0.5	B	9.6	PASS
Washington	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.7	PASS
Wilkinson	DNC	DNC	DNC	DNC	DNC	2	1	0	1.2	C	9.9	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	198,449	43,253	37,871	4,427	16,567	6,696	89	12,799	17,655	29,962
Honolulu	992,605	212,096	165,117	21,707	84,033	31,072	444	57,374	80,508	81,341
Kauai	72,029	16,098	13,433	1,648	5,975	2,397	32	4,569	6,320	5,716
Maui	165,386	36,569	27,508	3,743	13,818	5,323	74	9,959	14,084	15,578
Totals	**1,428,469**	**308,016**	**243,929**	**31,524**	**120,392**	**45,488**	**638**	**84,701**	**118,567**	**132,597**

HAWAII

American Lung Association in Hawaii

www.lung.org/hawaii

HIGH OZONE DAYS 2014–2016

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 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Hawaii	7	0	0	2.3	D	13.1	FAIL
Honolulu	0	0	0	0.0	A	4.6	PASS
Kauai	0	0	0	0.0	A	3.7	PASS
Maui	2	0	0	0.7	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	444,028	108,409	60,380	8,732	31,450	17,787	220	24,569	28,880	46,600
Bannock	84,377	22,408	11,456	1,805	5,807	3,221	42	4,514	5,219	13,780
Benewah	9,092	2,045	2,041	165	658	460	5	682	786	1,624
Butte	2,501	627	526	51	175	120	1	177	203	451
Canyon	211,698	62,186	27,884	5,009	14,009	7,876	105	11,013	12,792	31,525
Franklin	13,406	4,431	1,866	357	840	494	7	702	812	1,239
Jerome	22,994	7,173	2,847	578	1,483	837	11	1,157	1,359	3,644
Lemhi	7,723	1,425	2,254	115	587	443	4	687	770	1,351
Shoshone	12,452	2,477	2,834	200	932	645	6	954	1,099	2,319
Totals	**808,271**	**211,181**	**112,088**	**17,011**	**55,941**	**31,884**	**400**	**44,455**	**51,920**	**102,533**

IDAHO

American Lung Association in Idaho

www.lung.org/idaho

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Ada	8	0	0	2.7	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 2014–2016

	24-Hour					Annual	
County	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	6.7	PASS
Benewah	5	1	0	2.2	D	INC	INC
Butte	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canyon	INC	INC	INC	INC	INC	INC	INC
Franklin	2	1	0	1.2	C	INC	INC
Jerome	INC	INC	INC	INC	INC	INC	INC
Lemhi	30	4	0	12.0	F	12.4	FAIL
Shoshone	31	4	0	12.3	F	11.9	PASS

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	66,578	15,059	12,912	1,103	4,548	3,512	45	4,657	5,977	8,223
Champaign	208,419	39,332	24,576	2,881	15,074	9,193	140	10,660	14,311	36,364
Clark	15,938	3,626	3,069	266	1,088	847	11	1,128	1,454	1,884
Cook	5,203,499	1,161,344	705,442	85,054	360,270	242,509	3,475	299,083	399,202	770,091
DuPage	929,368	213,803	133,491	15,658	63,821	45,003	622	56,946	76,081	64,330
Effingham	34,386	8,046	6,020	589	2,333	1,748	23	2,283	2,968	3,709
Hamilton	8,061	1,790	1,617	131	554	436	5	584	749	1,144
Jersey	22,025	4,588	4,071	336	1,545	1,180	15	1,555	2,025	2,369
Jo Daviess	21,770	4,223	5,662	309	1,535	1,334	15	1,863	2,329	2,145
Kane	531,715	139,987	67,225	10,252	34,996	23,941	356	29,789	40,124	55,134
Lake	703,047	174,196	91,773	12,758	47,271	32,730	471	40,993	55,299	59,478
McHenry	307,004	74,287	40,589	5,441	20,826	14,639	206	18,484	25,028	22,253
McLean	172,418	37,568	21,153	2,751	12,031	7,713	115	9,237	12,411	20,429
Macon	106,550	23,810	20,006	1,744	7,313	5,575	71	7,346	9,471	17,760
Macoupin	45,908	9,773	9,027	716	3,194	2,491	31	3,317	4,276	5,962
Madison	265,759	58,545	43,377	4,288	18,411	13,397	178	17,242	22,673	34,772
Peoria	185,006	44,366	29,131	3,249	12,483	8,928	124	11,391	14,923	27,254
Randolph	32,621	6,256	5,816	458	2,337	1,723	22	2,232	2,910	3,850
Rock Island	144,784	32,196	26,549	2,358	9,957	7,498	97	9,820	12,687	21,769
St. Clair	262,759	62,448	38,481	4,574	17,841	12,622	175	16,002	21,261	39,745
Sangamon	197,499	44,776	32,856	3,279	13,559	9,969	132	12,898	16,909	26,767
Will	689,529	177,360	83,376	12,989	45,837	31,063	462	38,434	52,179	48,627
Winnebago	285,873	67,506	47,012	4,944	19,386	14,250	191	18,436	24,164	43,858
Totals	**10,440,516**	**2,404,885**	**1,453,231**	**176,129**	**716,212**	**492,301**	**6,981**	**614,379**	**819,411**	**1,317,917**

ILLINOIS

American Lung Association in Illinois

www.lung.org/illinois

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cook	25	3	0	9.8	F	INC	INC	INC	INC	INC	INC	INC
DuPage	11	0	0	3.7	F	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	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC
Jo Daviess	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kane	9	0	0	3.0	D	INC	INC	INC	INC	INC	INC	INC
Lake	16	0	0	5.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McHenry	10	0	0	3.3	F	INC	INC	INC	INC	INC	INC	INC
McLean	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
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	21	0	0	7.0	F	INC	INC	INC	INC	INC	INC	INC
Peoria	2	0	0	0.7	B	INC	INC	INC	INC	INC	INC	INC
Randolph	5	0	0	1.7	C	INC	INC	INC	INC	INC	INC	INC
Rock Island	2	0	0	0.7	B	INC	INC	INC	INC	INC	INC	INC
St. Clair	6	0	0	2.0	C	INC	INC	INC	INC	INC	INC	INC
Sangamon	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Will	1	0	0	0.3	B	INC	INC	INC	INC	INC	INC	INC
Winnebago	6	0	0	2.0	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	370,404	96,363	50,959	7,887	27,834	21,748	259	26,678	30,852	54,642
Bartholomew	81,402	19,481	12,586	1,594	6,267	4,984	57	6,247	7,142	9,336
Boone	64,653	17,263	8,451	1,413	4,840	3,845	45	4,691	5,444	4,481
Brown	14,912	2,778	3,333	227	1,227	1,125	10	1,530	1,680	1,613
Carroll	19,970	4,548	3,682	372	1,561	1,337	14	1,752	1,960	2,033
Clark	116,031	26,524	17,375	2,171	9,094	7,253	81	9,006	10,352	11,983
Delaware	115,603	21,648	19,122	1,772	9,455	7,267	81	9,068	10,384	23,202
Dubois	42,552	10,171	7,127	832	3,287	2,759	30	3,542	4,003	2,730
Elkhart	203,781	56,794	28,442	4,648	14,911	11,762	143	14,571	16,764	26,390
Floyd	76,990	17,592	11,930	1,440	6,043	4,929	54	6,184	7,072	7,759
Greene	32,211	7,085	6,058	580	2,542	2,185	23	2,870	3,206	5,120
Hamilton	316,373	87,897	36,179	7,194	23,385	17,991	221	21,333	25,131	14,927
Hancock	73,717	17,298	11,532	1,416	5,738	4,706	52	5,930	6,766	5,327
Hendricks	160,610	41,059	21,045	3,360	12,190	9,540	113	11,578	13,470	9,008
Henry	48,521	10,058	9,022	823	3,887	3,278	34	4,272	4,789	7,244
Howard	82,568	18,813	15,503	1,540	6,430	5,460	58	7,179	8,012	12,011
Huntington	36,400	7,963	6,051	652	2,884	2,370	25	3,013	3,422	3,880
Jackson	44,013	10,816	6,942	885	3,366	2,739	31	3,465	3,945	5,677
Johnson	151,982	37,874	21,849	3,100	11,580	9,115	106	11,263	12,976	11,300
Knox	37,744	8,070	6,421	660	2,995	2,414	27	3,074	3,486	5,952
Lake	485,846	116,866	74,875	9,565	37,458	30,302	339	38,058	43,488	79,529
LaPorte	110,015	23,977	18,313	1,962	8,723	7,156	78	9,097	10,331	16,218
Madison	129,296	28,277	22,652	2,314	10,209	8,428	91	10,847	12,237	21,548
Marion	941,229	234,792	110,701	19,216	71,930	53,343	656	62,629	74,108	173,996
Monroe	145,496	23,016	17,308	1,884	12,355	8,266	102	9,269	11,220	30,977
Montgomery	38,074	8,704	6,552	712	2,974	2,474	27	3,184	3,593	4,157
Morgan	69,698	16,040	11,304	1,313	5,466	4,584	49	5,830	6,623	7,254
Perry	18,966	3,946	3,405	323	1,519	1,265	13	1,634	1,840	2,612
Porter	167,791	37,728	25,945	3,088	13,219	10,687	117	13,372	15,311	12,749
Posey	25,476	5,689	4,333	466	2,013	1,706	18	2,191	2,476	2,192
St. Joseph	269,141	64,319	40,238	5,264	20,750	16,345	188	20,309	23,326	41,889
Shelby	44,324	10,202	7,250	835	3,470	2,892	31	3,682	4,179	5,340
Spencer	20,648	4,666	3,923	382	1,618	1,407	15	1,858	2,070	1,847
Tippecanoe	188,059	39,293	20,146	3,216	15,037	10,055	132	11,181	13,600	30,478
Vanderburgh	181,721	39,566	28,760	3,238	14,397	11,467	127	14,363	16,430	30,462
Vigo	107,931	22,204	16,807	1,817	8,655	6,667	76	8,253	9,493	17,567

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	31,762	6,662	6,498	545	2,522	2,168	22	2,898	3,207	3,428
Warrick	62,498	15,175	10,651	1,242	4,794	4,019	44	5,186	5,845	4,615
Whitley	33,449	7,759	5,626	635	2,609	2,187	23	2,805	3,172	2,954
Totals	**5,161,857**	**1,228,976**	**738,896**	**100,583**	**399,234**	**312,228**	**3,611**	**383,892**	**443,405**	**714,427**

INDIANA

American Lung Association in Indiana

www.lung.org/indiana

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	3	0	0	1.0	C	7	1	0	2.8	D	9.8	PASS
Bartholomew	8	0	0	2.7	D	0	0	0	0.0	A	INC	INC
Boone	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brown	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	11	1	0	4.2	F	1	0	0	0.3	B	10.6	PASS
Delaware	1	0	0	0.3	B	2	0	0	0.7	B	9.0	PASS
Dubois	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.8	PASS
Elkhart	6	0	0	2.0	C	15	0	0	5.0	F	10.0	PASS
Floyd	10	0	0	3.3	F	1	0	0	0.3	B	9.3	PASS
Greene	5	0	0	1.7	C	0	0	0	0.0	A	8.8	PASS
Hamilton	3	0	0	1.0	C	2	0	0	0.7	B	9.0	PASS
Hancock	INC	INC	INC	INC	INC	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	8.4	PASS
Howard	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	INC	INC
Huntington	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	10	0	0	3.3	F	7	2	1	4.0	F	10.1	PASS
LaPorte	8	0	0	2.7	D	2	0	0	0.7	B	8.9	PASS
Madison	0	0	0	0.0	A	2	0	0	0.7	B	9.0	PASS
Marion	10	0	0	3.3	F	10	1	0	3.8	F	11.4	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	0	1	0	0.5	B	8.8	PASS
Montgomery	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Morgan	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Porter	12	0	0	4.0	F	2	1	0	1.2	C	9.1	PASS
Posey	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Joseph	10	0	0	3.3	F	4	0	0	1.3	C	9.3	PASS
Shelby	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Spencer	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.5	PASS
Tippecanoe	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	9.1	PASS
Vanderburgh	14	0	0	4.7	F	0	0	0	0.0	A	10.1	PASS
Vigo	1	0	0	0.3	B	2	1	0	1.2	C	9.7	PASS

INDIANA (cont.)

American Lung Association in Indiana

www.lung.org/indiana

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Wabash	9	0	0	3.0	D
Warrick	8	1	0	3.2	D
Whitley	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Wabash	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warrick	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Whitley	2	0	0	0.7	B	8.8	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	132,904	28,677	20,663	1,651	8,221	5,277	86	8,105	8,966	20,556
Bremer	24,798	5,476	4,754	315	1,506	1,063	16	1,724	1,873	1,557
Clinton	47,309	10,854	9,007	625	2,840	2,085	31	3,401	3,707	6,272
Delaware	17,327	4,118	3,251	237	1,029	765	11	1,249	1,364	1,626
Harrison	14,149	3,220	2,829	185	849	638	9	1,053	1,144	1,518
Johnson	146,547	29,514	15,811	1,699	9,377	5,144	95	7,139	8,160	23,460
Lee	34,615	7,376	6,803	425	2,120	1,559	22	2,549	2,774	4,643
Linn	221,661	52,613	33,079	3,028	13,338	8,802	143	13,562	15,063	21,613
Montgomery	10,225	2,298	2,192	132	613	473	7	791	854	1,287
Muscatine	42,940	10,915	6,855	628	2,515	1,730	28	2,727	3,007	4,540
Palo Alto	9,047	2,067	1,966	119	539	408	6	685	736	899
Polk	474,045	119,452	58,310	6,876	28,192	17,503	306	25,897	29,203	50,628
Pottawattamie	93,582	22,149	15,279	1,275	5,610	3,869	60	6,098	6,727	9,395
Scott	172,474	41,352	26,216	2,380	10,334	6,915	111	10,721	11,892	22,602
Story	97,090	16,244	10,821	935	6,482	3,413	63	4,665	5,326	16,340
Van Buren	7,271	1,687	1,529	97	432	332	5	556	600	1,047
Warren	49,691	12,380	7,748	713	2,935	1,996	32	3,123	3,454	3,263
Woodbury	102,779	27,045	14,579	1,557	5,980	3,909	66	5,997	6,668	13,318
Totals	**1,698,454**	**397,437**	**241,692**	**22,876**	**102,913**	**65,882**	**1,097**	**100,042**	**111,520**	**204,564**

IOWA

American Lung Association in Iowa

www.lung.org/iowa

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Black Hawk	DNC	DNC	DNC	DNC	DNC
Bremer	0	0	0	0.0	A
Clinton	2	0	0	0.7	B
Delaware	DNC	DNC	DNC	DNC	DNC
Harrison	1	0	0	0.3	B
Johnson	DNC	DNC	DNC	DNC	DNC
Lee	DNC	DNC	DNC	DNC	DNC
Linn	0	0	0	0.0	A
Montgomery	0	0	0	0.0	A
Muscatine	DNC	DNC	DNC	DNC	DNC
Palo Alto	0	0	0	0.0	A
Polk	0	0	0	0.0	A
Pottawattamie	DNC	DNC	DNC	DNC	DNC
Scott	2	0	0	0.7	B
Story	0	0	0	0.0	A
Van Buren	0	0	0	0.0	A
Warren	0	0	0	0.0	A
Woodbury	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Black Hawk	0	0	0	0.0	A	8.5	PASS
Bremer	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	2	0	0	0.7	B	9.4	PASS
Delaware	0	0	0	0.0	A	8.1	PASS
Harrison	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	2	0	0	0.7	B	8.3	PASS
Lee	0	0	0	0.0	A	9.2	PASS
Linn	3	0	0	1.0	C	8.8	PASS
Montgomery	1	0	0	0.3	B	6.9	PASS
Muscatine	6	0	0	2.0	C	9.4	PASS
Palo Alto	0	0	0	0.0	A	7.3	PASS
Polk	1	0	0	0.3	B	7.7	PASS
Pottawattamie	1	0	0	0.3	B	8.2	PASS
Scott	3	0	0	1.0	C	9.4	PASS
Story	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Van Buren	0	0	0	0.0	A	7.6	PASS
Warren	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Woodbury	2	0	0	0.7	B	INC	INC

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	584,451	145,106	79,805	13,006	39,119	25,617	356	35,995	40,816	32,380
Leavenworth	80,204	19,128	10,794	1,714	5,434	3,524	50	4,926	5,595	6,464
Neosho	16,146	4,013	3,056	360	1,084	787	10	1,170	1,293	2,552
Sedgwick	511,995	133,677	68,904	11,981	33,602	21,833	313	30,617	34,647	75,334
Shawnee	178,146	42,829	30,307	3,839	12,075	8,427	108	12,274	13,691	18,931
Sumner	23,272	5,668	4,210	508	1,577	1,135	14	1,676	1,864	3,091
Trego	2,872	537	704	48	210	165	2	254	277	309
Wyandotte	163,831	45,987	18,864	4,122	10,447	6,534	100	8,958	10,232	31,432
Totals	**1,560,917**	**396,945**	**216,644**	**35,578**	**103,548**	**68,022**	**953**	**95,870**	**108,415**	**170,493**

KANSAS

American Lung Association in Kansas

www.lung.org/kansas

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Johnson	0	0	0	0.0	A
Leavenworth	3	0	0	1.0	C
Neosho	1	0	0	0.3	B
Sedgwick	2	1	0	1.2	C
Shawnee	1	0	0	0.3	B
Sumner	1	0	0	0.3	B
Trego	0	0	0	0.0	A
Wyandotte	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Johnson	0	0	0	0.0	A	7.4	PASS
Leavenworth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Neosho	1	0	0	0.3	B	8.2	PASS
Sedgwick	1	0	0	0.3	B	8.5	PASS
Shawnee	1	0	0	0.3	B	7.6	PASS
Sumner	1	0	0	0.3	B	7.4	PASS
Trego	INC	INC	INC	INC	INC	INC	INC
Wyandotte	1	0	0	0.3	B	8.9	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	27,117	5,748	4,889	451	2,498	2,570	25	3,084	2,952	10,096
Boone	128,536	34,579	15,482	2,712	10,934	10,579	120	11,941	11,814	9,662
Boyd	48,132	10,332	8,904	810	4,420	4,579	45	5,528	5,274	8,356
Bullitt	79,151	17,848	11,560	1,400	7,147	7,120	74	8,231	8,037	8,144
Campbell	92,211	19,697	13,457	1,545	8,447	8,210	86	9,475	9,264	11,120
Carter	27,046	6,100	4,677	478	2,447	2,497	25	2,984	2,863	5,932
Christian	72,351	19,823	8,557	1,555	6,090	5,233	69	5,917	5,861	13,938
Daviess	99,674	24,335	16,365	1,909	8,796	8,862	93	10,537	10,136	15,895
Edmonson	12,114	2,306	2,469	181	1,148	1,198	11	1,467	1,389	2,668
Fayette	318,449	67,167	39,012	5,269	29,163	26,126	298	29,235	29,097	54,406
Greenup	35,893	7,823	7,174	614	3,287	3,467	33	4,255	4,024	6,131
Hancock	8,810	2,253	1,504	177	766	789	8	948	907	1,100
Hardin	107,316	26,465	14,416	2,076	9,413	9,089	101	10,412	10,221	14,306
Henderson	46,253	10,798	7,619	847	4,140	4,209	43	4,990	4,807	7,739
Jefferson	765,352	171,635	116,589	13,463	69,199	67,741	713	79,031	76,818	111,467
Jessamine	52,357	12,868	7,400	1,009	4,601	4,491	49	5,192	5,071	8,014
Livingston	9,269	1,881	1,960	148	866	945	9	1,165	1,099	1,329
McCracken	65,162	14,307	12,367	1,122	5,949	6,173	61	7,504	7,133	11,962
Madison	89,547	18,778	11,893	1,473	8,221	7,484	83	8,496	8,389	17,680
Morgan	13,298	2,516	2,035	197	1,256	1,231	13	1,424	1,390	3,109
Oldham	65,560	16,704	8,190	1,310	5,691	5,640	62	6,381	6,303	3,582
Perry	27,343	6,059	4,548	475	2,486	2,539	26	3,005	2,897	8,254
Pike	60,555	12,526	10,528	983	5,611	5,758	57	6,849	6,585	18,486
Pulaski	63,956	14,289	11,813	1,121	5,809	6,038	60	7,302	6,959	11,876
Simpson	18,083	4,389	2,985	344	1,599	1,616	17	1,922	1,848	2,663
Trigg	14,264	3,063	3,135	240	1,315	1,441	13	1,799	1,686	2,046
Warren	125,532	28,324	15,633	2,222	11,285	10,129	117	11,408	11,314	22,037
Washington	12,189	2,811	2,146	220	1,096	1,127	11	1,353	1,294	1,851
Totals	**2,485,520**	**565,424**	**367,307**	**44,352**	**223,682**	**216,881**	**2,323**	**251,835**	**245,431**	**393,849**

KENTUCKY

American Lung Association in Kentucky

www.lung.org/kentucky

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	1	1	0	0.8	B	9.3	PASS
Boone	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boyd	6	0	0	2.0	C	0	0	0	0.0	A	8.6	PASS
Bullitt	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Campbell	12	0	0	4.0	F	0	0	0	0.0	A	9.1	PASS
Carter	0	0	0	0.0	A	1	0	0	0.3	B	7.3	PASS
Christian	0	0	0	0.0	A	0	0	0	0.0	A	9.2	PASS
Daviess	2	1	0	1.2	C	0	0	0	0.0	A	9.8	PASS
Edmonson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	4	0	0	1.3	C	0	0	0	0.0	A	8.7	PASS
Greenup	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hardin	2	0	0	0.7	B	0	0	0	0.0	A	9.2	PASS
Henderson	6	0	0	2.0	C	0	0	0	0.0	A	9.6	PASS
Jefferson	20	5	0	9.2	F	2	1	0	1.2	C	10.4	PASS
Jessamine	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McCracken	2	0	0	0.7	B	0	0	0	0.0	A	9.2	PASS
Madison	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.0	PASS
Morgan	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oldham	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	0	0	0	0.0	A	0	1	0	0.5	B	8.5	PASS
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	8.5	PASS
Simpson	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Trigg	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warren	0	0	0	0.0	A	0	0	0	0.0	A	8.7	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						
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Cardiovascular Disease	Diabetes	Poverty
Ascension Parish	121,587	33,358	13,226	2,919	7,488	7,104	86	8,799	9,994	12,864
Bossier Parish	126,057	31,774	16,994	2,780	7,926	7,683	89	9,783	10,933	20,555
Caddo Parish	248,851	60,245	39,259	5,272	15,794	16,072	174	21,362	23,702	63,909
Calcasieu Parish	200,601	49,809	28,489	4,358	12,680	12,596	141	16,364	18,281	39,035
East Baton Rouge Parish	447,037	101,051	59,258	8,842	29,100	27,608	313	34,494	38,604	86,888
Iberville Parish	32,920	6,987	4,808	611	2,185	2,177	23	2,829	3,170	6,615
Jefferson Parish	436,523	95,561	69,793	8,362	28,610	29,209	307	38,852	43,232	69,610
Lafayette Parish	241,398	57,402	28,961	5,023	15,550	14,655	170	18,117	20,443	42,781
Lafourche Parish	98,305	23,043	14,191	2,016	6,336	6,332	69	8,258	9,240	16,447
Livingston Parish	140,138	36,600	17,277	3,203	8,748	8,440	99	10,655	12,004	17,396
Orleans Parish	391,495	79,676	50,906	6,972	26,318	24,986	274	31,132	35,041	91,421
Ouachita Parish	156,983	39,841	21,790	3,486	9,847	9,684	110	12,483	13,941	37,014
Pointe Coupee Parish	22,159	4,976	4,243	435	1,432	1,563	16	2,192	2,415	4,332
Rapides Parish	132,424	33,287	20,703	2,913	8,306	8,496	93	11,331	12,582	25,575
St. Bernard Parish	45,688	12,379	4,813	1,083	2,826	2,634	32	3,212	3,649	10,604
St. Charles Parish	52,923	13,069	6,663	1,144	3,379	3,336	37	4,281	4,844	6,812
St. James Parish	21,557	5,042	3,462	441	1,387	1,444	15	1,948	2,170	4,038
St. John the Baptist Parish	43,631	10,886	5,933	953	2,765	2,763	31	3,594	4,039	7,959
St. Martin Parish	54,007	13,359	7,681	1,169	3,425	3,446	38	4,515	5,058	9,830
St. Tammany Parish	253,602	61,345	40,420	5,368	16,152	16,844	178	22,744	25,340	24,598
Tangipahoa Parish	130,710	32,172	17,753	2,815	8,293	8,088	92	10,343	11,576	27,350
Terrebonne Parish	113,220	29,165	15,203	2,552	7,087	7,002	80	9,037	10,137	23,521
West Baton Rouge Parish	25,795	6,307	3,246	552	1,648	1,599	18	2,026	2,286	4,231
Totals	**3,537,611**	**837,334**	**495,072**	**73,270**	**227,282**	**223,764**	**2,488**	**288,354**	**322,683**	**653,385**

LOUISIANA

American Lung Association in Louisiana

www.lung.org/louisiana

HIGH OZONE DAYS 2014–2016

Parish	Orange	Red	Purple	Wgt. Avg.	Grade
Ascension Parish	10	1	0	3.8	F
Bossier Parish	2	0	0	0.7	B
Caddo Parish	0	0	0	0.0	A
Calcasieu Parish	6	1	0	2.5	D
East Baton Rouge Parish	19	2	0	7.3	F
Iberville Parish	12	0	0	4.0	F
Jefferson Parish	6	0	0	2.0	C
Lafayette Parish	0	0	0	0.0	A
Lafourche Parish	1	0	0	0.3	B
Livingston Parish	10	0	0	3.3	F
Orleans Parish	INC	INC	INC	INC	INC
Ouachita Parish	0	0	0	0.0	A
Pointe Coupee Parish	7	0	0	2.3	D
Rapides Parish	DNC	DNC	DNC	DNC	DNC
St. Bernard Parish	7	0	0	2.3	D
St. Charles Parish	INC	INC	INC	INC	INC
St. James Parish	2	1	0	1.2	C
St. John the Baptist Parish	4	0	0	1.3	C
St. Martin Parish	INC	INC	INC	INC	INC
St. Tammany Parish	7	0	0	2.3	D
Tangipahoa Parish	DNC	DNC	DNC	DNC	DNC
Terrebonne Parish	DNC	DNC	DNC	DNC	DNC
West Baton Rouge Parish	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
Parish	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ascension Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bossier Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo Parish	0	0	0	0.0	A	10.0	PASS
Calcasieu Parish	0	0	0	0.0	A	7.3	PASS
East Baton Rouge Parish	3	0	0	1.0	C	9.3	PASS
Iberville Parish	0	0	0	0.0	A	8.6	PASS
Jefferson Parish	0	0	0	0.0	A	7.5	PASS
Lafayette Parish	0	0	0	0.0	A	7.6	PASS
Lafourche Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orleans Parish	INC	INC	INC	INC	INC	INC	INC
Ouachita Parish	0	0	0	0.0	A	INC	INC
Pointe Coupee Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rapides Parish	0	0	0	0.0	A	INC	INC
St. Bernard Parish	0	0	0	0.0	A	9.1	PASS
St. Charles Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. James Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. John the Baptist Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Martin Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Tammany Parish	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tangipahoa Parish	0	0	0	0.0	A	7.5	PASS
Terrebonne Parish	0	0	0	0.0	A	7.1	PASS
West Baton Rouge Parish	0	0	0	0.0	A	9.0	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	107,319	23,377	18,060	1,722	10,353	6,027	78	7,944	8,338	13,210
Aroostook	67,959	12,533	15,295	923	6,695	4,298	50	6,000	6,203	10,804
Cumberland	292,041	56,118	50,716	4,135	29,127	16,890	213	22,245	23,324	28,431
Franklin	30,001	5,431	6,145	400	2,994	1,845	22	2,518	2,619	4,111
Hancock	54,419	9,612	12,457	708	5,406	3,487	40	4,878	5,043	5,877
Kennebec	120,569	23,791	21,675	1,753	11,855	7,105	88	9,468	9,950	16,479
Knox	39,744	7,204	9,324	531	3,926	2,539	29	3,574	3,678	4,376
Oxford	57,217	10,877	11,771	801	5,606	3,553	42	4,876	5,094	7,565
Penobscot	151,806	27,838	26,940	2,051	15,327	8,846	111	11,666	12,196	21,460
Sagadahoc	35,273	6,793	7,414	500	3,451	2,179	26	3,003	3,122	3,245
Washington	31,450	5,974	7,284	440	3,071	1,993	23	2,805	2,890	5,615
York	202,343	39,021	38,764	2,875	19,931	12,169	147	16,425	17,186	16,132
Totals	**1,190,141**	**228,569**	**225,845**	**16,840**	**117,742**	**70,931**	**867**	**95,401**	**99,643**	**137,305**

MAINE

American Lung Association in Maine

www.lung.org/maine

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Androscoggin	0	0	0	0.0	A
Aroostook	0	0	0	0.0	A
Cumberland	2	0	0	0.7	B
Franklin	DNC	DNC	DNC	DNC	DNC
Hancock	5	0	0	1.7	C
Kennebec	0	0	0	0.0	A
Knox	2	0	0	0.7	B
Oxford	0	0	0	0.0	A
Penobscot	0	0	0	0.0	A
Sagadahoc	INC	INC	INC	INC	INC
Washington	0	0	0	0.0	A
York	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	0	0	0	0.0	A	6.9	PASS
	1	2	0	1.3	C	8.2	PASS
	0	0	0	0.0	A	INC	INC
	INC	INC	INC	INC	INC	INC	INC
	0	0	0	0.0	A	INC	INC
	INC	INC	INC	INC	INC	INC	INC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	0	0	0	0.0	A	INC	INC
	0	0	0	0.0	A	6.8	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	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	568,346	127,321	79,853	12,310	41,713	23,718	320	33,547	46,694	38,816
Baltimore	831,026	179,828	136,814	17,387	61,286	36,257	466	52,575	72,074	72,978
Calvert	91,251	21,571	12,777	2,086	6,564	3,927	51	5,551	7,781	5,282
Carroll	167,656	36,637	27,236	3,542	12,290	7,596	94	10,956	15,165	8,990
Cecil	102,603	23,685	15,051	2,290	7,434	4,424	58	6,298	8,770	10,099
Charles	157,705	38,196	18,790	3,693	11,334	6,355	89	8,783	12,435	11,536
Dorchester	32,258	6,864	6,656	664	2,361	1,550	18	2,329	3,140	5,531
Frederick	247,591	58,425	33,831	5,649	17,871	10,340	139	14,578	20,389	16,793
Garrett	29,425	5,594	6,242	541	2,216	1,455	17	2,186	2,947	3,692
Harford	251,032	56,561	38,802	5,469	18,296	10,972	141	15,740	21,803	17,769
Howard	317,233	77,889	41,595	7,531	22,642	12,928	178	18,151	25,431	16,536
Kent	19,730	3,235	5,055	313	1,525	1,036	11	1,605	2,118	2,565
Montgomery	1,043,863	244,477	151,596	23,638	75,459	43,707	586	62,264	86,366	71,252
Prince George's	908,049	204,148	111,784	19,738	66,904	36,310	510	50,333	70,779	81,629
Washington	150,292	33,362	24,962	3,226	10,985	6,626	85	9,623	13,207	18,771
Baltimore City	614,664	129,207	79,091	12,493	46,202	24,511	344	34,157	47,673	128,752
Totals	**5,532,724**	**1,247,000**	**790,135**	**120,568**	**405,083**	**231,712**	**3,106**	**328,675**	**456,772**	**510,991**

MARYLAND

American Lung Association in Maryland

www.lung.org/maryland

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Anne Arundel	13	0	0	4.3	F
Baltimore	33	4	1	13.7	F
Calvert	6	0	0	2.0	C
Carroll	6	0	0	2.0	C
Cecil	18	2	0	7.0	F
Charles	10	0	0	3.3	F
Dorchester	4	0	0	1.3	C
Frederick	4	0	0	1.3	C
Garrett	0	0	0	0.0	A
Harford	19	2	0	7.3	F
Howard	DNC	DNC	DNC	DNC	DNC
Kent	12	0	0	4.0	F
Montgomery	5	0	0	1.7	C
Prince George's	19	1	0	6.8	F
Washington	4	0	0	1.3	C
Baltimore City	10	1	0	3.8	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anne Arundel	0	0	0	0.0	A	9.0	PASS
Baltimore	0	0	0	0.0	A	9.5	PASS
Calvert	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cecil	0	0	0	0.0	A	8.7	PASS
Charles	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dorchester	0	0	0	0.0	A	8.1	PASS
Frederick	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Garrett	0	0	0	0.0	A	5.7	PASS
Harford	0	0	0	0.0	A	8.8	PASS
Howard	0	0	0	0.0	A	INC	INC
Kent	0	0	0	0.0	A	7.9	PASS
Montgomery	0	0	0	0.0	A	8.4	PASS
Prince George's	0	0	0	0.0	A	9.1	PASS
Washington	1	0	0	0.3	B	8.9	PASS
Baltimore City	1	0	0	0.3	B	9.2	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	214,276	32,999	62,613	3,166	18,702	12,140	133	20,320	21,998	15,972
Berkshire	126,903	21,957	28,142	2,106	10,875	6,329	79	10,109	11,233	13,182
Bristol	558,324	115,942	91,366	11,122	45,992	24,250	348	36,960	42,133	58,070
Dukes	17,246	3,113	3,830	299	1,465	864	11	1,379	1,538	1,302
Essex	779,018	168,451	127,365	16,159	63,478	33,679	485	51,384	58,594	81,646
Franklin	70,382	12,486	14,031	1,198	6,012	3,415	44	5,331	6,027	6,926
Hampden	468,467	103,118	74,236	9,892	37,969	19,671	292	29,992	34,050	74,898
Hampshire	161,816	24,465	25,888	2,347	14,262	6,939	100	10,544	11,841	16,535
Middlesex	1,589,774	321,623	231,767	30,853	131,904	65,558	990	98,264	112,372	117,964
Norfolk	697,181	148,382	113,858	14,234	57,055	30,158	434	45,990	52,425	41,497
Plymouth	513,565	112,568	88,798	10,799	41,687	22,879	320	35,155	40,092	39,977
Suffolk	784,230	134,077	88,801	12,862	67,616	28,850	488	41,797	47,539	143,799
Worcester	819,589	176,607	121,657	16,942	66,927	34,462	511	51,645	59,538	75,902
Totals	**6,800,771**	**1,375,788**	**1,072,352**	**131,978**	**563,945**	**289,195**	**4,235**	**438,871**	**499,379**	**687,670**

MASSACHUSETTS

American Lung Association in Massachusetts

www.lung.org/massachusetts

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Barnstable	5	0	0	1.7	C
Berkshire	INC	INC	INC	INC	INC
Bristol	9	0	0	3.0	D
Dukes	4	0	0	1.3	C
Essex	7	0	0	2.3	D
Franklin	3	0	0	1.0	C
Hampden	8	1	0	3.2	D
Hampshire	7	1	0	2.8	D
Middlesex	1	0	0	0.3	B
Norfolk	6	1	0	2.5	D
Plymouth	2	0	0	0.7	B
Suffolk	1	0	0	0.3	B
Worcester	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	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	6.3	PASS
Bristol	0	0	0	0.0	A	6.4	PASS
Dukes	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	0	0	0	0.0	A	5.9	PASS
Franklin	0	0	0	0.0	A	5.9	PASS
Hampden	0	0	0	0.0	A	6.7	PASS
Hampshire	INC	INC	INC	INC	INC	INC	INC
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Norfolk	0	0	0	0.0	A	INC	INC
Plymouth	0	0	0	0.0	A	5.6	PASS
Suffolk	0	0	0	0.0	A	7.2	PASS
Worcester	0	0	0	0.0	A	6.4	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	115,548	28,250	18,435	2,514	9,566	7,922	74	8,821	9,973	10,303
Bay	104,747	21,505	20,278	1,913	9,034	7,754	67	8,932	9,913	15,716
Benzie	17,572	3,251	4,424	289	1,522	1,436	11	1,755	1,900	1,876
Berrien	154,010	34,237	28,621	3,046	13,019	11,072	99	12,692	14,106	25,215
Cass	51,599	10,744	10,477	956	4,413	3,903	33	4,555	5,043	6,579
Chippewa	37,724	7,025	6,426	625	3,372	2,682	25	2,972	3,330	5,278
Clinton	77,888	17,592	12,631	1,565	6,611	5,455	50	6,062	6,858	6,509
Genesee	408,615	94,067	67,334	8,370	34,452	28,388	262	31,692	35,691	81,761
Huron	31,481	6,022	7,638	536	2,713	2,536	20	3,078	3,345	4,409
Ingham	288,051	57,633	36,353	5,128	25,752	18,275	185	18,855	21,568	54,343
Kalamazoo	261,654	56,962	37,459	5,068	22,688	16,967	168	18,162	20,522	42,141
Kent	642,173	158,784	82,318	14,128	53,722	40,557	413	42,835	49,148	76,343
Lenawee	98,504	21,191	17,467	1,886	8,438	7,047	64	7,969	8,913	11,641
Macomb	867,730	186,719	140,716	16,614	74,751	61,125	557	67,685	76,583	94,224
Manistee	24,373	4,229	5,947	376	2,150	1,989	16	2,404	2,614	3,255
Mason	28,876	5,970	6,388	531	2,458	2,223	19	2,649	2,898	4,355
Missaukee	15,102	3,497	3,025	311	1,252	1,105	10	1,294	1,427	2,198
Monroe	149,208	32,692	25,232	2,909	12,742	10,701	96	11,991	13,541	14,819
Muskegon	173,408	40,694	27,613	3,621	14,566	11,847	112	13,133	14,819	31,393
Oakland	1,243,970	267,840	198,221	23,832	107,247	87,534	799	96,560	109,552	106,650
Ottawa	282,250	68,919	39,534	6,132	23,609	18,072	182	19,445	22,060	24,520
St. Clair	159,587	34,135	28,185	3,037	13,681	11,687	103	13,214	14,885	21,781
Schoolcraft	8,001	1,361	2,074	121	704	679	5	833	905	1,162
Tuscola	53,338	11,119	10,376	989	4,576	3,985	34	4,602	5,118	7,148
Washtenaw	364,709	69,142	47,086	6,152	33,008	23,651	235	24,483	28,030	49,933
Wayne	1,749,366	419,419	252,117	37,319	146,820	116,011	1,122	125,807	143,328	395,250
Wexford	33,163	7,802	6,063	694	2,755	2,363	21	2,710	3,018	5,812
Totals	**7,442,647**	**1,670,801**	**1,142,438**	**148,663**	**635,624**	**506,968**	**4,784**	**555,188**	**629,087**	**1,104,614**

MICHIGAN

American Lung Association in Michigan

www.lung.org/michigan

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allegan	19	1	0	6.8	F	0	0	0	0.0	A	7.8	PASS
Bay	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.6	PASS
Benzie	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berrien	20	0	0	6.7	F	0	0	0	0.0	A	8.0	PASS
Cass	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chippewa	1	0	0	0.3	B	0	0	0	0.0	A	INC	INC
Clinton	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Genesee	13	0	0	4.3	F	1	0	0	0.3	B	8.1	PASS
Huron	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ingham	6	0	0	2.0	C	0	0	0	0.0	A	8.4	PASS
Kalamazoo	10	0	0	3.3	F	1	0	0	0.3	B	8.9	PASS
Kent	12	0	0	4.0	F	0	1	0	0.5	B	9.4	PASS
Lenawee	5	0	0	1.7	C	0	0	0	0.0	A	8.3	PASS
Macomb	17	0	0	5.7	F	0	1	0	0.5	B	8.8	PASS
Manistee	6	0	0	2.0	C	0	0	0	0.0	A	6.0	PASS
Mason	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Missaukee	7	0	0	2.3	D	0	0	0	0.0	A	5.4	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.7	PASS
Muskegon	16	3	0	6.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oakland	12	0	0	4.0	F	1	0	0	0.3	B	8.9	PASS
Ottawa	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Clair	18	0	0	6.0	F	1	0	0	0.3	B	8.9	PASS
Schoolcraft	13	0	0	4.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tuscola	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washtenaw	10	0	0	3.3	F	0	0	0	0.0	A	9.0	PASS
Wayne	15	0	0	5.0	F	4	0	0	1.3	C	11.3	PASS
Wexford	7	0	0	2.3	D	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	345,957	83,398	44,665	5,726	19,998	10,001	184	18,074	21,633	23,240
Becker	33,734	8,207	6,747	564	1,922	1,135	18	2,182	2,469	4,200
Beltrami	46,106	11,651	7,126	800	2,646	1,332	24	2,446	2,833	8,070
Carlton	35,738	8,085	6,100	555	2,094	1,145	19	2,145	2,484	3,469
Cook	5,286	820	1,380	56	332	217	3	428	477	526
Crow Wing	63,940	13,965	13,910	959	3,756	2,267	34	4,390	4,933	6,975
Dakota	417,486	102,983	55,048	7,071	23,970	12,024	222	21,788	25,969	23,278
Goodhue	46,676	10,466	9,051	719	2,726	1,583	25	3,022	3,448	3,513
Hennepin	1,232,483	273,089	162,926	18,751	73,744	35,191	654	62,997	75,024	132,137
Lake	10,625	1,947	2,759	134	646	423	6	836	926	946
Lyon	25,699	6,493	3,860	446	1,470	746	14	1,369	1,596	3,167
Mille Lacs	25,866	6,180	4,812	424	1,486	849	14	1,613	1,844	3,047
Olmsted	153,102	37,756	22,575	2,592	8,814	4,481	81	8,210	9,618	13,027
Ramsey	540,649	126,468	73,658	8,684	31,879	15,269	287	27,451	32,453	73,203
St. Louis	199,980	38,252	36,309	2,627	12,298	6,628	106	12,402	14,285	28,177
Scott	143,680	40,371	14,518	2,772	7,910	3,703	76	6,514	7,970	7,784
Stearns	155,652	35,620	22,082	2,446	9,231	4,476	83	8,089	9,521	17,429
Washington	253,117	62,865	35,360	4,317	14,443	7,487	134	13,710	16,245	11,304
Winona	50,948	9,300	8,068	639	3,210	1,558	27	2,828	3,299	5,416
Wright	132,550	37,621	15,948	2,583	7,251	3,564	71	6,414	7,677	6,912
Totals	**3,919,274**	**915,537**	**546,902**	**62,864**	**229,827**	**114,079**	**2,081**	**206,908**	**244,708**	**375,820**

MINNESOTA

American Lung Association in Minnesota

www.lung.org/minnesota

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Anoka	1	0	0	0.3	B
Becker	0	0	0	0.0	A
Beltrami	DNC	DNC	DNC	DNC	DNC
Carlton	1	0	0	0.3	B
Cook	DNC	DNC	DNC	DNC	DNC
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	2	0	0	0.7	B
Mille Lacs	0	0	0	0.0	A
Olmsted	0	0	0	0.0	A
Ramsey	DNC	DNC	DNC	DNC	DNC
St. Louis	0	0	0	0.0	A
Scott	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	2	0	0	0.7	B

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	2	0	0	0.7	B	6.5	PASS
	2	0	0	0.7	B	5.4	PASS
	2	0	0	0.7	B	INC	INC
	INC	INC	INC	INC	INC	INC	INC
	INC	INC	INC	INC	INC	INC	INC
	2	0	0	0.7	B	5.7	PASS
	1	0	0	0.3	B	6.7	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	2	0	0	0.7	B	8.7	PASS
	1	0	0	0.3	B	4.3	PASS
	2	0	0	0.7	B	5.3	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	3	0	0	1.0	C	6.7	PASS
	4	1	0	1.8	C	8.3	PASS
	1	0	0	0.3	B	6.2	PASS
	0	0	0	0.0	A	7.0	PASS
	0	1	0	0.5	B	5.9	PASS
	3	0	0	1.0	C	7.2	PASS
	INC	INC	INC	INC	INC	INC	INC
	1	0	0	0.3	B	6.2	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	32,737	8,095	4,897	528	1,982	2,040	25	2,962	3,308	10,927
DeSoto	175,611	45,926	21,679	2,997	10,484	10,555	134	14,921	17,012	17,819
Forrest	75,979	17,421	10,157	1,137	4,658	4,569	58	6,416	7,255	18,514
Grenada	21,275	5,025	3,690	328	1,321	1,425	16	2,134	2,354	4,720
Hancock	46,791	10,182	8,532	664	2,999	3,296	36	4,978	5,489	7,976
Harrison	203,234	49,417	28,699	3,225	12,414	12,700	156	18,271	20,572	40,472
Hinds	241,229	59,521	31,217	3,884	14,611	14,623	182	20,678	23,475	48,244
Jackson	141,241	33,825	21,168	2,207	8,726	9,130	108	13,320	14,933	24,525
Lauderdale	77,755	18,584	12,671	1,213	4,789	5,060	59	7,476	8,293	17,531
Lee	85,381	21,752	12,700	1,420	5,150	5,366	65	7,828	8,754	14,332
Yalobusha	12,471	2,866	2,371	187	783	864	9	1,317	1,440	2,812
Totals	**1,113,704**	**272,614**	**157,781**	**17,791**	**67,918**	**69,629**	**848**	**100,303**	**112,886**	**207,872**

MISSISSIPPI

American Lung Association in Mississippi

www.lung.org/mississippi

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bolivar	0	0	0	0.0	A
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	7	0	0	2.3	D
Lauderdale	0	0	0	0.0	A
Lee	0	0	0	0.0	A
Yalobusha	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bolivar	DNC	DNC	DNC	DNC	DNC	DNC	DNC
DeSoto	INC	INC	INC	INC	INC	INC	INC
Forrest	INC	INC	INC	INC	INC	INC	INC
Grenada	INC	INC	INC	INC	INC	INC	INC
Hancock	INC	INC	INC	INC	INC	INC	INC
Harrison	INC	INC	INC	INC	INC	INC	INC
Hinds	INC	INC	INC	INC	INC	INC	INC
Jackson	INC	INC	INC	INC	INC	INC	INC
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	17,350	3,974	3,063	344	1,323	1,224	13	1,547	1,637	1,657
Boone	176,594	35,734	20,031	3,094	14,005	10,441	129	12,277	13,218	27,774
Buchanan	88,938	20,219	13,625	1,751	6,810	5,863	65	7,253	7,713	14,999
Callaway	45,078	9,554	6,750	827	3,522	3,017	33	3,708	3,957	4,754
Cass	102,845	25,220	16,650	2,184	7,685	6,913	75	8,654	9,184	8,792
Cedar	14,016	3,309	3,347	286	1,054	1,064	10	1,417	1,466	2,739
Clay	239,085	58,636	32,123	5,077	17,903	15,068	175	18,337	19,642	19,868
Clinton	20,610	4,876	3,705	422	1,556	1,451	15	1,842	1,946	2,089
Greene	288,690	60,335	46,176	5,224	22,623	19,005	211	23,598	24,968	45,710
Jackson	691,801	165,756	97,605	14,351	52,168	44,233	506	54,166	57,854	105,697
Jasper	119,111	30,109	17,222	2,607	8,822	7,477	87	9,216	9,805	20,301
Jefferson	224,226	52,921	32,104	4,582	16,987	14,889	165	18,256	19,560	22,484
Lincoln	55,267	14,188	7,210	1,228	4,076	3,504	41	4,256	4,576	6,132
Monroe	8,558	1,876	1,863	162	659	650	6	848	887	1,298
Perry	19,285	4,587	3,360	397	1,454	1,334	14	1,686	1,783	1,941
St. Charles	390,918	93,216	55,317	8,071	29,523	25,419	287	31,131	33,308	20,198
Ste. Genevieve	18,030	4,063	3,214	352	1,381	1,295	13	1,638	1,736	2,069
St. Louis	998,581	221,665	172,446	19,192	76,881	69,446	728	87,414	92,501	90,126
Taney	54,735	11,692	11,365	1,012	4,249	3,980	40	5,158	5,385	9,006
St. Louis City	311,404	61,887	37,200	5,358	24,798	19,516	228	23,136	24,968	73,250
Totals	**3,885,122**	**883,817**	**584,376**	**76,520**	**297,478**	**255,788**	**2,843**	**315,538**	**336,092**	**480,884**

MISSOURI

American Lung Association in Missouri

www.lung.org/missouri

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Andrew	0	0	0	0.0	A	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	9.5	PASS
Callaway	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cass	0	0	0	0.0	A	1	0	0	0.3	B	8.5	PASS
Cedar	1	0	0	0.3	B	0	0	0	0.0	A	7.3	PASS
Clay	8	0	0	2.7	D	2	0	0	0.7	B	7.8	PASS
Clinton	5	0	0	1.7	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	4	0	0	1.3	C	8.8	PASS
Jasper	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	9	0	0	3.0	D	3	0	0	1.0	C	10.1	PASS
Lincoln	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Monroe	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Charles	22	1	0	7.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ste. Genevieve	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Louis	14	0	0	4.7	F	3	0	0	1.0	C	9.9	PASS
Taney	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Louis City	3	0	0	1.0	C	7	2	0	3.3	F	10.1	PASS

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	11,413	2,387	2,714	138	789	739	6	895	841	1,619
Flathead	98,082	21,664	17,933	1,255	6,674	5,929	52	6,680	6,477	11,897
Lewis and Clark	67,282	14,538	11,940	842	4,592	4,030	36	4,500	4,372	6,858
Lincoln	19,259	3,535	5,143	205	1,399	1,373	10	1,688	1,591	3,550
Missoula	116,130	22,378	16,999	1,297	7,948	6,368	62	6,756	6,585	17,206
Phillips	4,133	953	882	55	280	261	2	307	294	631
Powder River	1,746	300	433	17	128	123	1	147	140	183
Ravalli	42,088	8,234	10,357	477	2,984	2,842	22	3,442	3,248	5,773
Richland	11,482	2,967	1,532	172	737	615	6	647	643	859
Rosebud	9,287	2,741	1,361	159	569	491	5	536	526	1,525
Silver Bow	34,553	7,089	6,283	411	2,378	2,070	18	2,324	2,244	5,193
Yellowstone	158,437	37,192	25,701	2,155	10,463	8,922	85	9,819	9,544	13,581
Totals	**573,892**	**123,978**	**101,278**	**7,183**	**38,942**	**33,763**	**307**	**37,740**	**36,504**	**68,875**

MONTANA

American Lung Association in Montana

www.lung.org/montana

HIGH OZONE DAYS 2014–2016

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 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fergus	7	3	0	3.8	F	4.6	PASS
Flathead	5	9	0	6.2	F	8.3	PASS
Lewis and Clark	19	5	0	8.8	F	8.3	PASS
Lincoln	9	12	1	9.7	F	11.4	PASS
Missoula	7	11	0	7.8	F	10.1	PASS
Phillips	5	4	0	3.7	F	5.3	PASS
Powder River	5	1	0	2.2	D	6.6	PASS
Ravalli	19	13	2	14.2	F	9.3	PASS
Richland	4	3	0	2.8	D	6.5	PASS
Rosebud	4	1	0	1.8	C	5.7	PASS
Silver Bow	5	6	0	4.7	F	9.0	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	554,995	143,362	67,458	9,156	34,471	22,338	323	29,047	33,651	67,359
Hall	61,705	16,827	9,098	1,075	3,736	2,623	36	3,556	3,986	7,652
Knox	8,571	2,094	2,077	134	529	461	5	685	715	1,076
Lancaster	309,637	71,242	40,301	4,550	19,995	12,750	180	16,591	19,039	35,993
Sarpy	179,023	49,728	19,813	3,176	10,839	6,913	104	8,886	10,413	10,294
Scotts Bluff	36,422	9,094	6,642	581	2,261	1,711	21	2,404	2,618	5,645
Washington	20,603	4,980	3,521	318	1,292	978	12	1,359	1,508	1,405
Totals	**1,170,956**	**297,327**	**148,910**	**18,989**	**73,123**	**47,774**	**681**	**62,529**	**71,931**	**129,424**

NEBRASKA

American Lung Association in Nebraska

www.lung.org/nebraska

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Douglas	1	0	0	0.3	B
Hall	DNC	DNC	DNC	DNC	DNC
Knox	1	0	0	0.3	B
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 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Douglas	4	0	0	1.3	C	8.7	PASS
Hall	0	0	0	0.0	A	6.0	PASS
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lancaster	1	0	0	0.3	B	6.8	PASS
Sarpy	3	0	0	1.0	C	INC	INC
Scotts Bluff	0	0	0	0.0	A	INC	INC
Washington	0	0	0	0.0	A	6.9	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
Churchill	24,198	5,590	4,535	363	1,489	1,404	13	1,906	2,277	3,371
Clark	2,155,664	506,883	303,648	32,943	131,653	112,663	1,122	143,914	177,741	311,352
Douglas	48,020	8,396	12,738	546	3,175	3,395	25	4,884	5,655	4,631
Elko	52,168	14,454	5,214	939	2,999	2,471	27	2,976	3,796	5,329
Lyon	53,179	11,582	11,243	753	3,330	3,279	28	4,551	5,372	6,289
Washoe	453,616	99,667	70,717	6,477	28,262	25,035	236	32,528	39,791	56,064
White Pine	9,682	2,034	1,537	132	610	545	5	709	867	1,220
Carson City	54,742	11,120	11,133	723	3,490	3,365	28	4,611	5,480	6,727
Totals	**2,851,269**	**659,726**	**420,765**	**42,876**	**175,009**	**152,157**	**1,484**	**196,078**	**240,978**	**394,983**

NEVADA

American Lung Association in Nevada

www.lung.org/nevada

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Churchill	3	0	0	1.0	C
Clark	58	2	0	20.3	F
Douglas	DNC	DNC	DNC	DNC	DNC
Elko	INC	INC	INC	INC	INC
Lyon	7	0	0	2.3	D
Washoe	21	0	0	7.0	F
White Pine	3	0	0	1.0	C
Carson City	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Churchill	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	1	2	0	1.3	C	10.3	PASS
Douglas	8	2	0	3.7	F	8.4	PASS
Elko	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lyon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washoe	5	3	0	3.2	D	7.8	PASS
White Pine	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carson City	3	1	0	1.5	C	4.8	PASS

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	60,779	11,405	12,879	823	5,455	3,423	38	4,438	4,924	5,949
Cheshire	75,774	13,621	14,010	983	7,089	4,018	47	5,072	5,657	6,078
Coos	32,039	5,345	7,201	386	2,943	1,865	20	2,430	2,691	4,072
Grafton	88,888	14,886	17,173	1,074	8,449	4,791	55	6,072	6,756	8,463
Hillsborough	407,761	85,494	60,548	6,167	37,135	20,071	252	24,649	27,783	31,972
Merrimack	148,582	29,011	25,797	2,093	13,583	7,747	92	9,726	10,888	10,532
Rockingham	303,251	60,561	49,762	4,368	27,391	15,818	187	19,751	22,210	12,681
Totals	**1,117,074**	**220,323**	**187,370**	**15,892**	**102,046**	**57,733**	**691**	**72,138**	**80,908**	**79,747**

NEW HAMPSHIRE

American Lung Association in New Hampshire

www.lung.org/newhampshire

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Belknap	0	0	0	0.0	A
Cheshire	2	0	0	0.7	B
Coos	6	0	0	2.0	C
Grafton	1	0	0	0.3	B
Hillsborough	6	0	0	2.0	C
Merrimack	2	0	0	0.7	B
Rockingham	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Belknap	0	0	0	0.0	A	4.7	PASS
Cheshire	0	1	0	0.5	B	7.9	PASS
Coos	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Grafton	0	0	0	0.0	A	6.0	PASS
Hillsborough	0	0	0	0.0	A	5.6	PASS
Merrimack	INC	INC	INC	INC	INC	INC	INC
Rockingham	0	0	0	0.0	A	6.6	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	270,991	58,878	45,800	4,790	17,544	13,765	152	18,127	20,531	37,734
Bergen	939,151	201,300	154,843	16,377	61,021	47,586	525	62,376	70,716	63,789
Camden	510,150	117,289	76,229	9,542	32,480	24,508	285	31,693	35,806	60,385
Cumberland	153,797	36,660	22,129	2,982	9,683	7,162	86	9,214	10,362	26,321
Essex	796,914	189,542	102,573	15,420	50,190	36,438	445	46,068	52,038	126,492
Gloucester	292,330	65,655	43,971	5,341	18,740	14,346	164	18,567	21,087	22,402
Hudson	677,983	138,731	74,517	11,287	44,533	29,583	380	36,092	40,123	104,660
Hunterdon	124,676	25,182	21,142	2,049	8,229	6,744	70	8,875	10,220	5,431
Mercer	371,023	79,876	53,177	6,498	24,065	17,829	208	22,827	25,777	39,066
Middlesex	837,073	182,602	118,400	14,856	54,095	39,828	469	50,899	57,403	69,642
Monmouth	625,846	135,356	103,612	11,012	40,565	32,294	350	42,410	48,394	43,866
Morris	498,423	108,169	80,358	8,800	32,272	25,401	279	33,213	37,853	26,615
Ocean	592,497	140,115	131,778	11,399	37,473	31,571	331	43,799	49,065	64,493
Passaic	507,945	122,500	69,610	9,966	31,858	23,442	284	29,949	33,774	85,671
Union	555,630	131,301	75,346	10,682	35,070	25,987	311	33,138	37,530	58,425
Warren	106,617	21,900	18,122	1,782	7,007	5,608	60	7,380	8,426	8,708
Totals	**7,861,046**	**1,755,056**	**1,191,607**	**142,783**	**504,827**	**382,092**	**4,398**	**494,626**	**559,105**	**843,700**

NEW JERSEY

American Lung Association in New Jersey

www.lung.org/newjersey

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Atlantic	3	0	0	1.0	C
Bergen	22	1	0	7.8	F
Camden	24	1	0	8.5	F
Cumberland	4	0	0	1.3	C
Essex	11	0	0	3.7	F
Gloucester	15	0	0	5.0	F
Hudson	22	1	0	7.8	F
Hunterdon	12	1	0	4.5	F
Mercer	28	1	0	9.8	F
Middlesex	23	2	0	8.7	F
Monmouth	9	1	0	3.5	F
Morris	6	1	0	2.5	D
Ocean	17	2	0	6.7	F
Passaic	12	0	0	4.0	F
Union	DNC	DNC	DNC	DNC	DNC
Warren	4	0	0	1.3	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Atlantic	0	0	0	0.0	A	7.7	PASS
Bergen	1	0	0	0.3	B	8.9	PASS
Camden	0	0	0	0.0	A	10.2	PASS
Cumberland	INC	INC	INC	INC	INC	INC	INC
Essex	2	0	0	0.7	B	8.9	PASS
Gloucester	0	0	0	0.0	A	8.3	PASS
Hudson	1	0	0	0.3	B	8.8	PASS
Hunterdon	INC	INC	INC	INC	INC	INC	INC
Mercer	0	0	0	0.0	A	8.0	PASS
Middlesex	0	0	0	0.0	A	INC	INC
Monmouth	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Morris	0	0	0	0.0	A	6.8	PASS
Ocean	1	0	0	0.3	B	7.2	PASS
Passaic	0	0	0	0.0	A	8.4	PASS
Union	4	0	0	1.3	C	9.9	PASS
Warren	0	0	0	0.0	A	8.6	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	676,953	151,807	103,011	14,988	62,354	29,179	265	44,438	59,595	107,909
Doña Ana	214,207	53,748	32,551	5,307	19,120	8,778	84	13,309	17,646	53,719
Eddy	57,621	15,259	8,193	1,507	5,031	2,347	23	3,570	4,799	8,674
Grant	28,280	5,839	7,395	576	2,583	1,521	11	2,479	3,100	6,308
Lea	69,749	21,259	7,562	2,099	5,825	2,482	27	3,657	5,033	12,179
Luna	24,450	6,424	5,095	634	2,104	1,129	10	1,797	2,285	6,601
Rio Arriba	40,040	9,684	7,119	956	3,559	1,827	16	2,863	3,770	8,953
Sandoval	142,025	33,999	23,475	3,357	12,725	6,308	56	9,778	12,992	20,441
San Juan	115,079	29,703	17,342	2,933	10,117	4,807	45	7,358	9,828	19,749
Santa Fe	148,651	27,961	33,097	2,761	14,015	7,711	58	12,326	15,897	20,463
Valencia	75,626	18,078	12,557	1,785	6,776	3,369	30	5,228	6,944	13,746
Totals	**1,592,681**	**373,761**	**257,397**	**36,901**	**144,207**	**69,457**	**624**	**106,804**	**141,889**	**278,742**

NEW MEXICO

American Lung Association in New Mexico

www.lung.org/newmexico

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bernalillo	4	0	0	1.3	C
Doña Ana	17	0	0	5.7	F
Eddy	4	0	0	1.3	C
Grant	INC	INC	INC	INC	INC
Lea	2	0	0	0.7	B
Luna	INC	INC	INC	INC	INC
Rio Arriba	0	0	0	0.0	A
Sandoval	0	0	0	0.0	A
San Juan	4	0	0	1.3	C
Santa Fe	0	0	0	0.0	A
Valencia	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
	0	0	0	0.0	A	7.1	PASS
	2	0	0	0.7	B	5.0	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	0	1	0	0.5	B	7.1	PASS
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	DNC	DNC	DNC	DNC	DNC	DNC	DNC
	INC	INC	INC	INC	INC	INC	INC
	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	308,846	57,746	49,300	5,215	23,901	12,891	181	19,014	25,609	35,585
Bronx	1,455,720	368,126	170,915	33,244	103,445	51,688	849	74,108	101,407	405,516
Chautauqua	129,504	26,698	24,418	2,411	9,837	5,827	76	8,833	11,793	23,921
Dutchess	294,473	57,107	48,409	5,157	22,765	12,893	173	19,211	26,015	25,588
Erie	921,046	188,815	157,350	17,051	69,994	39,772	539	59,510	79,982	126,912
Essex	38,102	6,280	8,432	567	3,050	1,899	22	2,921	3,874	4,532
Franklin	50,409	9,860	7,966	890	3,876	2,134	30	3,159	4,275	8,235
Hamilton	4,542	642	1,314	58	376	265	3	421	551	463
Herkimer	62,613	13,201	12,220	1,192	4,734	2,864	37	4,367	5,820	9,968
Jefferson	114,006	27,494	15,171	2,483	8,194	4,147	67	6,003	8,107	16,468
Kings	2,629,150	609,115	333,737	55,006	191,710	96,153	1,534	138,401	188,197	535,092
Monroe	747,727	158,002	122,510	14,268	56,317	31,471	437	46,861	63,077	106,742
New York	1,643,734	240,337	245,264	21,704	132,790	66,766	959	96,511	130,203	274,651
Niagara	211,758	42,820	38,216	3,867	16,204	9,526	124	14,374	19,314	26,152
Onondaga	466,194	100,561	75,039	9,081	34,956	19,554	273	29,095	39,249	65,822
Orange	379,210	97,173	50,302	8,775	27,011	14,539	223	21,298	29,093	46,624
Oswego	118,987	25,403	18,289	2,294	8,973	5,002	70	7,414	10,070	19,549
Putnam	98,900	20,255	15,753	1,829	7,585	4,380	58	6,537	8,916	5,844
Queens	2,333,054	476,408	332,028	43,022	177,076	93,454	1,365	136,470	185,534	307,866
Richmond	476,015	104,902	73,131	9,473	35,517	19,686	278	29,168	39,515	62,030
Rockland	326,780	90,828	50,256	8,202	22,541	12,732	191	19,023	25,567	46,260
Saratoga	227,053	47,073	38,105	4,251	17,266	9,918	133	14,847	20,054	14,094
Steuben	96,940	21,219	18,011	1,916	7,260	4,342	57	6,590	8,817	12,546
Suffolk	1,492,583	323,263	239,495	29,192	112,211	63,815	875	95,170	128,919	111,341
Tompkins	104,871	15,608	13,788	1,409	8,416	3,985	61	5,645	7,650	17,022
Wayne	90,798	19,738	15,880	1,782	6,834	4,047	53	6,107	8,236	9,296
Westchester	974,542	219,289	157,555	19,803	72,335	41,034	570	61,253	82,688	95,327
Totals	**15,797,557**	**3,367,963**	**2,332,854**	**304,144**	**1,185,173**	**634,788**	**9,237**	**932,309**	**1,262,531**	**2,413,446**

NEW YORK

American Lung Association in New York

www.lung.org/newyork

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Albany	2	0	0	0.7	B
Bronx	13	0	0	4.3	F
Chautauqua	10	0	0	3.3	F
Dutchess	8	0	0	2.7	D
Erie	11	0	0	3.7	F
Essex	3	0	0	1.0	C
Franklin	4	0	0	1.3	C
Hamilton	2	0	0	0.7	B
Herkimer	4	0	0	1.3	C
Jefferson	3	0	0	1.0	C
Kings	DNC	DNC	DNC	DNC	DNC
Monroe	2	0	0	0.7	B
New York	11	0	0	3.7	F
Niagara	4	0	0	1.3	C
Onondaga	2	0	0	0.7	B
Orange	5	0	0	1.7	C
Oswego	2	0	0	0.7	B
Putnam	6	1	0	2.5	D
Queens	12	0	0	4.0	F
Richmond	24	2	0	9.0	F
Rockland	9	0	0	3.0	D
Saratoga	4	0	0	1.3	C
Steuben	2	0	0	0.7	B
Suffolk	23	0	0	7.7	F
Tompkins	2	0	0	0.7	B
Wayne	3	0	0	1.0	C
Westchester	18	1	0	6.5	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	0	0	0	0.0	A	7.1	PASS
Bronx	0	0	0	0.0	A	9.0	PASS
Chautauqua	0	0	0	0.0	A	7.2	PASS
Dutchess	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	0	0	0	0.0	A	8.2	PASS
Essex	0	0	0	0.0	A	3.8	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	8.7	PASS
Monroe	0	0	0	0.0	A	6.8	PASS
New York	0	0	0	0.0	A	10.2	PASS
Niagara	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Onondaga	0	0	0	0.0	A	5.9	PASS
Orange	0	0	0	0.0	A	6.9	PASS
Oswego	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Putnam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Queens	0	0	0	0.0	A	7.5	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	5.3	PASS
Suffolk	0	0	0	0.0	A	7.2	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	159,688	36,032	26,633	4,141	10,060	9,379	109	12,471	14,285	25,014
Alexander	37,428	7,659	7,491	880	2,412	2,382	26	3,264	3,699	5,401
Avery	17,516	2,704	3,754	311	1,197	1,161	12	1,587	1,788	2,985
Buncombe	256,088	48,518	48,984	5,575	16,818	15,988	176	21,576	24,467	33,631
Caldwell	81,449	16,936	15,132	1,946	5,249	5,134	56	6,967	7,969	13,697
Carteret	68,890	12,496	16,045	1,436	4,555	4,743	47	6,663	7,493	8,321
Caswell	22,910	4,339	4,775	499	1,506	1,518	16	2,094	2,377	4,265
Catawba	156,459	35,407	26,582	4,069	9,858	9,363	108	12,530	14,378	19,537
Chatham	72,243	14,322	18,541	1,646	4,647	5,003	49	7,175	7,961	8,384
Cumberland	327,127	83,099	37,950	9,549	19,916	16,268	225	20,155	23,436	59,570
Davidson	164,926	37,023	29,066	4,255	10,413	10,054	113	13,556	15,535	25,150
Davie	42,013	9,067	8,393	1,042	2,675	2,698	29	3,718	4,228	4,820
Duplin	58,969	14,449	10,003	1,660	3,619	3,432	41	4,603	5,259	12,418
Durham	306,212	66,016	36,554	7,586	19,635	16,118	210	19,961	23,309	47,269
Edgecombe	53,318	12,319	9,690	1,416	3,329	3,222	36	4,366	4,974	12,514
Forsyth	371,511	87,331	55,989	10,036	23,173	21,012	254	27,485	31,701	62,994
Franklin	64,705	14,452	10,508	1,661	4,101	3,860	45	5,128	5,916	9,624
Gaston	216,965	49,729	33,729	5,715	13,645	12,578	149	16,562	19,113	33,562
Graham	8,558	1,817	1,968	209	543	563	6	792	885	1,675
Granville	59,031	12,244	9,697	1,407	3,821	3,602	41	4,782	5,527	8,403
Guilford	521,330	117,601	74,947	13,514	32,944	29,166	357	37,677	43,583	92,205
Haywood	60,682	11,081	14,792	1,273	3,992	4,182	42	5,916	6,605	9,545
Jackson	42,241	7,271	7,716	836	2,829	2,554	29	3,379	3,822	8,051
Johnston	191,450	49,722	24,670	5,714	11,613	10,330	132	13,278	15,519	25,065
Lee	59,616	14,630	9,507	1,681	3,663	3,401	41	4,509	5,176	9,869
Lenoir	57,307	12,961	10,794	1,489	3,599	3,527	39	4,808	5,468	11,637
Lincoln	81,168	17,566	13,591	2,019	5,195	4,973	56	6,648	7,677	10,179
McDowell	45,075	9,241	8,711	1,062	2,909	2,852	31	3,887	4,422	8,050
Macon	34,376	6,510	9,383	748	2,228	2,433	24	3,521	3,883	5,585
Martin	23,172	4,740	5,105	545	1,491	1,540	16	2,153	2,428	5,175
Mecklenburg	1,054,835	255,098	111,435	29,315	65,580	53,419	723	65,471	77,189	127,889
Mitchell	15,126	2,778	3,714	319	994	1,049	10	1,488	1,662	2,444
Montgomery	27,418	6,242	5,312	717	1,716	1,690	19	2,314	2,621	5,655
New Hanover	223,483	42,418	37,372	4,874	14,706	13,224	153	17,348	19,818	37,472
Person	39,284	8,439	7,247	970	2,509	2,454	27	3,331	3,809	5,962
Pitt	177,220	38,791	21,162	4,458	11,298	9,157	121	11,297	13,141	36,594

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	133,235	34,119	18,699	3,921	8,086	7,199	91	9,330	10,782	35,835
Rockingham	91,393	18,938	17,602	2,176	5,889	5,834	63	7,968	9,091	16,352
Rowan	139,933	31,331	23,850	3,600	8,836	8,335	96	11,136	12,755	22,283
Swain	14,346	3,228	2,791	371	899	875	10	1,195	1,349	2,357
Union	226,606	62,685	27,126	7,203	13,468	11,983	156	15,332	18,043	20,266
Wake	1,046,791	256,755	111,506	29,505	64,871	53,761	719	66,352	78,411	94,001
Watauga	53,922	7,039	8,016	809	3,806	3,095	37	3,866	4,427	11,717
Wayne	124,150	29,618	19,028	3,404	7,699	6,985	85	9,159	10,531	24,889
Yancey	17,678	3,337	4,350	383	1,153	1,216	12	1,726	1,924	3,350
Totals	**7,047,843**	**1,618,098**	**1,009,910**	**185,945**	**443,142**	**393,311**	**4,839**	**508,524**	**588,436**	**1,031,661**

NORTH CAROLINA

American Lung Association in North Carolina

www.lung.org/northcarolina

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	INC	INC	INC	INC	INC	INC	INC
Alexander	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Avery	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buncombe	1	0	0	0.3	B	3	4	0	3.0	D	7.8	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	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Catawba	DNC	DNC	DNC	DNC	DNC	1	2	0	1.3	C	8.9	PASS
Chatham	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Cumberland	0	0	0	0.0	A	0	0	0	0.0	A	8.4	PASS
Davidson	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	9.0	PASS
Davie	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duplin	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Durham	0	0	0	0.0	A	1	0	0	0.3	B	8.7	PASS
Edgecombe	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Forsyth	6	0	0	2.0	C	0	0	0	0.0	A	8.2	PASS
Franklin	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gaston	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Graham	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Granville	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Guilford	4	0	0	1.3	C	1	0	0	0.3	B	8.3	PASS
Haywood	4	0	0	1.3	C	INC	INC	INC	INC	INC	INC	INC
Jackson	4	0	0	1.3	C	3	2	0	2.0	C	8.0	PASS
Johnston	0	0	0	0.0	A	1	0	0	0.3	B	7.4	PASS
Lee	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Lenoir	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lincoln	4	1	0	1.8	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McDowell	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Macon	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Mecklenburg	17	0	0	5.7	F	0	0	0	0.0	A	9.0	PASS
Mitchell	DNC	DNC	DNC	DNC	DNC	1	3	0	1.8	C	7.8	PASS
Montgomery	0	0	0	0.0	A	0	0	0	0.0	A	7.2	PASS
New Hanover	0	0	0	0.0	A	0	0	0	0.0	A	5.9	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	7.2	PASS

NORTH CAROLINA (cont.)

American Lung Association in North Carolina

www.lung.org/northcarolina

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Robeson	DNC	DNC	DNC	DNC	DNC
Rockingham	3	0	0	1.0	C
Rowan	1	0	0	0.3	B
Swain	0	0	0	0.0	A
Union	6	0	0	2.0	C
Wake	2	0	0	0.7	B
Watauga	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC
Yancey	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	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	INC	INC	INC	INC	INC	INC	INC
Swain	8	4	0	4.7	F	8.1	PASS
Union	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wake	3	0	0	1.0	C	9.9	PASS
Watauga	INC	INC	INC	INC	INC	INC	INC
Wayne	INC	INC	INC	INC	INC	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	934	191	177	12	67	41	1	72	73	83
Burke	2,198	557	394	36	146	92	1	162	166	196
Burleigh	94,487	21,820	14,124	1,420	6,595	3,734	57	6,228	6,467	6,505
Cass	175,249	39,231	19,767	2,553	12,560	6,332	105	9,803	10,451	18,151
Dunn	4,366	1,003	632	65	303	177	3	293	310	420
McKenzie	12,621	3,916	980	255	801	403	8	595	666	981
Mercer	8,694	1,976	1,539	129	599	376	5	655	677	561
Oliver	1,870	460	360	30	125	82	1	146	149	191
Williams	34,337	9,491	3,101	618	2,288	1,157	21	1,740	1,914	2,292
Totals	**334,756**	**78,645**	**41,074**	**5,117**	**23,484**	**12,394**	**201**	**19,695**	**20,872**	**29,380**

NORTH DAKOTA

American Lung Association in North Dakota

www.lung.org/northdakota

HIGH OZONE DAYS 2014–2016

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 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Billings	3	1	0	1.5	C	INC	INC
Burke	5	4	0	3.7	F	4.1	PASS
Burleigh	7	1	0	2.8	D	4.8	PASS
Cass	4	0	0	1.3	C	INC	INC
Dunn	10	1	0	3.8	F	5.1	PASS
McKenzie	4	2	0	2.3	D	2.8	PASS
Mercer	6	2	0	3.0	D	INC	INC
Oliver	6	1	0	2.5	D	4.3	PASS
Williams	6	2	0	3.0	D	4.5	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	103,742	24,176	17,398	1,661	7,781	6,970	71	7,731	8,873	15,101
Ashtabula	98,231	21,855	17,791	1,501	7,483	6,972	67	7,867	9,021	17,202
Athens	66,186	9,829	7,809	675	5,499	4,108	45	4,057	4,768	16,044
Belmont	68,673	13,074	13,553	898	5,435	5,087	47	5,790	6,601	10,135
Butler	377,537	89,885	52,781	6,174	28,223	24,180	258	25,832	30,101	45,165
Clark	134,786	30,649	25,237	2,105	10,174	9,466	92	10,755	12,255	20,643
Clermont	203,022	47,913	30,631	3,291	15,249	13,606	139	14,827	17,249	21,281
Clinton	41,902	9,919	6,778	681	3,135	2,819	29	3,111	3,590	5,426
Cuyahoga	1,249,352	264,749	214,414	18,185	96,371	86,719	851	96,185	110,559	223,636
Delaware	196,463	53,167	24,634	3,652	14,122	12,208	135	12,941	15,232	9,083
Fayette	28,676	6,714	4,991	461	2,149	1,966	20	2,203	2,525	4,489
Franklin	1,264,518	297,962	143,293	20,467	94,825	75,552	864	76,804	90,649	205,476
Geauga	94,060	22,064	18,008	1,516	7,060	6,819	64	7,829	8,953	5,451
Greene	164,765	33,962	27,101	2,333	12,793	11,227	113	12,293	14,156	18,975
Hamilton	809,099	188,034	118,622	12,916	60,872	52,532	552	56,568	65,656	126,002
Jefferson	66,704	13,078	13,463	898	5,240	4,958	46	5,682	6,463	10,469
Knox	60,814	13,890	10,473	954	4,589	4,145	42	4,620	5,296	7,294
Lake	228,614	46,573	43,245	3,199	17,830	16,713	156	18,939	21,683	19,364
Lawrence	60,872	13,432	10,921	923	4,643	4,277	42	4,808	5,509	10,771
Licking	172,198	40,442	27,233	2,778	12,930	11,603	118	12,750	14,757	19,680
Lorain	306,365	68,807	52,821	4,726	23,278	21,286	210	23,756	27,318	36,828
Lucas	432,488	99,987	66,409	6,868	32,584	28,569	295	31,085	35,976	83,600
Madison	43,419	9,104	6,405	625	3,372	2,941	30	3,162	3,689	4,576
Mahoning	230,008	46,669	45,864	3,206	17,907	16,865	157	19,303	21,948	41,625
Medina	177,221	40,634	29,558	2,791	13,417	12,333	121	13,713	15,848	11,394
Miami	104,679	24,102	18,830	1,656	7,885	7,298	72	8,232	9,421	9,860
Montgomery	531,239	118,195	92,092	8,119	40,370	36,331	362	40,464	46,350	93,949
Noble	14,294	2,663	3,526	183	1,136	1,170	10	1,402	1,578	1,744
Portage	161,921	30,673	25,043	2,107	12,858	11,057	111	11,896	13,798	20,743
Preble	41,247	9,433	7,543	648	3,115	2,910	28	3,295	3,771	4,494
Scioto	76,088	16,596	13,240	1,140	5,816	5,240	52	5,836	6,688	16,051
Stark	373,612	81,230	69,245	5,580	28,591	26,488	255	29,950	34,216	48,072
Summit	540,300	115,257	91,834	7,917	41,651	37,655	369	41,741	48,082	72,687
Trumbull	201,825	41,885	41,211	2,877	15,617	14,878	138	17,148	19,457	34,839
Warren	227,063	57,133	31,569	3,924	16,729	14,739	156	15,869	18,564	11,823
Washington	60,610	12,006	12,295	825	4,747	4,489	41	5,151	5,852	8,100
Wood	130,219	26,668	19,327	1,832	10,114	8,440	89	8,991	10,395	14,060
Totals	**9,142,812**	**2,042,409**	**1,455,188**	**140,290**	**695,591**	**614,616**	**6,248**	**672,585**	**776,845**	**1,326,132**

OHIO

American Lung Association in Ohio

www.lung.org/ohio

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	5	0	0	1.7	C	0	0	0	0.0	A	8.9	PASS
Ashtabula	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Athens	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.2	PASS
Belmont	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Butler	19	0	0	6.3	F	0	0	0	0.0	A	10.2	PASS
Clark	11	0	0	3.7	F	0	0	0	0.0	A	9.1	PASS
Clermont	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cuyahoga	13	0	0	4.3	F	2	0	0	0.7	B	12.2	FAIL
Delaware	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Franklin	19	0	0	6.3	F	0	0	0	0.0	A	9.6	PASS
Geauga	18	0	0	6.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	5	0	0	1.7	C	0	0	0	0.0	A	8.6	PASS
Hamilton	24	1	0	8.5	F	1	0	0	0.3	B	10.7	PASS
Jefferson	2	0	0	0.7	B	6	0	0	2.0	C	10.1	PASS
Knox	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	22	0	0	7.3	F	0	0	0	0.0	A	7.9	PASS
Lawrence	6	0	0	2.0	C	0	0	0	0.0	A	7.1	PASS
Licking	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lorain	2	0	0	0.7	B	0	0	0	0.0	A	8.1	PASS
Lucas	8	0	0	2.7	D	1	0	0	0.3	B	9.8	PASS
Madison	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mahoning	1	0	0	0.3	B	0	0	0	0.0	A	9.6	PASS
Medina	2	0	0	0.7	B	0	0	0	0.0	A	8.7	PASS
Miami	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	8	0	0	2.7	D	1	0	0	0.3	B	INC	INC
Noble	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Portage	0	0	0	0.0	A	0	0	0	0.0	A	INC	INC
Preble	3	0	0	1.0	C	0	0	0	0.0	A	8.4	PASS
Scioto	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.3	PASS
Stark	14	0	0	4.7	F	1	0	0	0.3	B	10.8	PASS
Summit	1	0	0	0.3	B	1	0	0	0.3	B	11.0	PASS
Trumbull	9	0	0	3.0	D	0	0	0	0.0	A	INC	INC
Warren	17	0	0	5.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	4	0	0	1.3	C	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	22,098	5,917	3,362	580	1,606	1,383	16	1,831	1,994	6,347
Bryan	45,573	10,759	7,963	1,054	3,449	2,960	32	4,003	4,272	7,519
Caddo	29,557	7,555	4,744	740	2,182	1,882	21	2,512	2,717	5,877
Canadian	136,532	35,927	17,096	3,520	10,057	8,067	97	10,346	11,491	11,232
Carter	48,556	12,301	7,905	1,205	3,593	3,129	34	4,180	4,522	7,799
Cherokee	48,700	10,977	7,748	1,076	3,754	3,068	35	4,078	4,391	10,863
Cleveland	278,655	61,518	35,303	6,028	21,774	16,515	198	21,112	23,312	33,109
Comanche	122,136	29,313	14,486	2,872	9,317	7,009	88	8,899	9,877	18,024
Cotton	5,941	1,362	1,111	133	451	417	4	566	608	994
Creek	71,312	17,129	12,479	1,678	5,356	4,807	51	6,472	6,979	10,895
Dewey	4,819	1,251	936	123	351	326	3	450	476	623
Jefferson	6,230	1,494	1,246	146	466	438	4	603	640	1,346
Johnston	11,087	2,679	2,041	262	830	746	8	1,017	1,085	2,355
Kay	44,943	11,315	8,392	1,109	3,317	2,983	32	4,088	4,336	7,252
Lincoln	35,129	8,611	6,272	844	2,617	2,404	25	3,245	3,501	5,477
Love	9,997	2,496	1,850	245	740	664	7	908	965	1,376
McClain	38,682	9,826	5,904	963	2,865	2,473	28	3,263	3,566	4,137
Mayes	40,920	9,810	7,227	961	3,074	2,767	29	3,732	4,020	7,066
Oklahoma	782,970	201,935	101,112	19,786	58,084	46,138	556	59,492	65,641	124,834
Osage	47,806	10,719	9,399	1,050	3,650	3,403	34	4,656	4,970	7,139
Ottawa	31,691	7,927	5,779	777	2,347	2,089	22	2,850	3,032	5,858
Pittsburg	44,173	9,878	8,250	968	3,387	3,035	32	4,127	4,408	6,007
Sequoyah	41,294	9,720	7,282	952	3,121	2,795	29	3,765	4,056	7,978
Tulsa	642,940	163,882	86,911	16,058	47,808	38,834	456	50,364	55,457	99,417
Washington	52,087	12,225	9,853	1,198	3,932	3,550	37	4,852	5,162	7,333
Totals	**2,643,828**	**656,526**	**374,651**	**64,329**	**198,129**	**161,882**	**1,879**	**211,410**	**231,474**	**400,857**

OKLAHOMA

American Lung Association in Oklahoma

www.lung.org/oklahoma

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adair	0	0	0	0.0	A	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	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carter	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Cherokee	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cleveland	3	0	0	1.0	C	0	0	0	0.0	A	8.4	PASS
Comanche	1	0	0	0.3	B	0	0	0	0.0	A	7.5	PASS
Cotton	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Creek	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dewey	1	0	0	0.3	B	0	0	0	0.0	A	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	3	0	0	1.0	C	4	0	0	1.3	C	INC	INC
Lincoln	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Love	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
McClain	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mayes	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oklahoma	8	0	0	2.7	D	0	0	0	0.0	A	8.1	PASS
Osage	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ottawa	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pittsburg	0	0	0	0.0	A	0	0	0	0.0	A	8.1	PASS
Sequoyah	0	0	0	0.0	A	0	0	0	0.0	A	8.5	PASS
Tulsa	5	1	0	2.2	D	1	0	0	0.3	B	8.7	PASS
Washington	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC

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	408,062	88,959	70,138	4,971	33,554	21,906	219	28,136	31,288	35,366
Columbia	50,785	10,902	9,213	609	4,191	2,821	27	3,648	4,050	5,537
Crook	22,570	4,391	5,583	245	1,877	1,381	12	1,897	2,042	3,192
Deschutes	181,307	37,543	35,076	2,098	15,024	10,056	97	13,206	14,511	19,113
Harney	7,292	1,531	1,650	86	597	428	4	579	627	1,171
Jackson	216,527	44,669	46,048	2,496	17,850	12,236	116	16,408	17,828	31,189
Josephine	85,904	16,821	21,992	940	7,109	5,271	46	7,305	7,823	15,239
Klamath	66,443	14,404	13,507	805	5,417	3,687	36	4,908	5,354	12,408
Lake	7,837	1,451	1,877	81	662	482	4	655	709	1,122
Lane	369,519	69,498	68,269	3,883	31,356	19,904	198	25,929	28,502	66,339
Marion	336,316	84,032	50,860	4,695	26,530	16,315	180	20,729	23,084	44,581
Multnomah	799,766	154,598	100,640	8,638	68,384	38,611	429	46,871	53,287	111,262
Umatilla	76,456	19,666	11,303	1,099	5,978	3,677	41	4,657	5,197	11,369
Wasco	26,115	5,845	5,436	327	2,104	1,439	14	1,931	2,097	3,624
Washington	582,779	137,549	73,485	7,686	47,195	27,558	312	33,711	38,271	51,702
Totals	**3,237,678**	**691,859**	**515,077**	**38,658**	**267,828**	**165,771**	**1,735**	**210,569**	**234,671**	**413,214**

OREGON

American Lung Association in Oregon

www.lung.org/oregon

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Clackamas	4	0	0	1.3	C
Columbia	0	0	0	0.0	A
Crook	DNC	DNC	DNC	DNC	DNC
Deschutes	INC	INC	INC	INC	INC
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	2	0	0	0.7	B
Umatilla	4	0	0	1.3	C
Wasco	INC	INC	INC	INC	INC
Washington	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Clackamas	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Crook	6	2	0	3.0	D	8.6	PASS
Deschutes	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harney	3	1	0	1.5	C	8.5	PASS
Jackson	5	1	0	2.2	D	9.5	PASS
Josephine	1	0	0	0.3	B	7.2	PASS
Klamath	3	1	0	1.5	C	8.3	PASS
Lake	9	1	0	3.5	F	7.8	PASS
Lane	8	1	0	3.2	D	8.5	PASS
Marion	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Multnomah	0	1	0	0.5	B	6.4	PASS
Umatilla	INC	INC	INC	INC	INC	INC	INC
Wasco	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	1	1	0	0.8	B	7.0	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	102,180	20,719	19,859	1,821	8,611	6,205	66	8,295	9,629	9,218
Allegheny	1,225,365	232,012	220,511	20,388	105,401	72,243	789	94,220	109,638	137,017
Armstrong	66,486	12,818	14,150	1,126	5,643	4,206	43	5,726	6,633	9,100
Beaver	167,429	32,858	34,266	2,887	14,177	10,379	108	14,010	16,242	15,998
Berks	414,812	93,946	68,350	8,255	34,203	23,413	268	30,351	35,367	52,766
Blair	124,650	25,704	25,229	2,259	10,403	7,528	80	10,141	11,753	16,430
Bradford	60,770	13,348	12,320	1,173	4,991	3,695	39	5,013	5,809	6,904
Bucks	626,399	131,092	110,082	11,519	52,841	37,531	404	49,364	57,473	40,872
Cambria	134,732	25,906	28,873	2,276	11,411	8,410	87	11,439	13,243	20,033
Centre	161,464	24,654	21,004	2,166	14,722	8,633	105	10,236	12,038	24,173
Chester	516,312	119,549	79,511	10,505	42,545	28,983	333	37,222	43,459	35,349
Clearfield	80,596	14,886	15,974	1,308	6,944	4,987	52	6,660	7,731	10,543
Cumberland	248,506	50,568	44,186	4,444	20,993	14,411	161	18,817	21,892	18,620
Dauphin	273,707	61,435	43,803	5,398	22,677	15,388	176	19,819	23,116	30,247
Delaware	563,402	125,082	88,105	10,991	46,885	31,486	363	40,303	47,042	58,546
Elk	30,480	5,894	6,523	518	2,589	1,956	20	2,673	3,096	3,025
Erie	276,207	59,942	45,888	5,267	23,040	15,667	178	20,265	23,616	41,331
Franklin	153,851	34,585	29,037	3,039	12,585	8,961	99	11,948	13,867	13,779
Greene	37,197	7,171	6,666	630	3,191	2,212	24	2,893	3,367	5,362
Indiana	86,364	15,707	15,689	1,380	7,484	5,071	56	6,595	7,673	16,198
Lackawanna	211,321	42,677	41,209	3,750	17,782	12,645	136	16,863	19,569	28,739
Lancaster	538,500	128,457	92,089	11,288	43,467	29,881	347	39,063	45,440	56,082
Lawrence	87,294	17,578	18,112	1,545	7,330	5,395	56	7,311	8,471	11,672
Lebanon	138,863	31,962	26,249	2,809	11,265	8,014	90	10,697	12,411	13,361
Lehigh	363,147	82,513	59,446	7,251	29,889	20,263	234	26,183	30,512	48,796
Luzerne	316,383	61,918	61,655	5,441	26,865	19,120	204	25,471	29,567	44,618
Lycoming	115,248	23,738	21,232	2,086	9,691	6,791	74	8,959	10,413	16,033
Mercer	112,913	22,384	23,325	1,967	9,517	6,946	73	9,387	10,877	17,133
Monroe	166,098	33,572	26,678	2,950	14,234	9,829	107	12,675	14,799	19,303
Montgomery	821,725	178,353	141,314	15,672	68,482	47,521	530	62,067	72,265	49,697
Northampton	302,294	61,111	54,909	5,370	25,590	17,882	195	23,512	27,344	27,078
Perry	45,820	9,957	7,793	875	3,830	2,695	30	3,527	4,108	4,082
Philadelphia	1,567,872	346,207	201,694	30,422	131,464	80,681	1,007	98,063	115,085	384,148
Somerset	75,061	13,652	16,057	1,200	6,452	4,751	49	6,447	7,468	9,885
Tioga	41,467	8,248	8,590	725	3,489	2,538	27	3,430	3,974	5,289
Washington	207,981	40,915	41,006	3,595	17,651	12,756	134	17,080	19,823	19,752
Westmoreland	355,458	65,864	77,167	5,788	30,422	22,752	229	31,049	35,953	34,269
York	443,744	98,587	73,682	8,663	36,836	25,454	287	33,082	38,553	42,508
Totals	**11,262,098**	**2,375,569**	**1,922,233**	**208,748**	**945,593**	**647,283**	**7,262**	**840,856**	**979,318**	**1,397,956**

PENNSYLVANIA

American Lung Association in Pennsylvania

www.lung.org/pennsylvania

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	7	0	0	2.3	D	1	0	0	0.3	B	8.6	PASS
Allegheny	21	0	0	7.0	F	21	3	0	8.5	F	12.8	FAIL
Armstrong	10	0	0	3.3	F	0	0	0	0.0	A	11.0	PASS
Beaver	13	0	0	4.3	F	1	0	0	0.3	B	10.1	PASS
Berks	12	0	0	4.0	F	8	0	0	2.7	D	9.6	PASS
Blair	6	0	0	2.0	C	0	0	0	0.0	A	10.1	PASS
Bradford	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC
Bucks	26	2	0	9.7	F	INC	INC	INC	INC	INC	INC	INC
Cambria	1	0	0	0.3	B	1	0	0	0.3	B	10.7	PASS
Centre	4	0	0	1.3	C	0	0	0	0.0	A	8.1	PASS
Chester	14	1	0	5.2	F	0	0	0	0.0	A	9.6	PASS
Clearfield	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cumberland	DNC	DNC	DNC	DNC	DNC	4	0	0	1.3	C	9.3	PASS
Dauphin	8	0	0	2.7	D	10	0	0	3.3	F	10.0	PASS
Delaware	17	0	0	5.7	F	1	0	0	0.3	B	11.5	PASS
Elk	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	5	0	0	1.7	C	0	0	0	0.0	A	9.3	PASS
Franklin	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC
Indiana	10	0	0	3.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lackawanna	7	0	0	2.3	D	0	0	0	0.0	A	INC	INC
Lancaster	8	0	0	2.7	D	21	1	0	7.5	F	12.8	FAIL
Lawrence	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lebanon	16	0	0	5.3	F	11	0	0	3.7	F	11.2	PASS
Lehigh	9	0	0	3.0	D	INC	INC	INC	INC	INC	INC	INC
Luzerne	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lycoming	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	9	0	0	3.0	D	0	1	0	0.5	B	9.1	PASS
Monroe	4	0	0	1.3	C	0	0	0	0.0	A	7.6	PASS
Montgomery	17	0	0	5.7	F	INC	INC	INC	INC	INC	INC	INC
Northampton	11	0	0	3.7	F	6	0	0	2.0	C	9.3	PASS
Perry	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Philadelphia	25	3	0	9.8	F	5	0	0	1.7	C	11.4	PASS
Somerset	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tioga	2	0	0	0.7	B	0	0	0	0.0	A	INC	INC
Washington	10	0	0	3.3	F	1	0	0	0.3	B	11.0	PASS
Westmoreland	9	0	0	3.0	D	0	0	0	0.0	A	8.7	PASS
York	12	0	0	4.0	F	2	0	0	0.7	B	9.9	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	164,614	31,150	30,210	2,918	14,549	9,575	117	10,836	14,046	15,726
Providence	633,673	131,667	93,119	12,333	53,842	32,700	450	36,035	46,612	96,214
Washington	126,288	21,629	24,405	2,026	11,367	7,481	90	8,524	10,951	11,789
Totals	**924,575**	**184,446**	**147,734**	**17,276**	**79,757**	**49,757**	**657**	**55,396**	**71,610**	**123,729**

RHODE ISLAND

American Lung Association in Rhode Island

www.lung.org/rhodeisland

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Kent	7	1	0	2.8	D
Providence	8	1	0	3.2	D
Washington	11	1	0	4.2	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	0	0	0	0.0	A	4.5	PASS
Providence	1	1	0	0.8	B	7.6	PASS
Washington	0	0	0	0.0	A	5.0	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	24,872	5,283	5,096	426	1,745	1,671	16	2,191	2,797	3,689
Aiken	167,458	36,673	31,023	2,954	11,639	10,787	110	13,926	17,962	28,039
Anderson	196,569	45,231	34,670	3,643	13,467	12,351	129	15,861	20,536	29,703
Berkeley	210,898	51,009	27,418	4,109	14,157	11,777	140	14,379	19,221	25,313
Charleston	396,484	79,126	60,693	6,374	28,059	23,832	261	29,489	38,985	57,691
Cherokee	56,646	13,336	8,951	1,074	3,849	3,410	37	4,305	5,637	10,318
Chesterfield	46,013	10,485	7,743	845	3,170	2,898	30	3,708	4,824	9,310
Colleton	37,923	8,515	7,554	686	2,622	2,509	25	3,286	4,202	8,774
Darlington	67,234	15,296	11,971	1,232	4,626	4,267	44	5,491	7,104	13,878
Edgefield	26,358	4,949	4,533	399	1,908	1,721	18	2,189	2,857	4,180
Florence	138,742	33,196	22,315	2,674	9,372	8,330	91	10,537	13,766	24,811
Greenville	498,766	116,015	74,839	9,345	33,959	29,451	328	36,778	48,460	53,113
Horry	322,342	60,209	71,727	4,850	23,337	22,646	212	29,897	37,958	47,767
Lexington	286,196	66,988	42,918	5,396	19,503	17,122	189	21,483	28,283	33,254
Oconee	76,355	15,356	17,070	1,237	5,440	5,351	50	7,102	8,994	11,021
Pickens	122,863	23,912	19,497	1,926	8,731	7,407	81	9,174	12,095	17,297
Richland	409,549	88,327	49,416	7,115	28,258	22,228	270	26,361	35,742	61,910
Spartanburg	301,463	70,352	47,497	5,667	20,523	18,106	198	22,810	29,890	45,637
York	258,526	63,199	35,392	5,091	17,372	14,935	170	18,525	24,586	27,264
Totals	**3,645,257**	**807,457**	**580,323**	**65,041**	**251,736**	**220,797**	**2,400**	**277,492**	**363,898**	**512,969**

SOUTH CAROLINA

American Lung Association in South Carolina

www.lung.org/southcarolina

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Abbeville	0	0	0	0.0	A
Aiken	0	0	0	0.0	A
Anderson	0	0	0	0.0	A
Berkeley	0	0	0	0.0	A
Charleston	0	0	0	0.0	A
Cherokee	2	0	0	0.7	B
Chesterfield	0	0	0	0.0	A
Colleton	0	0	0	0.0	A
Darlington	0	0	0	0.0	A
Edgefield	2	0	0	0.7	B
Florence	DNC	DNC	DNC	DNC	DNC
Greenville	2	0	0	0.7	B
Horry	INC	INC	INC	INC	INC
Lexington	DNC	DNC	DNC	DNC	DNC
Oconee	1	0	0	0.3	B
Pickens	1	0	0	0.3	B
Richland	3	0	0	1.0	C
Spartanburg	2	0	0	0.7	B
York	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Abbeville	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Aiken	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Anderson	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkeley	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charleston	2	2	0	1.7	C	7.8	PASS
Cherokee	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chesterfield	0	0	0	0.0	A	7.8	PASS
Colleton	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Darlington	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Edgefield	1	1	0	0.8	B	8.7	PASS
Florence	0	0	0	0.0	A	8.6	PASS
Greenville	4	2	0	2.3	D	9.3	PASS
Horry	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lexington	0	2	0	1.0	C	9.4	PASS
Oconee	0	0	0	0.0	A	INC	INC
Pickens	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richland	0	2	0	1.0	C	8.9	PASS
Spartanburg	0	0	0	0.0	A	8.7	PASS
York	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	34,135	6,925	3,807	558	1,646	1,093	20	1,838	1,579	4,307
Brown	39,128	9,325	6,344	751	1,851	1,547	23	2,659	2,378	4,025
Codington	28,063	6,866	4,572	553	1,320	1,122	16	1,922	1,731	3,264
Custer	8,596	1,371	2,328	110	462	474	5	849	761	882
Hughes	17,600	4,174	2,863	336	836	711	10	1,214	1,097	1,430
Jackson	3,326	1,115	448	90	137	111	2	191	170	1,011
Meade	27,693	6,519	4,057	525	1,308	1,046	16	1,777	1,591	2,666
Minnehaha	187,318	47,340	24,108	3,813	8,626	6,720	109	11,198	10,147	18,046
Pennington	109,372	25,566	18,548	2,059	5,216	4,438	64	7,661	6,852	15,515
Union	14,934	3,608	2,483	291	708	616	9	1,050	956	981
Totals	**470,165**	**112,809**	**69,558**	**9,087**	**22,108**	**17,878**	**273**	**30,359**	**27,264**	**52,127**

SOUTH DAKOTA

American Lung Association in South Dakota

www.lung.org/southdakota

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Brookings	1	0	0	0.3	B
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	2	0	0	0.7	B
Pennington	DNC	DNC	DNC	DNC	DNC
Union	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

	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	6.0	PASS
Codington	1	0	0	0.3	B	5.5	PASS
Custer	2	0	0	0.7	B	2.8	PASS
Hughes	INC	INC	INC	INC	INC	INC	INC
Jackson	2	0	0	0.7	B	3.7	PASS
Meade	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Minnehaha	3	0	0	1.0	C	7.5	PASS
Pennington	2	0	0	0.7	B	7.2	PASS
Union	4	0	0	1.3	C	7.5	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	75,936	15,839	14,972	1,543	6,593	6,545	57	7,678	8,362	10,753
Blount	128,670	26,542	24,938	2,585	11,213	11,096	97	12,964	14,167	14,401
Claiborne	31,757	6,131	6,112	597	2,811	2,733	24	3,178	3,463	7,735
Davidson	684,410	145,977	78,389	14,217	59,206	49,096	515	51,842	58,242	99,415
DeKalb	19,361	4,255	3,530	414	1,659	1,619	15	1,875	2,057	3,760
Dyer	37,708	9,082	6,475	885	3,143	3,011	28	3,465	3,798	7,402
Hamilton	357,738	75,244	59,776	7,328	31,017	28,938	269	32,854	36,112	47,050
Jefferson	53,535	10,794	10,597	1,051	4,689	4,641	40	5,439	5,922	8,112
Knox	456,132	96,791	69,105	9,427	39,466	35,585	344	39,639	43,794	65,480
Lawrence	43,081	10,846	7,611	1,056	3,537	3,434	33	3,986	4,352	7,076
Loudon	51,454	10,088	13,203	982	4,509	4,814	39	5,947	6,285	5,414
McMinn	52,850	11,330	10,210	1,103	4,556	4,507	40	5,274	5,752	8,740
Madison	97,663	22,320	15,713	2,174	8,279	7,728	73	8,750	9,651	17,777
Maury	89,981	21,075	13,942	2,053	7,581	7,066	68	7,956	8,828	10,204
Montgomery	195,734	52,623	17,730	5,125	15,729	12,391	148	12,688	14,323	24,640
Putnam	75,931	16,030	12,508	1,561	6,556	5,929	58	6,707	7,285	14,046
Roane	52,874	10,131	11,671	987	4,689	4,848	40	5,792	6,285	7,416
Sevier	96,673	20,273	18,250	1,974	8,390	8,242	73	9,588	10,497	14,386
Shelby	934,603	235,800	117,102	22,965	76,992	67,967	702	73,842	83,104	190,199
Sullivan	156,667	30,785	32,987	2,998	13,797	13,907	118	16,483	17,856	25,304
Sumner	180,063	43,217	27,778	4,209	15,065	14,136	136	15,929	17,717	17,288
Williamson	219,107	60,548	27,316	5,897	17,552	16,276	165	17,829	20,390	11,292
Wilson	132,781	31,801	20,180	3,097	11,127	10,456	100	11,751	13,123	10,632
Totals	**4,224,709**	**967,522**	**620,095**	**94,229**	**358,157**	**324,964**	**3,183**	**361,455**	**401,364**	**628,522**

TENNESSEE

American Lung Association in Tennessee

www.lung.org/tennessee

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	4	0	0	1.3	C	1	2	0	1.3	C	8.6	PASS
Claiborne	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davidson	8	0	0	2.7	D	1	0	0	0.3	B	9.6	PASS
DeKalb	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dyer	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.6	PASS
Hamilton	6	0	0	2.0	C	0	1	0	0.5	B	8.7	PASS
Jefferson	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	3	0	0	1.0	C	2	3	0	2.2	D	10.4	PASS
Lawrence	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.3	PASS
Loudon	9	0	0	3.0	D	0	2	0	1.0	C	9.5	PASS
McMinn	INC	INC	INC	INC	INC	0	1	0	0.5	B	8.7	PASS
Madison	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.5	PASS
Maury	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	INC	INC
Montgomery	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.5	PASS
Putnam	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.8	PASS
Roane	DNC	DNC	DNC	DNC	DNC	0	1	0	0.5	B	8.6	PASS
Sevier	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	11	0	0	3.7	F	1	0	0	0.3	B	8.6	PASS
Sullivan	2	0	0	0.7	B	1	0	0	0.3	B	7.9	PASS
Sumner	3	0	0	1.0	C	0	0	0	0.0	A	8.6	PASS
Williamson	2	0	0	0.7	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	340,411	95,118	35,667	7,527	18,680	11,093	180	17,136	24,743	42,739
Bexar	1,928,680	500,693	226,635	39,620	109,190	67,683	1,019	105,325	153,462	306,859
Bowie	93,860	22,314	15,030	1,766	5,551	3,779	50	6,078	8,778	16,884
Brazoria	354,195	94,410	40,521	7,471	19,859	12,651	188	19,542	29,132	34,053
Brewster	9,200	1,795	1,949	142	583	425	5	705	998	1,365
Cameron	422,135	131,178	55,566	10,380	22,447	14,544	222	23,197	33,230	121,665
Collin	939,585	250,361	98,477	19,811	52,505	33,199	496	50,639	76,637	58,619
Dallas	2,574,984	687,549	260,466	54,407	143,512	87,183	1,359	133,094	197,630	413,956
Denton	806,180	205,722	76,017	16,279	45,522	27,627	426	41,646	62,961	65,057
Ellis	168,499	45,250	21,021	3,581	9,462	6,216	89	9,694	14,438	16,121
El Paso	837,918	232,500	99,700	18,398	46,367	28,871	442	45,175	65,423	186,707
Galveston	329,431	80,882	44,457	6,400	19,126	12,748	174	19,992	29,708	41,747
Gregg	123,745	32,201	18,295	2,548	7,082	4,739	65	7,576	10,964	20,929
Harris	4,589,928	1,239,122	447,828	98,053	254,461	153,270	2,428	233,148	346,643	752,261
Harrison	66,534	16,985	10,546	1,344	3,848	2,668	35	4,287	6,247	11,328
Hidalgo	849,843	282,889	93,014	22,385	43,402	26,565	448	41,665	59,665	262,028
Hood	56,857	11,966	13,865	947	3,579	2,789	30	4,715	6,649	5,754
Hunt	92,073	21,939	14,416	1,736	5,436	3,739	49	5,977	8,746	14,584
Jefferson	254,679	60,902	34,888	4,819	14,911	9,746	135	15,355	22,480	47,920
Johnson	163,274	42,534	22,540	3,366	9,310	6,240	86	9,850	14,532	18,049
Kaufman	118,350	32,576	14,434	2,578	6,580	4,282	63	6,674	9,909	13,328
McLennan	247,934	61,541	34,550	4,870	14,357	9,205	131	14,630	20,972	44,099
Montgomery	556,203	148,016	70,297	11,713	31,352	20,693	294	32,298	48,134	59,836
Navarro	48,523	12,751	8,124	1,009	2,789	1,968	26	3,190	4,618	8,491
Nueces	361,350	90,586	49,124	7,168	20,840	13,546	191	21,393	31,138	53,441
Orange	84,964	21,169	13,334	1,675	4,950	3,417	45	5,475	7,995	11,751
Parker	129,441	31,703	20,117	2,509	7,579	5,313	68	8,463	12,537	11,838
Polk	47,916	9,794	9,282	775	2,987	2,184	26	3,562	5,178	8,845
Randall	132,501	32,032	18,527	2,535	7,739	5,032	70	7,970	11,554	11,784
Rockwall	93,978	25,473	11,778	2,016	5,262	3,492	50	5,444	8,146	4,845
Smith	225,290	55,879	36,070	4,422	13,153	8,918	119	14,391	20,648	34,487
Tarrant	2,016,872	539,423	217,694	42,685	112,659	70,413	1,064	108,112	161,242	270,348
Travis	1,199,323	270,290	108,425	21,388	70,194	40,350	636	60,587	89,778	143,948
Victoria	92,467	23,813	14,038	1,884	5,318	3,567	49	5,725	8,246	12,900
Webb	271,193	91,543	24,517	7,244	13,649	8,080	143	12,362	18,075	85,150
Totals	**20,628,316**	**5,502,899**	**2,281,209**	**435,451**	**1,154,241**	**716,236**	**10,898**	**1,105,072**	**1,631,238**	**3,213,716**

TEXAS

American Lung Association in Texas

www.lung.org/texas

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bell	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bexar	21	3	0	8.5	F	0	0	0	0.0	A	8.4	PASS
Bowie	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	INC	INC
Brazoria	17	5	0	8.2	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	18	0	0	6.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dallas	16	0	0	5.3	F	0	0	0	0.0	A	9.5	PASS
Denton	40	5	0	15.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ellis	3	0	0	1.0	C	0	0	0	0.0	A	9.1	PASS
El Paso	16	0	0	5.3	F	3	0	0	1.0	C	9.4	PASS
Galveston	25	3	0	9.8	F	0	0	0	0.0	A	7.4	PASS
Gregg	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harris	46	13	1	22.5	F	3	0	0	1.0	C	11.2	PASS
Harrison	1	0	0	0.3	B	0	0	0	0.0	A	8.8	PASS
Hidalgo	0	0	0	0.0	A	0	0	0	0.0	A	10.1	PASS
Hood	9	3	0	4.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hunt	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	15	1	0	5.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	13	1	0	4.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kaufman	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McLennan	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	13	0	0	4.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Navarro	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nueces	3	0	0	1.0	C	0	0	0	0.0	A	9.9	PASS
Orange	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Parker	24	1	0	8.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Randall	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockwall	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Smith	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tarrant	44	4	0	16.7	F	0	0	0	0.0	A	9.2	PASS
Travis	11	0	0	3.7	F	0	0	0	0.0	A	9.6	PASS
Victoria	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Webb	0	0	0	0.0	A	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	53,139	17,104	6,715	1,000	3,002	1,516	14	2,240	2,939	5,008
Cache	122,753	37,673	11,165	2,202	7,063	3,042	32	4,117	5,403	15,209
Carbon	20,399	5,428	3,315	317	1,249	666	5	1,025	1,326	3,013
Daggett	1,095	238	253	14	72	43	0	70	89	84
Davis	342,281	112,175	32,642	6,558	19,141	8,878	89	12,325	16,467	21,271
Duchesne	20,337	7,067	2,316	413	1,105	540	5	786	1,031	2,765
Garfield	4,986	1,212	1,054	71	315	184	1	299	380	524
Salt Lake	1,121,354	313,040	113,730	18,301	67,241	31,192	292	43,238	57,854	104,297
San Juan	16,895	5,472	1,930	320	952	474	4	686	914	5,138
Tooele	64,833	21,687	5,833	1,268	3,590	1,665	17	2,291	3,087	5,189
Uintah	36,373	12,335	3,560	721	2,000	937	9	1,314	1,748	4,094
Utah	592,299	202,499	43,933	11,838	32,343	13,464	154	17,611	23,392	66,112
Washington	160,245	43,410	33,420	2,538	9,749	5,535	42	9,062	11,328	19,795
Weber	247,560	71,246	28,220	4,165	14,676	7,053	64	10,064	13,338	26,535
Totals	**2,804,549**	**850,586**	**288,086**	**49,726**	**162,497**	**75,189**	**730**	**105,127**	**139,296**	**279,034**

UTAH

American Lung Association in Utah

www.lung.org/utah

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Box Elder	4	0	0	1.3	C
Cache	2	0	0	0.7	B
Carbon	2	0	0	0.7	B
Daggett	INC	INC	INC	INC	INC
Davis	19	0	0	6.3	F
Duchesne	9	3	0	4.5	F
Garfield	INC	INC	INC	INC	INC
Salt Lake	40	0	0	13.3	F
San Juan	1	0	0	0.3	B
Tooele	9	1	0	3.5	F
Uintah	12	7	2	8.8	F
Utah	24	1	0	8.5	F
Washington	4	0	0	1.3	C
Weber	21	0	0	7.0	F

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Box Elder	10	1	0	3.8	F	6.4	PASS
Cache	23	1	0	8.2	F	INC	INC
Carbon	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Daggett	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davis	13	0	0	4.3	F	7.3	PASS
Duchesne	INC	INC	INC	INC	INC	INC	INC
Garfield	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Salt Lake	27	7	0	12.5	F	7.8	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	14	1	0	5.2	F	8.0	PASS
Washington	0	0	0	0.0	A	INC	INC
Weber	17	2	0	6.7	F	8.8	PASS

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	36,191	6,943	8,007	576	2,927	1,808	22	2,595	2,675	4,815
Chittenden	161,531	29,538	22,402	2,453	13,460	6,746	100	8,669	9,700	14,667
Rutland	59,310	10,699	12,370	888	4,883	2,951	37	4,158	4,328	7,591
Totals	**257,032**	**47,180**	**42,779**	**3,917**	**21,270**	**11,505**	**159**	**15,421**	**16,703**	**27,073**

VERMONT

American Lung Association in Vermont

www.lung.org/vermont

HIGH OZONE DAYS 2014–2016

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

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bennington	0	0	0	0.0	A	5.8	PASS
Chittenden	0	0	0	0.0	A	6.0	PASS
Rutland	6	0	0	2.0	C	8.1	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	106,878	21,718	18,938	1,749	7,275	5,379	62	7,435	9,370	8,524
Arlington	230,050	40,787	22,368	3,285	16,119	9,539	135	11,856	15,515	17,151
Caroline	30,178	7,067	4,816	569	1,983	1,463	18	2,003	2,549	2,937
Charles City	7,071	1,099	1,638	89	515	433	4	621	780	877
Chesterfield	339,009	81,407	47,274	6,557	22,154	15,834	198	21,257	27,370	23,468
Fairfax	1,138,652	271,021	141,416	21,831	74,607	51,315	669	67,618	87,752	67,736
Fauquier	69,069	16,194	11,057	1,304	4,560	3,460	41	4,747	6,079	3,978
Frederick	84,421	19,477	13,957	1,569	5,578	4,187	50	5,763	7,329	5,677
Giles	16,857	3,500	3,483	282	1,145	918	10	1,304	1,633	2,032
Hanover	104,392	23,244	17,470	1,872	6,992	5,333	61	7,349	9,381	5,900
Henrico	326,501	75,676	47,701	6,096	21,512	15,336	190	20,681	26,476	29,583
Loudoun	385,945	110,856	33,707	8,930	23,691	15,200	227	19,226	25,465	13,511
Madison	13,078	2,650	2,811	213	895	734	8	1,048	1,312	1,444
Page	23,654	4,717	4,927	380	1,625	1,308	14	1,858	2,330	3,833
Prince Edward	23,142	3,730	3,766	300	1,646	1,108	14	1,491	1,876	4,274
Prince William	455,210	125,863	41,462	10,138	28,323	18,134	268	22,993	30,351	33,308
Roanoke	94,031	19,160	19,493	1,543	6,414	5,128	55	7,282	9,114	6,774
Rockbridge	22,392	3,933	5,601	317	1,581	1,350	13	1,967	2,435	2,735
Rockingham	79,744	17,661	14,848	1,423	5,317	4,100	47	5,739	7,222	7,575
Stafford	144,361	37,801	14,451	3,045	9,178	6,045	85	7,758	10,210	7,935
Wythe	29,016	5,853	5,923	471	1,988	1,590	17	2,252	2,828	4,135
Bristol City	16,960	3,370	3,443	271	1,161	907	10	1,281	1,602	3,953
Hampton City	135,410	28,972	19,810	2,334	9,103	6,341	79	8,510	10,871	21,458
Lynchburg City	80,212	15,470	11,584	1,246	5,476	3,525	47	4,669	5,885	12,336
Norfolk City	245,115	49,085	25,569	3,954	16,662	9,994	145	12,588	16,322	45,219
Richmond City	223,170	40,104	26,322	3,230	15,612	9,843	130	12,638	16,361	55,062
Salem City	25,549	4,989	4,549	402	1,759	1,307	15	1,805	2,280	2,160
Suffolk City	89,273	22,100	12,178	1,780	5,775	4,105	52	5,499	7,083	10,303
Virginia Beach City	452,602	101,749	59,839	8,196	30,016	20,339	266	26,911	34,593	36,494
Totals	**4,991,942**	**1,159,253**	**640,401**	**93,379**	**328,661**	**224,255**	**2,929**	**296,151**	**382,372**	**440,372**

VIRGINIA

American Lung Association in Virginia

www.lung.org/virginia

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albemarle	1	0	0	0.3	B	0	0	0	0.0	A	7.1	PASS
Arlington	16	1	0	5.8	F	1	0	0	0.3	B	8.5	PASS
Caroline	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charles City	4	0	0	1.3	C	0	0	0	0.0	A	7.3	PASS
Chesterfield	1	0	0	0.3	B	0	0	0	0.0	A	8.0	PASS
Fairfax	10	0	0	3.3	F	1	0	0	0.3	B	7.6	PASS
Fauquier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Frederick	0	0	0	0.0	A	0	0	0	0.0	A	8.5	PASS
Giles	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hanover	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henrico	6	0	0	2.0	C	0	0	0	0.0	A	7.6	PASS
Loudoun	6	0	0	2.0	C	0	0	0	0.0	A	8.2	PASS
Madison	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Page	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Prince Edward	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Prince William	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Roanoke	0	0	0	0.0	A	1	0	0	0.3	B	7.5	PASS
Rockbridge	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockingham	1	0	0	0.3	B	0	0	0	0.0	A	8.1	PASS
Stafford	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wythe	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bristol City	DNC	DNC	DNC	DNC	DNC	1	0	0	0.3	B	8.0	PASS
Hampton City	2	0	0	0.7	B	0	0	0	0.0	A	6.9	PASS
Lynchburg City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.2	PASS
Norfolk City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.5	PASS
Richmond City	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC
Salem City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	8.2	PASS
Suffolk City	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Virginia Beach City	DNC	DNC	DNC	DNC	DNC	0	0	0	0.0	A	7.5	PASS

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	193,686	51,877	27,348	3,792	13,722	8,354	109	11,047	13,334	20,153
Chelan	76,338	18,207	14,049	1,331	5,611	3,675	43	5,126	5,971	8,665
Clallam	74,570	12,942	21,135	946	5,911	4,423	42	6,716	7,388	11,110
Clark	467,018	115,065	68,771	8,411	34,093	20,987	263	27,848	33,651	41,909
King	2,149,970	443,627	273,008	32,428	165,229	94,865	1,211	120,141	148,825	196,841
Kitsap	264,811	54,658	45,075	3,995	20,305	12,753	149	17,289	20,502	25,729
Kittitas	44,866	7,776	6,959	568	3,568	2,074	25	2,718	3,236	7,724
Okanogan	41,554	9,569	8,702	699	3,087	2,128	23	3,053	3,504	8,082
Pierce	861,312	204,431	115,083	14,944	63,604	37,600	485	48,628	59,526	102,303
Skagit	123,681	27,195	24,678	1,988	9,303	6,210	70	8,782	10,131	13,787
Snohomish	787,620	179,595	101,121	13,128	59,073	35,051	444	44,879	55,801	62,396
Spokane	499,072	110,895	77,640	8,106	37,517	22,984	281	30,646	36,696	64,514
Thurston	275,222	59,774	45,283	4,369	20,820	12,986	155	17,521	20,841	28,354
Whatcom	216,800	42,654	35,929	3,118	16,780	10,216	122	13,713	16,216	32,082
Yakima	249,636	74,588	33,451	5,452	16,898	10,109	141	13,327	15,999	44,819
Totals	**6,326,156**	**1,412,853**	**898,232**	**103,277**	**475,520**	**284,415**	**3,561**	**371,435**	**451,621**	**668,468**

WASHINGTON

American Lung Association in Washington

www.lung.org/washington

HIGH OZONE DAYS 2014–2016

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	7	0	0	2.3	D
Kitsap	DNC	DNC	DNC	DNC	DNC
Kittitas	DNC	DNC	DNC	DNC	DNC
Okanogan	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 2014–2016

	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	5.6	PASS
Clallam	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	4	2	0	2.3	D	INC	INC
King	3	0	0	1.0	C	6.2	PASS
Kitsap	0	0	0	0.0	A	INC	INC
Kittitas	INC	INC	INC	INC	INC	INC	INC
Okanogan	INC	INC	INC	INC	INC	INC	INC
Pierce	8	2	0	3.7	F	7.0	PASS
Skagit	0	0	0	0.0	A	INC	INC
Snohomish	16	2	0	6.3	F	7.4	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	6.3	PASS
Yakima	9	4	0	5.0	F	8.8	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	113,525	27,158	15,938	2,557	10,246	11,627	90	11,552	12,096	14,461
Brooke	22,977	4,045	5,223	381	2,228	2,758	18	2,989	3,003	2,955
Cabell	95,987	19,213	17,002	1,809	9,034	10,149	76	10,493	10,713	20,129
Gilmer	8,249	1,179	1,341	111	833	894	7	893	925	1,706
Greenbrier	35,279	6,892	7,953	649	3,340	4,166	28	4,530	4,548	5,520
Hancock	29,590	5,732	6,284	540	2,816	3,507	23	3,755	3,803	3,876
Harrison	68,400	14,793	12,703	1,393	6,330	7,560	54	7,916	8,085	9,851
Kanawha	186,241	37,744	35,903	3,553	17,525	20,995	147	22,083	22,500	30,852
Marion	56,538	11,368	10,612	1,070	5,320	6,186	45	6,474	6,592	9,690
Marshall	31,793	6,292	6,582	592	3,009	3,703	25	3,949	4,004	5,445
Monongalia	104,622	17,315	11,896	1,630	10,296	9,985	83	9,315	9,901	18,202
Ohio	42,516	8,194	8,611	771	4,043	4,844	34	5,140	5,210	6,361
Raleigh	76,601	16,175	14,894	1,523	7,115	8,421	61	8,906	9,032	12,684
Tucker	6,926	1,183	1,675	111	676	860	6	943	944	1,067
Wood	85,643	18,244	16,470	1,718	7,957	9,601	68	10,120	10,308	14,510
Totals	**964,887**	**195,527**	**173,087**	**18,408**	**90,768**	**105,256**	**763**	**109,059**	**111,664**	**157,309**

WEST VIRGINIA

American Lung Association in West Virginia

www.lung.org/westvirginia

HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Berkeley	1	0	0	0.3	B
Brooke	DNC	DNC	DNC	DNC	DNC
Cabell	3	0	0	1.0	C
Gilmer	1	0	0	0.3	B
Greenbrier	0	0	0	0.0	A
Hancock	3	0	0	1.0	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	2	0	0	0.7	B
Ohio	5	0	0	1.7	C
Raleigh	DNC	DNC	DNC	DNC	DNC
Tucker	2	0	0	0.7	B
Wood	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Berkeley	0	0	0	0.0	A	9.9	PASS
Brooke	0	0	0	0.0	A	10.5	PASS
Cabell	0	0	0	0.0	A	8.7	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	8.4	PASS
Kanawha	0	0	0	0.0	A	9.0	PASS
Marion	0	0	0	0.0	A	INC	INC
Marshall	0	0	0	0.0	A	10.2	PASS
Monongalia	0	0	0	0.0	A	8.1	PASS
Ohio	1	0	0	0.3	B	9.6	PASS
Raleigh	INC	INC	INC	INC	INC	INC	INC
Tucker	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	0	0	0	0.0	A	8.9	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	15,714	3,511	2,935	292	1,044	751	9	1,130	1,269	2,179
Brown	260,401	62,631	36,423	5,203	16,912	11,088	153	15,859	18,299	24,903
Columbia	56,927	12,458	9,658	1,035	3,813	2,677	34	3,962	4,502	4,561
Dane	531,273	110,926	68,124	9,215	35,779	21,927	312	30,325	35,383	56,594
Dodge	88,068	17,816	15,158	1,480	6,019	4,198	52	6,199	7,046	8,012
Door	27,587	4,488	7,900	373	1,975	1,627	16	2,609	2,826	2,250
Eau Claire	102,965	21,071	15,195	1,750	6,960	4,395	61	6,211	7,141	12,783
Fond du Lac	102,144	22,221	17,914	1,846	6,841	4,805	60	7,132	8,071	7,631
Forest	9,064	1,830	2,049	152	619	473	5	732	809	1,409
Grant	52,214	10,682	8,766	887	3,532	2,337	31	3,391	3,846	7,919
Jefferson	84,625	18,368	13,473	1,526	5,674	3,869	50	5,647	6,455	7,618
Kenosha	168,183	39,600	22,234	3,290	11,018	7,184	99	10,206	11,860	21,222
Kewaunee	20,405	4,428	4,036	368	1,369	1,010	12	1,535	1,717	1,526
La Crosse	118,122	23,685	18,453	1,968	8,036	5,202	69	7,445	8,518	14,977
Manitowoc	79,536	16,529	15,459	1,373	5,405	3,965	47	6,001	6,737	7,229
Marathon	135,603	31,137	22,960	2,587	8,945	6,252	80	9,252	10,493	13,941
Milwaukee	951,448	231,086	120,618	19,198	61,406	38,362	558	53,564	62,323	183,511
Outagamie	184,526	43,991	25,663	3,655	12,033	7,935	109	11,363	13,129	14,548
Ozaukee	88,314	19,139	16,441	1,590	5,932	4,297	52	6,464	7,279	4,626
Racine	195,140	45,885	30,332	3,812	12,794	8,777	115	12,834	14,678	25,798
Rock	161,620	38,169	25,508	3,171	10,565	7,215	95	10,549	12,035	20,393
Sauk	63,949	14,540	11,382	1,208	4,227	2,988	38	4,453	5,024	6,381
Sheboygan	115,427	25,986	19,797	2,159	7,662	5,385	68	7,986	9,052	7,934
Taylor	20,439	4,851	3,887	403	1,337	987	12	1,498	1,679	2,376
Vilas	21,435	3,574	6,418	297	1,529	1,296	13	2,099	2,264	2,676
Walworth	102,959	22,070	17,036	1,833	6,917	4,728	61	6,927	7,884	11,191
Waukesha	398,424	87,073	69,954	7,234	26,718	19,055	234	28,408	32,182	20,315
Totals	**4,156,512**	**937,745**	**627,773**	**77,903**	**275,060**	**182,786**	**2,443**	**263,781**	**302,501**	**494,503**

WISCONSIN

American Lung Association in Wisconsin

www.lung.org/wisconsin

	HIGH OZONE DAYS 2014–2016					HIGH PARTICLE POLLUTION DAYS 2014–2016						
						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	4.8	PASS
Brown	5	0	0	1.7	C	1	0	0	0.3	B	8.0	PASS
Columbia	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dane	1	0	0	0.3	B	1	0	0	0.3	B	8.4	PASS
Dodge	7	0	0	2.3	D	1	0	0	0.3	B	7.7	PASS
Door	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Eau Claire	0	0	0	0.0	A	0	0	0	0.0	A	7.1	PASS
Fond du Lac	5	0	0	1.7	C	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	7.6	PASS
Jefferson	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kenosha	28	2	0	10.3	F	0	1	0	0.5	B	8.0	PASS
Kewaunee	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Crosse	0	0	0	0.0	A	0	0	0	0.0	A	7.3	PASS
Manitowoc	13	0	0	4.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marathon	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Milwaukee	14	1	0	5.2	F	0	0	0	0.0	A	9.2	PASS
Outagamie	4	0	0	1.3	C	1	0	0	0.3	B	7.5	PASS
Ozaukee	19	1	0	6.8	F	0	0	0	0.0	A	7.5	PASS
Racine	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rock	10	0	0	3.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sauk	4	0	0	1.3	C	0	0	0	0.0	A	7.0	PASS
Sheboygan	25	3	0	9.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Taylor	0	0	0	0.0	A	0	0	0	0.0	A	6.1	PASS
Vilas	1	0	0	0.3	B	0	0	0	0.0	A	4.9	PASS
Walworth	10	0	0	3.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Waukesha	3	0	0	1.0	C	0	0	0	0.0	A	9.1	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	38,256	6,336	4,038	544	3,261	1,845	18	1,953	1,975	6,229
Big Horn	12,005	3,079	2,412	265	827	707	6	862	860	1,342
Campbell	48,803	13,737	3,973	1,180	3,387	2,156	22	2,327	2,508	4,067
Carbon	15,618	3,721	2,318	320	1,126	840	7	975	1,002	1,787
Converse	14,191	3,644	2,091	313	987	757	7	884	914	1,272
Fremont	40,242	10,272	6,977	883	2,805	2,245	18	2,676	2,707	6,616
Goshen	13,390	2,730	2,860	235	993	837	6	1,019	1,014	1,776
Laramie	98,136	22,994	14,803	1,976	7,155	5,278	45	6,122	6,255	9,697
Natrona	81,039	19,695	11,166	1,692	5,855	4,214	37	4,833	4,980	8,244
Park	29,353	6,055	6,262	520	2,154	1,844	13	2,248	2,246	3,173
Sheridan	30,200	6,421	5,977	552	2,208	1,836	14	2,216	2,229	2,691
Sublette	9,769	2,360	1,418	203	691	529	4	616	640	646
Sweetwater	44,165	11,866	4,625	1,019	3,105	2,086	20	2,316	2,442	4,264
Teton	23,191	4,354	3,137	374	1,809	1,258	11	1,423	1,476	1,680
Uinta	20,773	6,098	2,617	524	1,389	1,013	10	1,163	1,209	2,183
Weston	7,236	1,552	1,353	133	526	434	3	520	529	734
Totals	**526,367**	**124,914**	**76,027**	**10,732**	**38,277**	**27,878**	**242**	**32,153**	**32,985**	**56,401**

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HIGH OZONE DAYS 2014–2016

County	Orange	Red	Purple	Wgt. Avg.	Grade
Albany	0	0	0	0.0	A
Big Horn	0	0	0	0.0	A
Campbell	0	0	0	0.0	A
Carbon	1	0	0	0.3	B
Converse	0	0	0	0.0	A
Fremont	0	0	0	0.0	A
Goshen	INC	INC	INC	INC	INC
Laramie	0	0	0	0.0	A
Natrona	0	0	0	0.0	A
Park	DNC	DNC	DNC	DNC	DNC
Sheridan	DNC	DNC	DNC	DNC	DNC
Sublette	1	0	0	0.3	B
Sweetwater	4	0	0	1.3	C
Teton	0	0	0	0.0	A
Uinta	2	0	0	0.7	B
Weston	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2014–2016

	24-Hour					Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	0	0	0	0.0	A	4.1	PASS
Big Horn	INC	INC	INC	INC	INC	INC	INC
Campbell	1	0	0	0.3	B	4.7	PASS
Carbon	0	0	0	0.0	A	INC	INC
Converse	3	0	0	1.0	C	INC	INC
Fremont	1	0	0	0.3	B	6.6	PASS
Goshen	2	0	0	0.7	B	INC	INC
Laramie	0	1	0	0.5	B	4.2	PASS
Natrona	0	0	0	0.0	A	4.7	PASS
Park	0	0	0	0.0	A	3.8	PASS
Sheridan	3	0	0	1.0	C	7.0	PASS
Sublette	1	0	0	0.3	B	5.0	PASS
Sweetwater	0	0	0	0.0	A	4.7	PASS
Teton	0	0	0	0.0	A	4.5	PASS
Uinta	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weston	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.