

STATE
OF THE **AIR** 2011



**AMERICAN
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ASSOCIATION®**



STATE
OF THE **AIR** 2011



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The American Lung Association assumes sole responsibility for the content of the *American Lung Association State of the Air 2011*.

American Lung Association National Headquarters

1301 Pennsylvania Ave., NW, Suite 800
Washington, DC 20004-1725
Phone: (202) 785-3355
Fax: (202) 452-1805
<http://www.stateoftheair.org>
<http://www.lungusa.org>

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The State of the Air 2011

State of the Air 2011 shows that

cleaning up air pollution produces healthier air

across the nation.

Each of the **25** cities with the most ozone pollution improved.

The *State of the Air 2011* shows that the air quality in many places has improved, but that over 154 million people—just over one half the nation—still suffer pollution levels that are too often dangerous to breathe. Unhealthy air remains a threat to the lives and health of millions of people in the United States, despite great progress. Air pollution lingers as a widespread and dangerous reality even as some seek to weaken the Clean Air Act, the public health law that has driven the cuts in pollution since 1970.

The *State of the Air 2011* report looks at levels of ozone and particle pollution found in official monitoring sites across the United States in 2007, 2008, and 2009. The report uses the most current quality-assured nationwide data available for these analyses.

For particle pollution, the report examines fine particulate matter (PM_{2.5}) in two different ways: averaged year-round (annual average) and over short-term levels (24-hour). For both ozone and short-term particle pollution, the analysis uses a weighted average number of days that allows recognition of places with higher levels of pollution. For the year-round particle pollution rankings, the report uses averages calculated and reported by the U.S. Environmental Protection Agency. For comparison, the *State of the Air 2010* report covered data from 2006, 2007 and 2008.¹

Ozone

Each of the 25 cities with the most ozone pollution improved their air quality over the past year's report. More than half of the country's most smog-polluted cities experienced their best year yet—but people living there are still forced to breathe air that reaches dangerous levels.

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

Of the 25 metropolitan areas most polluted by ozone, fifteen reported the lowest ozone scores since the *State of the Air* reports began²: Los Angeles, CA; Bakersfield, CA; Fresno, CA; Sacramento, CA; Houston, TX; Dallas-Fort Worth, TX; El Centro, CA; Washington-Baltimore, DC-MD-VA; New York, NY; Knoxville, TN; Phoenix, AZ; Philadelphia, PA; Atlanta, GA; Pittsburgh, PA; and Las Vegas, NV.

Year-round particle pollution

The *State of the Air 2011* finds continued progress in cutting year-round particle pollution, compared to the 2010 report. Thanks to reductions in emissions from coal-fired power plants and the transition to cleaner diesel fuels and engines, cleaner air shows up repeatedly in the monitoring data, especially in the eastern U.S.

All but two cities with the most year-round particle pollution improved over the previous report.³ Bakersfield, CA, and Hanford, CA, each had worse average year-round levels in 2007–2009 than in 2006–2008. Bakersfield, CA, moved into the most polluted city rank. Improving over the previous report were these 25 metropolitan areas: Los Angeles, CA; Phoenix, AZ; Visalia, CA; Pittsburgh, PA; Fresno, CA; Birmingham, AL; Cincinnati, OH; Modesto, CA; Louisville, KY; Cleveland, OH; Weirton-Steubenville, WV-OH; Charleston, WV; Huntington, WV; Indianapolis, IN; St. Louis, MO; Detroit, MI; Houston, TX; Hagerstown, MD; New York, NY; Dayton, OH; Lancaster, PA; York, PA; Philadelphia, PA; Knoxville, TN; and Parkersburg, WV.

² Full names for all these metropolitan areas can be found in the lists beginning on page 10. The full metropolitan areas often include multiple counties, incorporated cities and counties in adjacent states.

³ The usual list of 25 cities with the most year-round particle pollution actually includes 27 cities because of ties in the rankings values among many cities.

All but two cities with the most year-round particle pollution improved over the previous report.

Only these eight cities averaged levels higher than the official national standard: Bakersfield, CA; Los Angeles, CA; Phoenix, AZ; Visalia, CA; Hanford, CA; Fresno, CA; Pittsburgh, PA; and Birmingham, AL. Nineteen of these cities actually had levels of year-round particle pollution that were lower than the official national air quality standard. However, that standard is currently under review. The American Lung Association and other public health and medical groups have long supported a much more protective national air quality standard for particle pollution.

Short-term particle pollution

Unlike with year-round particle pollution levels, fewer cities with the worst short-term levels improved

in 2007–2009. Only 12 cities had fewer unhealthy days or lower daily levels, while 16 of the cities on the list did worse than in 2006–2008. One city stayed the same.^{2,4} Although “short-term” particle pollution looks at the same type of pollution that the year-round levels do, this measure focuses on the spikes in particle levels that can last from hours to days. Those days or weeks of high levels can be dangerous, even deadly.

Twelve cities improved, having cut the average number of days with high particle levels: Pittsburgh, PA; Los Angeles, CA; Visalia, CA; Birmingham, AL; Sacramento, CA; Modesto, CA; Stockton, CA; Philadelphia, PA; Louisville, KY; Phoenix, AZ; San Jose-San Francisco-Oakland, CA; and Wheeling, WV. The Chicago metropolitan area had the same average number of unhealthy days in 2007–2009 as in 2006–2008.

The remaining sixteen cities had more days or higher daily levels: Bakersfield, CA (ranked most polluted); Fresno, CA; Salt Lake City, UT; Provo, UT; Hanford, CA; Logan, UT; Merced, CA; Eugene-Springfield, OR; San Diego, CA; Seattle-Tacoma, WA; Fairbanks, AK; Macon, GA; Green Bay, WI; Davenport, IA; Portland, OR; and Madison, WI.

⁴ The usual list of the 25 cities with the most short-term particle pollution actually includes 29 cities because of ties in the rankings.

Fewer cities with the worst short-term levels of particle pollution improved in 2007-2009.

Honolulu, HI and Santa Fe, NM were the only cities landing on all three of the cleanest cities lists during 2007-2009.

Cleanest cities

Honolulu, HI and Santa Fe, NM were the only metropolitan areas landing on all three of the

cleanest cities lists during 2007–2009.² Four cities ranked on the cleanest for both ozone and short-term particle pollution: Brownsville, TX; Lincoln, NE; Monroe, LA; and Spokane, WA. Five other cities were on the cleanest cities lists for both ozone and year-round particle pollution: Bismarck, ND; Duluth, MN-WI; Fargo, ND; Port S. Lucie-Sebastian-Vero Beach, FL; and Rapid City, SD. Eleven cities ranked as the cleanest for both measures of particle pollution: Amarillo, TX; Bangor, ME; Billings, MT; Burlington, VT; Cape Coral-Fort Myers, FL; Cheyenne, WY; Fort Collins-Loveland, CO; Palm Bay-Melbourne-Titusville, FL; Salinas, CA; Sarasota, FL; and Tucson, AZ.

People at risk

Looking at the nation as a whole, the American Lung Association *State of the Air 2011* finds—

■ **Roughly half the people (50.3%) in the United States live in counties that have unhealthy levels of either ozone or particle pollution.**

Almost 154.5 million Americans live in the 366 counties where they are exposed to unhealthy levels of air pollution in the form of either ozone or short-term or year-round levels of particles.

■ **Nearly half the people in the United States (48.2%) live in areas with unhealthy levels of ozone.**

Counties that were graded F for ozone levels have a combined population of almost 148.1 million. These people live in the 338 counties where the monitored air quality places them at risk for decreased lung function, respiratory infection, lung inflammation and aggravation of respiratory illness. The actual number who breathe unhealthy levels of ozone is likely much larger, since this number does not include people who live in adjacent counties in metropolitan areas where no monitors exist.

18.5 million

people in the US live in counties where the outdoor air failed all three tests.

- **Nearly one in five (19.8%) of people in the United States live in an area with unhealthful short-term levels of particle pollution.**

Nearly 61 million Americans live in 76 counties that experienced too many days with unhealthy spikes in particle pollution, a decrease from the last report. Short-term spikes in particle pollution can last from hours to several days and can increase the risk of heart attacks, strokes and emergency-room visits for asthma and cardiovascular disease, and most importantly, can increase the risk of early death.

- **Over 18.5 million people (6%) in the United States live in an area with unhealthful year-round levels of particle pollution.**

These people live in areas where chronic levels are regularly a threat to their health. Even when levels are fairly low, exposure to particles over time can increase risk of hospitalization for asthma, damage to the lungs and, significantly, increase the risk of premature death.

- **Roughly one in 17 people—more than 18.5 million in the United States—live in 10 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution.**

With the risks from airborne pollution so great, the American Lung Association seeks to inform people who may be in danger. Many 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.

- **People with Asthma**—Approximately 3.2 million children and nearly 9.5 million adults with asthma live in parts of the United States with very high levels of ozone. Over 3.8 million adults and over 1.2 million children with asthma live in areas with high levels of short-term particle pollution. Nearly 1.1 million adults and over 339,000 children with asthma live in counties with unhealthful levels of year-round particle pollution.

- **Older and Younger**—Nearly 17.4 million adults age 65 and over and nearly 37 million children age 18 and under live in counties with unhealthful ozone levels. Nearly 7 million seniors and nearly 15.5 million children live in counties with unhealthful short-term levels of particle pollution. Over 2 million seniors and nearly 5 million children live in counties with unhealthful levels of year-round particle pollution.

- **Chronic Bronchitis and Emphysema**—Nearly 4.8 million people with chronic bronchitis and nearly 2.3 million with emphysema live in counties with unhealthful ozone levels. Over 1.9 million people with chronic bronchitis and over 917,000 with emphysema live in counties with unhealthful levels of short-term particle pollution. Nearly 573,000 million people with chronic bronchitis and more than 268,000 with emphysema live in counties with unhealthful year-round levels of particle pollution.

- **Cardiovascular Disease**—Over 15.9 million people with cardiovascular diseases live in counties with unhealthful levels of short-term particle pollution; nearly 4.7 million live in counties with unhealthful levels of year-round particle pollution. Cardiovascular diseases include coronary heart disease, heart attacks, strokes, hypertension and angina pectoris.

- **Diabetes**—Over 3.9 million people with diabetes live in counties with unhealthful levels of short-term particle pollution; over 1.2 million live in counties with unhealthful levels of year-round particle pollution. Research indicates that because diabetics are already at higher risk of cardiovascular disease, they may face increased risk due to the impact of particle pollution on their cardiovascular systems.

- **Poverty**—Over 20 million people with incomes meeting the federal poverty definition live in counties with unhealthful levels of ozone. Over 9.3 million people in poverty live in counties with unhealthful levels of short-term particle pollution, and nearly 3 million live in counties with unhealthful year-round levels of particle pollution. Evidence shows that

people who have low incomes may face higher risk from air pollution.

What needs to be done

Many major challenges require the Administration and Congress to take steps to protect the health of the public. Here are a few that the American Lung Association calls for to improve the air we all breathe.

Protect the Clean Air Act. The continued improvement shown in the *State of the Air* report is possible because of the Clean Air Act, the nation's landmark public health law that the U.S. Congress passed 40 years ago. The Act requires that the U.S. Environmental Protection Agency (EPA) and each state take steps to clean up the air. Some members of Congress are proposing changes to the Clean Air Act that could dismantle 40 years' progress. We must keep that law strong to continue to protect public health.

Clean up dirty power plants. Over 440 coal-fired power plants in 46 states are among the largest contributors to particulate pollution, ozone, mercury, and global warming. Their pollution blows across state lines into states thousands of miles away. They produce 84 known hazardous air pollutants, including arsenic, mercury, dioxins, formaldehyde and hydrogen chloride. EPA has proposed steps that will cut the emissions that create ozone and particle pollution and, for the first time, set national limits on the toxic pollutants they can emit. EPA needs to issue the final rules that will start those cleanup measures. Congress needs to support EPA's actions to clean these plants up.

Clean up the existing fleet of dirty diesel vehicles and heavy equipment. Rules EPA put in effect over the past several years mean that new diesel vehicles and equipment must be much cleaner. Still, the vast majority of diesel trucks, buses and heavy equipment (such as bulldozers) will likely be in use for thousands more miles, spewing dangerous diesel

exhaust into communities and neighborhoods. The good news is that affordable technology exists to cut emissions by 90 percent. Congress needs to fund EPA's diesel cleanup ("retrofit") program. Congress should also require that clean diesel equipment should be used in federally-funded construction programs.

Strengthen the ozone standards. The Lung Association urges the EPA to adopt a much tighter, more protective national air quality standard for ozone, set at 60 parts per billion. The EPA is currently considering strengthening the standard adopted in March 2008, which they now believe was not strong enough to protect health against the widespread harm from ozone smog. The 2008 decision set 75 ppb as the standard, despite the unanimous recommendations of EPA's official science advisors that such a level would allow too much ozone to meet the requirements of the Clean Air Act. The American Lung Association challenged the 2008 decision in court, along with several states, public health and environmental groups. In January 2010, the EPA proposed a range for the new standard that met the earlier recommendations of the expert panel and the nation's leading public health organizations. EPA will announce the decision on the new standard the summer of 2011.

Strengthen the particle pollution standards. In 2006, EPA failed to strengthen the annual standard for fine particles, despite the near unanimous recommendation by their official science advisors. EPA lowered the 24-hour standard, though not to the level the Lung Association recommended. EPA can save thousands of lives each year by dramatically strengthening the annual average and the 24-hour standards. In 2009, the Lung Association challenged that 2006 standard in the U.S. Circuit Court and won. EPA is expected to issue a new proposal for the particle pollution standards in 2011.

Clean up harmful emissions from tailpipes. EPA needs to set new pollution standards for cars, light trucks, SUVs and gasoline fuels to reduce nitrogen oxides, hydrocarbons, and particle pollution emissions. Science shows that people who

The strong, continued improvement shown in this report is possible because of the **Clean Air Act.**

live or work near highways or busy roads bear a disproportionate health burden from air pollution. Cleaner cars will help reduce this impact for all, but especially those who live closest to the traffic.

What you can do

Individual citizens can do a great deal to help reduce air pollution outdoors as well. Simple but effective ways include—

- **Send a message to EPA.** Send a [message](#) to tell EPA to clean up hazardous air pollutants from coal-fired power plants. Tell EPA you [support stronger standards](#) for ozone and particle pollution to limit how much of those pollutants can be in the air.
- **Tell the President and Congress** that you support the Clean Air Act and that they should, too. Send a [message](#) to tell them to keep the safeguards in place in this public health law.
- **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.
- **Don't burn wood or trash.** Burning firewood and trash are among the largest sources of particles in many parts of the country. If you must use a fireplace or stove for heat, convert your woodstoves 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.

- **Get involved.** Participate in your community's review of its air pollution plans and support state and local efforts to clean up air pollution. To find your local air pollution control agency, go to www.4cleanair.org.
- **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.

Tell the President and Congress to support the Clean Air Act.

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

In Counties where the Grades were:	Chronic Diseases							Age Groups		Total Population	Number of Counties
	Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema	CV Disease	Diabetes	Poverty	Under 18	65 and Over		
Grade A (0.0)	1,971,559	631,469	994,663	498,303	8,390,082	2,056,404	4,212,190	7,189,834	3,977,708	29,964,695	139
Grade B (0.3-0.9)	3,072,492	983,227	1,505,369	734,927	12,557,984	3,027,179	5,907,902	11,417,242	5,629,468	46,216,077	182
Grade C (1.0-2.0)	3,267,080	1,064,195	1,656,331	818,511	13,887,267	3,330,980	6,423,414	11,701,176	6,435,736	49,887,758	133
Grade D (2.1-3.2)	1,360,920	467,562	720,134	343,264	5,944,250	1,486,651	3,193,153	5,355,664	2,578,742	22,235,806	46
Grade F (3.3+)	3,814,340	1,211,124	1,930,376	917,820	15,912,763	3,944,139	9,339,268	15,491,071	6,950,809	60,921,655	76
National Population in Counties with PM _{2.5} Monitors	13,981,412	4,520,949	7,077,034	3,450,294	58,986,094	14,425,846	30,307,311	53,090,799	26,707,334	217,329,744	637

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

In Counties where the Grades were:	Chronic Diseases							Age Groups		Total Population	Number of Counties
	Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema	CV Disease	Diabetes	Poverty	Under 18	65 and Over		
Pass	11,782,176	3,804,274	5,908,715	2,884,062	49,275,596	11,974,999	24,713,502	43,790,193	22,310,786	180,765,573	516
Fail	1,084,656	339,493	572,689	268,425	4,691,047	1,220,449	2,968,257	4,916,821	2,017,113	18,516,713	10
National Population in Counties with PM _{2.5} Monitors	13,978,245	4,520,382	7,075,664	3,449,614	58,974,595	14,422,959	30,301,175	53,083,823	26,701,815	217,291,013	636

People at Risk from Ozone

In Counties where the Grades were:	Chronic Diseases					Age Groups		Total Population	Number of Counties
	Adult Asthma	Pediatric Asthma	Chronic Bronchitis	Emphysema	Poverty	Under 18	65 and Over		
Grade A (0.0)	703,128	207,583	381,246	191,369	1,483,375	2,721,182	1,536,254	11,450,818	81
Grade B (0.3-0.9)	952,592	295,991	515,494	265,139	2,186,428	3,659,910	2,196,893	15,336,801	76
Grade C (1.0-2.0)	1,448,582	445,265	724,178	364,081	2,977,882	5,045,020	2,922,055	21,604,100	142
Grade D (2.1-3.2)	1,407,537	442,528	715,047	354,495	2,906,192	4,986,790	2,816,311	21,477,147	64
Grade F (3.3+)	9,498,907	3,171,100	4,769,422	2,296,790	20,025,940	36,939,467	17,393,446	148,069,983	339
National Population in Counties with Ozone Monitors	14,445,482	4,702,553	7,333,231	3,585,499	30,504,009	54,999,066	27,757,857	224,798,559	755

Note: The *State of the Air 2011* covers the period 2007-2009. The Appendix provides a full discussion of the methodology.

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

2011 Rank ¹	Metropolitan Statistical Areas	Total Population ²	Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	CV Disease ⁹	Diabetes ¹⁰	Poverty ¹¹
1	Bakersfield-Delano, CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	184,959	48,102	170,614
2	Fresno-Madera, CA	1,063,899	319,551	104,947	21,198	58,379	30,977	14,213	251,405	65,433	221,348
3	Pittsburgh-New Castle, PA	2,445,117	495,068	422,943	51,002	174,497	89,288	48,733	783,055	183,922	290,876
4	Los Angeles-Long Beach-Riverside, CA	17,820,893	4,682,410	1,902,902	310,610	1,030,481	552,457	257,170	4,512,759	1,179,719	2,579,016
5	Salt Lake City-Ogden-Clearfield, UT	1,743,364	528,004	154,359	38,413	96,430	49,678	21,913	396,577	75,234	172,338
6	Provo-Orem, UT	555,551	193,164	36,244	14,053	28,686	13,744	5,338	104,030	18,731	77,177
7	Visalia-Porterville, CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,299	25,326	97,542
8	Birmingham-Hoover-Cullman, AL	1,212,848	291,846	160,168	25,030	70,273	40,311	20,201	340,136	107,132	177,638
9	Hanford-Corcoran, CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	32,615	8,286	24,546
9	Logan, UT-ID	127,945	39,861	10,455	2,783	7,009	3,438	1,431	26,746	5,015	20,081
9	Sacramento—Arden-Arcade—Yuba City, CA-NV	2,436,109	607,251	300,098	40,307	143,692	79,445	39,034	664,653	175,011	320,925
12	Modesto, CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	125,454	32,878	85,583
13	Merced, CA	245,321	78,461	24,167	5,205	13,076	6,948	3,210	56,540	14,704	59,349
14	Eugene-Springfield, OR	351,109	70,025	50,780	3,931	31,083	12,379	6,290	105,086	23,292	58,935
15	San Diego-Carlsbad-San Marcos, CA	3,053,793	739,625	347,859	49,063	181,385	97,908	46,204	804,440	210,648	372,782
16	Stockton, CA	674,860	202,135	68,180	13,409	37,098	19,982	9,330	163,489	42,864	103,777
17	Chicago-Naperville-Michigan City, IL-IN-WI	9,804,845	2,491,070	1,104,442	231,348	660,705	312,722	148,887	2,580,626	586,411	1,231,739
18	Seattle-Tacoma-Olympia, WA	4,158,293	944,478	468,853	64,582	281,862	137,891	65,277	1,135,710	241,202	421,614
19	Fairbanks, AK	98,660	25,640	6,170	1,775	6,482	2,900	1,146	22,185	3,823	7,420
20	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	6,533,122	1,535,672	869,965	158,452	438,946	219,155	109,986	1,850,540	428,512	760,156
21	Macon-Warner Robins-Fort Valley, GA	394,538	102,473	47,839	10,108	20,164	12,685	6,229	106,099	29,946	67,875
22	Louisville-Jefferson County-Elizabethtown-Scottsburg, KY-IN	1,395,634	335,150	177,354	31,918	105,477	46,544	23,133	391,515	118,443	193,601
23	Green Bay, WI	304,783	72,441	37,275	5,016	22,809	10,116	4,951	84,521	18,546	31,142
24	Davenport-Moline-Rock Island, IA-IL	379,066	89,246	55,929	6,420	23,219	12,981	6,779	111,579	23,842	42,634
24	Madison-Baraboo, WI	628,947	134,274	68,877	9,298	49,319	20,807	9,598	169,365	36,341	74,105
24	Phoenix-Mesa-Glendale, AZ	4,364,094	1,187,246	496,355	96,895	347,250	133,817	63,556	1,101,803	255,571	643,772
24	Portland-Vancouver-Hillsboro, OR-WA	2,241,841	533,526	244,548	31,367	183,150	72,947	34,260	598,721	132,377	265,996
24	San Jose-San Francisco-Oakland, CA	7,427,757	1,679,302	898,351	111,397	450,647	247,427	119,351	2,053,445	541,562	721,023
24	Wheeling, WV-OH	144,637	28,817	25,881	2,564	10,687	5,359	2,965	47,308	13,923	22,162

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 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 during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease 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})

2011 Rank ¹	Metropolitan Statistical Areas	Total Population ²	Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	CV Disease ⁹	Diabetes ¹⁰	Poverty ¹¹
1	Bakersfield-Delano, CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	184,959	48,102	170,614
2	Los Angeles-Long Beach-Riverside, CA	17,820,893	4,682,410	1,902,902	310,610	1,030,481	552,457	257,170	4,512,759	1,179,719	2,579,016
2	Phoenix-Mesa-Glendale, AZ	4,364,094	1,187,246	496,355	96,895	347,250	133,817	63,556	1,101,803	255,571	643,772
2	Visalia-Porterville, CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,299	25,326	97,542
5	Hanford-Corcoran, CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	32,615	8,286	24,546
6	Fresno-Madera, CA	1,063,899	319,551	104,947	21,198	58,379	30,977	14,213	251,405	65,433	221,348
7	Pittsburgh-New Castle, PA	2,445,117	495,068	422,943	51,002	174,497	89,288	48,733	783,055	183,922	290,876
8	Birmingham-Hoover-Cullman, AL	1,212,848	291,846	160,168	25,030	70,273	40,311	20,201	340,136	107,132	177,638
9	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,214,954	543,893	270,380	51,168	166,495	72,691	35,624	607,603	168,199	272,692
10	Louisville-Jefferson County-Elizabethtown-Scottsburg, KY-IN	1,395,634	335,150	177,354	31,918	105,477	46,544	23,133	391,515	118,443	193,601
10	Modesto, CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	125,454	32,878	85,583
12	Charleston, WV	304,214	66,646	47,487	5,652	20,945	10,797	5,739	93,597	29,594	46,041
12	Cleveland-Akron-Elyria, OH	2,891,988	667,656	424,508	62,599	218,655	100,087	52,255	860,578	231,353	433,633
12	Steubenville-Weirton, OH-WV	120,929	24,249	22,891	2,179	8,953	4,536	2,568	40,483	11,745	18,861
15	Huntington-Ashland, WV-KY-OH	285,624	60,932	46,146	5,479	21,189	10,055	5,339	87,025	26,468	55,531
15	Indianapolis-Anderson-Columbus, IN	2,064,870	529,363	238,784	51,705	139,825	66,093	31,843	548,249	139,402	276,696
17	Detroit-Warren-Flint, MI	5,327,764	1,280,345	673,872	104,036	404,526	178,165	88,632	1,499,596	378,182	851,246
17	Houston-Baytown-Huntsville, TX	5,968,586	1,693,708	507,966	138,409	275,407	177,262	78,010	1,415,731	385,690	897,732
17	St. Louis-St. Charles-Farmington, MO-IL	2,916,789	696,764	383,974	69,317	208,250	97,816	49,155	826,708	178,048	360,713
20	Hagerstown-Martinsburg, MD-WV	266,149	62,604	35,621	6,461	18,296	8,917	4,479	75,308	21,340	30,121
21	New York-Newark-Bridgeport, NY-NJ-CT-PA	22,232,494	5,171,357	2,905,795	513,309	1,559,643	744,517	370,377	6,262,030	1,456,452	2,721,910
22	Dayton-Springfield-Greenville, OH	1,066,261	244,969	160,192	22,968	80,775	36,765	19,252	316,371	85,080	150,147
22	Lancaster, PA	507,766	125,939	75,950	12,974	34,593	17,080	8,988	147,264	34,405	46,401
24	Knoxville-Sevierville-La Follette, TN	1,053,627	231,414	158,809	19,847	66,813	36,686	19,121	315,000	87,170	162,410
24	Parkersburg-Marietta, WV-OH	160,905	34,240	27,442	3,018	11,589	5,818	3,179	51,054	15,220	24,379
24	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	6,533,122	1,535,672	869,965	158,452	438,946	219,155	109,986	1,850,540	428,512	760,156
24	York-Hanover-Gettysburg, PA	531,260	122,145	75,887	12,583	37,060	18,316	9,464	156,758	36,557	44,431

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 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 during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
9. **CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease 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 Most Ozone-Polluted Cities

2011 Rank ¹	Metropolitan Statistical Areas	Total Population ²	Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	Poverty ⁹
1	Los Angeles-Long Beach-Riverside, CA	17,820,893	4,682,410	1,902,902	310,610	1,030,481	552,457	257,170	2,579,016
2	Bakersfield-Delano, CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	170,614
3	Visalia-Porterville, CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,542
4	Fresno-Madera, CA	1,063,899	319,551	104,947	21,198	58,379	30,977	14,213	221,348
5	Sacramento—Arden-Arcade—Yuba City, CA-NV	2,436,109	607,251	300,098	40,307	143,692	79,445	39,034	320,925
6	Hanford-Corcoran, CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	24,546
7	San Diego-Carlsbad-San Marcos, CA	3,053,793	739,625	347,859	49,063	181,385	97,908	46,204	372,782
8	Houston-Baytown-Huntsville, TX	5,968,586	1,693,708	507,966	138,409	275,407	177,262	78,010	897,732
9	Merced, CA	245,321	78,461	24,167	5,205	13,076	6,948	3,210	59,349
10	Charlotte-Gastonia-Salisbury, NC-SC	2,389,763	615,854	263,236	52,818	139,028	75,668	35,810	332,654
11	San Luis Obispo-Paso Robles, CA	266,971	49,825	39,636	3,305	16,962	9,572	4,880	33,198
12	Dallas-Fort Worth, TX	6,772,276	1,884,196	607,900	153,975	314,809	202,280	89,746	950,677
13	El Centro, CA	166,874	51,337	17,578	3,405	9,042	4,822	2,259	35,368
14	Modesto, CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	85,583
14	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV	8,394,115	2,017,092	913,919	217,649	558,279	272,776	128,313	700,129
16	Cincinnati-Middletown-Wilmington, OH-KY-IN	2,214,954	543,893	270,380	51,168	166,495	72,691	35,624	272,692
17	New York-Newark-Bridgeport, NY-NJ-CT-PA	22,232,494	5,171,357	2,905,795	513,309	1,559,643	744,517	370,377	2,721,910
18	Knoxville-Sevierville-La Follette, TN	1,053,627	231,414	158,809	19,847	66,813	36,686	19,121	162,410
19	Phoenix-Mesa-Glendale, AZ	4,364,094	1,187,246	496,355	96,895	347,250	133,817	63,556	643,772
20	Philadelphia-Camden-Vineland, PA-NJ-DE-MD	6,533,122	1,535,672	869,965	158,452	438,946	219,155	109,986	760,156
21	Birmingham-Hoover-Cullman, AL	1,212,848	291,846	160,168	25,030	70,273	40,311	20,201	177,638
22	Chico, CA	220,577	46,201	33,001	3,065	13,594	7,643	3,920	39,717
23	Atlanta-Sandy Springs-Gainesville, GA-AL	5,831,778	1,573,677	513,199	155,122	296,754	177,090	78,367	802,336
24	Pittsburgh-New Castle, PA	2,445,117	495,068	422,943	51,002	174,497	89,288	48,733	290,876
25	Las Vegas-Paradise-Pahrump, NV	1,947,068	510,425	214,427	35,278	127,748	60,786	28,636	240,066

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined or Metropolitan Statistical Area.
2. **Total Population** represents the at-risk populations for all counties within the respective Combined or Metropolitan Statistical Area.
3. Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 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 during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
7. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
8. Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
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})

2011 Rank ¹	County	ST	Total Population ²	At-Risk Groups									High PM _{2.5} Days in Unhealthy Ranges, 2007-2009	
				Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{5,8}	Emphysema ^{7,8}	CV Disease ⁹	Diabetes ¹⁰	Poverty ¹¹	Weighted Avg. ¹²	Grade ¹³
1	Kern	CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	184,959	48,102	170,614	60.5	F
2	Fresno	CA	915,267	275,906	89,528	18,302	50,145	26,546	12,137	215,107	55,930	192,638	53.7	F
3	Allegheny	PA	1,218,494	242,202	204,401	24,952	88,010	44,083	23,650	383,427	89,816	153,937	32.5	F
4	Riverside	CA	2,125,440	615,621	245,456	40,837	118,086	64,267	31,066	533,297	139,608	290,003	24.5	F
5	Salt Lake	UT	1,034,989	301,147	89,962	21,909	58,207	29,771	12,941	236,201	44,562	108,994	22.5	F
6	Los Angeles	CA	9,848,011	2,500,804	1,042,989	165,892	576,310	306,992	141,524	2,496,934	651,091	1,552,196	20.0	F
7	San Bernardino	CA	2,017,673	601,101	172,905	39,874	111,493	58,546	25,840	467,948	122,008	335,321	17.7	F
8	Utah	UT	545,307	189,454	35,179	13,783	28,166	13,467	5,204	101,731	18,281	75,993	14.8	F
9	Tulare	CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,299	25,326	97,542	14.7	F
10	Jefferson	AL	665,027	158,005	90,242	13,551	38,702	22,191	11,187	187,691	59,012	107,081	14.0	F
11	Sacramento	CA	1,400,949	361,552	157,628	23,984	81,493	44,281	21,049	365,071	95,904	210,786	13.2	F
11	Kings	CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	32,615	8,286	24,546	13.2	F
11	Cache	UT	115,269	35,491	8,905	2,582	6,320	3,075	1,246	23,661	4,328	18,744	13.2	F
14	Stanislaus	CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	125,454	32,878	85,583	12.8	F
15	Merced	CA	245,321	78,461	24,167	5,205	13,076	6,948	3,210	56,540	14,704	59,349	11.5	F
16	Orange	CA	3,026,786	755,550	346,897	50,120	178,032	96,766	46,079	798,336	209,664	318,173	11.0	F
16	Lane	OR	351,109	70,025	50,780	3,931	31,083	12,379	6,290	105,086	23,292	58,935	11.0	F
18	San Diego	CA	3,053,793	739,625	347,859	49,063	181,385	97,908	46,204	804,440	210,648	372,782	9.2	F
19	San Joaquin	CA	674,860	202,135	68,180	13,409	37,098	19,982	9,330	163,489	42,864	103,777	8.8	F
19	Plumas	CA	20,122	3,615	4,290	240	1,281	814	483	7,441	2,032	2,453	8.8	F
21	Cook	IL	5,287,037	1,283,145	621,214	119,167	360,936	169,759	80,867	1,400,158	314,356	828,626	8.7	F
22	Snohomish	WA	694,571	171,462	68,364	11,724	45,931	22,398	10,328	182,585	38,690	66,458	8.5	F
23	Fairbanks North Star Borough	AK	98,660	25,640	6,170	1,775	6,482	2,900	1,146	22,185	3,823	7,420	8.3	F
24	Muscatine	IA	42,934	11,301	5,457	538	2,133	1,406	710	11,916	2,352	5,074	7.2	F
25	Philadelphia	PA	1,547,297	362,879	192,683	37,384	110,439	50,004	24,037	413,743	95,348	366,125	7.0	F
25	Sutter	CA	92,614	25,610	11,969	1,699	5,231	2,910	1,462	24,562	6,468	13,511	7.0	F

Notes:

- Counties are ranked by weighted average. See note 12 below.
- Total Population** represents the at-risk populations in counties with PM_{2.5} monitors.
- Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
- Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to population estimates (U.S. Census).
- 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).
- Poverty** estimates come from the U.S. Census Bureau and are for all ages.
- The **Weighted Average** was derived by counting the number of days in each unhealthy range (orange, red, purple, maroon) in each year (2007-2009), 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.
- 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})

2011 Rank ¹	County	ST	Total Population ²	At-Risk Groups									PM _{2.5} Annual, 2007-2009	
				Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	CV Disease ⁹	Diabetes ¹⁰	Poverty ¹¹	Design Value ¹²	Grade ¹³
1	Kern	CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	184,959	48,102	170,614	22.6	FAIL
2	Pinal	AZ	340,962	90,261	47,067	7,366	27,072	10,833	5,497	91,770	21,269	44,379	18.8	FAIL
2	Riverside	CA	2,125,440	615,621	245,456	40,837	118,086	64,267	31,066	533,297	139,608	290,003	18.8	FAIL
2	Tulare	CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,299	25,326	97,542	18.8	FAIL
5	Kings	CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	32,615	8,286	24,546	17.3	FAIL
6	Fresno	CA	915,267	275,906	89,528	18,302	50,145	26,546	12,137	215,107	55,930	192,638	17.1	FAIL
7	Allegheny	PA	1,218,494	242,202	204,401	24,952	88,010	44,083	23,650	383,427	89,816	153,937	17.0	FAIL
8	San Bernardino	CA	2,017,673	601,101	172,905	39,874	111,493	58,546	25,840	467,948	122,008	335,321	16.2	FAIL
9	Los Angeles	CA	9,848,011	2,500,804	1,042,989	165,892	576,310	306,992	141,524	2,496,934	651,091	1,552,196	15.8	FAIL
10	Jefferson	AL	665,027	158,005	90,242	13,551	38,702	22,191	11,187	187,691	59,012	107,081	15.1	FAIL
11	Hamilton	OH	855,062	200,406	115,705	18,790	64,933	28,687	14,447	242,554	65,213	126,872	15.0	PASS
12	Stanislaus	CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	125,454	32,878	85,583	14.7	PASS
12	Clark	IN	108,634	25,544	14,060	2,495	7,544	3,636	1,809	30,586	7,852	12,743	14.7	PASS
14	Cuyahoga	OH	1,275,709	292,883	194,879	27,461	96,471	44,247	23,347	382,121	102,760	235,014	14.4	PASS
14	Brooke	WV	23,509	4,577	4,557	388	1,659	885	503	7,912	2,504	3,075	14.4	PASS
14	Kanawha	WV	191,663	40,727	31,882	3,454	13,286	6,903	3,738	60,336	19,080	27,060	14.4	PASS
17	Marion	IN	890,879	227,659	96,665	22,236	60,465	27,928	13,035	228,393	57,284	171,860	14.3	PASS
17	Cabell	WV	95,214	19,062	15,496	1,617	6,717	3,341	1,750	28,712	9,053	19,182	14.3	PASS
19	Jefferson	OH	67,691	13,678	12,743	1,282	5,213	2,530	1,430	22,561	6,070	11,524	14.2	PASS
19	Beaver	PA	171,673	34,909	31,392	3,596	12,106	6,388	3,578	56,723	13,375	19,285	14.2	PASS
21	Madison	IL	268,457	61,590	38,074	5,720	18,600	9,147	4,681	77,902	17,531	34,532	14.1	PASS
21	Wayne	MI	1,925,848	487,257	234,767	39,593	143,904	62,834	30,943	526,404	132,430	458,811	14.1	PASS
21	Harris	TX	4,070,989	1,174,860	328,354	96,009	186,211	118,470	51,005	937,343	254,761	686,928	14.1	PASS
24	Butler	OH	363,184	89,746	41,603	8,415	27,375	11,732	5,610	97,011	26,067	46,350	14.0	PASS
24	Berkeley	WV	103,854	25,871	11,828	2,194	6,925	3,363	1,613	27,848	8,781	10,866	14.0	PASS

Notes:

- Counties are ranked by Design Value. See note 12 below.
- Total Population** represents the at-risk populations in counties with PM_{2.5} monitors.
- Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
- Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- CV disease** estimates are based on National Heart Lung and Blood Institute (NHLBI) estimates of cardiovascular disease applied to population estimates (U.S. Census).
- 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).
- Poverty** estimates come from the U.S. Census Bureau and are for all ages.
- 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 meets the standard. The source for the Design Values is EPA, communication from the Office of Air Quality Planning & Standards, Mark Schmidt, February 15, 2011.
- Grades** are based on EPA's determination of meeting or failure to meet the NAAQS for annual PM_{2.5} levels during 2007-2009. 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

2011 Rank ¹	County	ST	Total Population ²	At-Risk Groups							High Ozone Days in Unhealthy Ranges, 2007-2009	
				Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	Poverty ⁹	Weighted Avg. ¹⁰	Grade ¹¹
1	San Bernardino	CA	2,017,673	601,101	172,905	39,874	111,493	58,546	25,840	335,321	136.8	F
2	Riverside	CA	2,125,440	615,621	245,456	40,837	118,086	64,267	31,066	290,003	126.2	F
3	Kern	CA	807,407	250,561	72,666	16,621	43,747	23,012	10,309	170,614	102.8	F
4	Tulare	CA	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,542	101.3	F
5	Los Angeles	CA	9,848,011	2,500,804	1,042,989	165,892	576,310	306,992	141,524	1,552,196	91.5	F
6	Fresno	CA	915,267	275,906	89,528	18,302	50,145	26,546	12,137	192,638	58.8	F
7	Sacramento	CA	1,400,949	361,552	157,628	23,984	81,493	44,281	21,049	210,786	42.3	F
8	Kings	CA	148,764	41,081	11,466	2,725	8,468	4,221	1,721	24,546	36.8	F
9	El Dorado	CA	178,447	41,818	21,717	2,774	10,768	6,281	3,177	13,492	35.0	F
10	Nevada	CA	97,751	18,601	18,170	1,234	6,170	3,810	2,163	9,819	30.5	F
11	San Diego	CA	3,053,793	739,625	347,859	49,063	181,385	97,908	46,204	372,782	29.5	F
12	Harris	TX	4,070,989	1,174,860	328,354	96,009	186,211	118,470	51,005	686,928	27.0	F
13	Ventura	CA	802,983	209,334	94,655	13,886	46,559	25,886	12,661	83,323	26.0	F
14	Mariposa	CA	17,792	3,187	3,496	211	1,135	700	401	2,364	24.7	F
15	Placer	CA	348,552	83,608	54,762	5,546	20,640	12,020	6,442	25,053	24.2	F
16	Merced	CA	245,321	78,461	24,167	5,205	13,076	6,948	3,210	59,349	23.8	F
17	Rowan	NC	140,798	33,135	20,938	2,842	8,364	4,817	2,519	22,778	23.7	F
18	San Luis Obispo	CA	266,971	49,825	39,636	3,305	16,962	9,572	4,880	33,198	23.3	F
19	Tarrant	TX	1,789,900	507,390	155,996	41,464	82,590	53,033	23,400	254,582	22.3	F
20	Imperial	CA	166,874	51,337	17,578	3,405	9,042	4,822	2,259	35,368	19.8	F
21	Stanislaus	CA	510,385	149,225	53,538	9,899	28,322	15,287	7,192	85,583	19.3	F
21	Harford	MD	242,514	59,776	29,902	7,135	16,488	8,095	4,027	14,948	19.3	F
21	Mecklenburg	NC	913,639	237,842	78,551	20,398	53,271	27,572	11,905	126,807	19.3	F
24	Hamilton	OH	855,062	200,406	115,705	18,790	64,933	28,687	14,447	126,872	18.7	F
25	Fairfield	CT	901,208	223,771	119,291	26,823	63,497	30,094	15,271	72,291	17.8	F

Notes:

- Counties are ranked by weighted average.
- Total Population** represents the at-risk populations in counties with ozone monitors.
- Those **18 and under** and **65 and over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
- Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2009 based on state rates (BRFSS) applied to population estimates (U.S. Census).
- Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2009, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to population estimates (U.S. Census).
- Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- Poverty** estimates come from the U.S. Census Bureau and are for all ages.
- The **Weighted Average** was derived by counting the number of days in each unhealthy range (orange, red, purple) in each year (2007-2009), 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.
- 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
Alexandria, LA	154,101
Amarillo, TX	246,474
Asheville-Brevard, NC	442,875
Athens-Clarke County, GA	192,222
Austin-Round Rock-Marble Falls, TX	1,705,075
Bangor, ME	149,419
Billings, MT	154,553
Bloomington-Normal, IL	167,699
Brownsville-Harlingen-Raymondville, TX	416,766
Burlington-South Burlington, VT	208,055
Cape Coral-Fort Myers, FL	586,908
Champaign-Urbana, IL	226,132
Cheyenne, WY	88,854
Colorado Springs, CO	626,227
Corpus Christi-Kingsville, TX	447,111
Farmington, NM	124,131
Fayetteville, NC	360,355
Fort Collins-Loveland, CO	298,382
Greenville-Spartanburg-Anderson, SC	1,264,930
Gulfport-Biloxi-Pascagoula, MS	394,375
Hattiesburg, MS	143,093
Honolulu, HI	907,574
Houma-Bayou Cane-Thibodaux, LA	202,973
Jackson-Yazoo City, MS	568,847
Lafayette-Acadiana, LA	546,834
Lake Charles-Jennings, LA	225,235

Metropolitan Statistical Area	Population
Lake Havasu City-Kingman, AZ	194,825
Lansing-East Lansing-Owosso, MI	523,609
Lincoln, NE	298,012
Longview-Marshall, TX	271,669
McAllen-Edinburg-Pharr, TX	741,152
Mobile-Daphne-Fairhope, AL	591,599
Monroe-Bastrop, LA	202,309
Oklahoma City-Shawnee, OK	1,297,552
Palm Bay-Melbourne-Titusville, FL	536,357
Pensacola-Ferry Pass-Brent, FL	455,102
Pueblo, CO	157,224
Rocky Mount, NC	146,596
Saginaw-Bay City-Saginaw Township North, MI	307,484
Salinas, CA	410,370
San Luis Obispo-Paso Robles, CA	266,971
Santa Fe-Espanola, NM	188,210
Sarasota-Bradenton-Punta Gorda, FL	845,078
Shreveport-Bossier City-Minden, LA	432,060
Spokane, WA	468,684
Springfield, IL	208,182
Springfield, MO	430,900
St. Joseph, MO-KS	126,644
Syracuse-Auburn, NY	725,610
Texarkana, TX-Texarkana, AR	137,486
Tucson, AZ	1,020,200

Note:

1. This list represents cities with the lowest levels of short term PM_{2.5} air pollution. Monitors in these cities reported no days with unhealthy PM_{2.5} levels.

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	88,854
2	4.4	Santa Fe-Espanola, NM	188,210
3	5.6	Tucson, AZ	1,020,200
4	5.8	Great Falls, MT	82,178
4	5.8	Honolulu, HI	907,574
6	5.9	Anchorage, AK	374,553
7	6.0	Albuquerque, NM	857,903
7	6.0	Amarillo, TX	246,474
9	6.3	Redding, CA	181,099
10	6.7	Salinas, CA	410,370
11	6.8	Bismarck, ND	106,286
12	6.9	Boise City-Nampa, ID	606,376
13	7.0	Billings, MT	154,553
14	7.1	Cape Coral-Fort Myers, FL	586,908
14	7.1	Flagstaff, AZ	129,849
14	7.1	Fort Collins-Loveland, CO	298,382
14	7.1	Palm Bay-Melbourne-Titusville, FL	536,357
14	7.1	Sarasota-Bradenton-Punta Gorda, FL	845,078
19	7.2	Claremont-Lebanon, NH-VT	214,431
20	7.4	Port St. Lucie-Sebastian-Vero Beach, FL	541,463
20	7.4	Rapid City, SD	124,766
22	7.5	Duluth, MN-WI	276,368
23	7.8	Fargo-Wahpeton, ND-MN	222,433
24	7.9	Bangor, ME	149,419
24	7.9	Burlington-South Burlington, VT	208,055
24	7.9	Orlando-Deltona-Daytona Beach, FL	2,747,614

Notes:

1. This list represents cities with the lowest levels of annual PM_{2.5} air pollution.
2. Cities are ranked by using the highest design value for any county within that metropolitan area.
3. The **Design Value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality meets the standard. The source for the Design Values is EPA, communication from the Office of Air Quality Planning & Standards, Mark Schmidt, February 15, 2011.

Cleanest U.S. Cities for Ozone Air Pollution¹

Metropolitan Statistical Area	Population
Bismarck, ND	106,286
Brownsville-Harlingen-Raymondville, TX	416,766
Brunswick, GA	103,841
Coeur d'Alene, ID	139,390
Dothan-Enterprise-Ozark, AL	239,475
Duluth, MN-WI	276,368
Fargo-Wahpeton, ND-MN	222,433
Honolulu, HI	907,574
Laredo, TX	241,438
Lincoln, NE	298,012
Monroe-Bastrop, LA	202,309
Naples-Marco Island, FL	318,537
Port St. Lucie-Sebastian-Vero Beach, FL	541,463
Rapid City, SD	124,766
Rochester, MN	185,618
Santa Fe-Espanola, NM	188,210
Savannah-Hinesville-Fort Stewart, GA	417,512
Sioux Falls, SD	238,122
Spokane, WA	468,684
Topeka, KS	230,824

Note:

1. This list represents cities with no monitored ozone air pollution in unhealthy ranges using the Air Quality Index based on 2008 NAAQS.

Cleanest Counties for Short-term Particle Pollution (24-hour PM_{2.5})¹

County	State	MSAs and Respective CSA ²
Anchorage Municipality	AK	Anchorage, AK
Baldwin	AL	Mobile-Daphne-Fairhope, AL
Mobile	AL	Mobile-Daphne-Fairhope, AL
Arkansas	AR	
Ashley	AR	
Faulkner	AR	Little Rock-North Little Rock-Pine Bluff, AR
Polk	AR	
Sebastian	AR	Fort Smith, AR-OK
Cochise	AZ	
Mohave	AZ	Lake Havasu City-Kingman, AZ
Pima	AZ	Tucson, AZ
Humboldt	CA	
Monterey	CA	Salinas, CA
San Benito	CA	San Jose-San Francisco-Oakland, CA
San Luis Obispo	CA	San Luis Obispo-Paso Robles, CA
Santa Cruz	CA	San Jose-San Francisco-Oakland, CA
Sonoma	CA	San Jose-San Francisco-Oakland, CA
El Paso	CO	Colorado Springs, CO
Elbert	CO	Denver-Aurora-Boulder, CO
Larimer	CO	Fort Collins-Loveland, CO
Pueblo	CO	Pueblo, CO
Brevard	FL	Palm Bay-Melbourne-Titusville, FL
Citrus	FL	
Escambia	FL	Pensacola-Ferry Pass-Brent, FL
Lee	FL	Cape Coral-Fort Myers, FL
Sarasota	FL	Sarasota-Bradenton-Punta Gorda, FL
Clarke	GA	Athens-Clarke County, GA
Honolulu	HI	Honolulu, HI
Lee	IA	
Van Buren	IA	
Adams	IL	
Champaign	IL	Champaign-Urbana, IL
Jersey	IL	St. Louis-St. Charles-Farmington, MO-IL
Lake	IL	Chicago-Naperville-Michigan City, IL-IN-WI
Lasalle	IL	
McLean	IL	Bloomington-Normal, IL

County	State	MSAs and Respective CSA ²
Sangamon	IL	Springfield, IL
St. Clair	IL	St. Louis-St. Charles-Farmington, MO-IL
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Linn	KS	Kansas City-Overland Park-Kansas City, MO-KS
Sumner	KS	Wichita-Winfield, KS
Wyandotte	KS	Kansas City-Overland Park-Kansas City, MO-KS
Campbell	KY	Cincinnati-Middletown-Wilmington, OH-KY-IN
Caddo Parish	LA	Shreveport-Bossier City-Minden, LA
Calcasieu Parish	LA	Lake Charles-Jennings, LA
East Baton Rouge Parish	LA	Baton Rouge-Pierre Part, LA
Iberville Parish	LA	Baton Rouge-Pierre Part, LA
Lafayette Parish	LA	Lafayette-Acadiana, LA
Ouachita Parish	LA	Monroe-Bastrop, LA
Rapides Parish	LA	Alexandria, LA
St. Bernard Parish	LA	New Orleans-Metairie-Bogalusa, LA
Tangipahoa Parish	LA	
Terrebonne Parish	LA	Houma-Bayou Cane-Thibodaux, LA
Bristol	MA	Boston-Worcester-Manchester, MA-RI-NH
Essex	MA	Boston-Worcester-Manchester, MA-RI-NH
Middlesex	MA	Boston-Worcester-Manchester, MA-RI-NH
Harford	MD	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV
Cumberland	ME	Portland-Lewiston-South Portland, ME
Hancock	ME	
Kennebec	ME	
Penobscot	ME	Bangor, ME
Piscataquis	ME	
Bay	MI	Saginaw-Bay City-Saginaw Township North, MI
Genesee	MI	Detroit-Warren-Flint, MI
Ingham	MI	Lansing-East Lansing-Owosso, MI
Macomb	MI	Detroit-Warren-Flint, MI
Manistee	MI	
Missaukee	MI	
Buchanan	MO	St. Joseph, MO-KS
Clay	MO	Kansas City-Overland Park-Kansas City, MO-KS
Greene	MO	Springfield, MO

Notes:

1. This list represents counties with the lowest levels of short term PM_{2.5} air pollution. Monitors in these counties reported no days with unhealthy PM_{2.5} levels.
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 metropolitan statistical areas and individual counties.

Cleanest Counties for Short-term Particle Pollution (24-hour PM_{2.5})¹ (cont.)

County	State	MSAs and Respective CSA ²
Ste. Genevieve	MO	
Adams	MS	
Bolivar	MS	
Forrest	MS	Hattiesburg, MS
Grenada	MS	
Harrison	MS	Gulfport-Biloxi-Pascagoula, MS
Hinds	MS	Jackson-Yazoo City, MS
Jackson	MS	Gulfport-Biloxi-Pascagoula, MS
Jones	MS	
Lee	MS	
Yellowstone	MT	Billings, MT
Buncombe	NC	Asheville-Brevard, NC
Cumberland	NC	Fayetteville, NC
Duplin	NC	
Durham	NC	Raleigh-Durham-Cary, NC
Edgecombe	NC	Rocky Mount, NC
Gaston	NC	Charlotte-Gastonia-Salisbury, NC-SC
Haywood	NC	Asheville-Brevard, NC
Mcdowell	NC	
Rowan	NC	Charlotte-Gastonia-Salisbury, NC-SC
Watauga	NC	
Billings	ND	
Mercer	ND	
Hall	NE	
Lancaster	NE	Lincoln, NE
Scotts Bluff	NE	
Belknap	NH	Boston-Worcester-Manchester, MA-RI-NH
Rockingham	NH	Boston-Worcester-Manchester, MA-RI-NH
Chaves	NM	
Grant	NM	
Lea	NM	
San Juan	NM	Farmington, NM
Sandoval	NM	Albuquerque, NM
Santa Fe	NM	Santa Fe-Espanola, NM
Essex	NY	

County	State	MSAs and Respective CSA ²
Onondaga	NY	Syracuse-Auburn, NY
St. Lawrence	NY	
Suffolk	NY	New York-Newark-Bridgeport, NY-NJ-CT-PA
Medina	OH	Cleveland-Akron-Elyria, OH
Caddo	OK	
Mayes	OK	
Oklahoma	OK	Oklahoma City-Shawnee, OK
Ottawa	OK	
Linn	OR	
Umatilla	OR	
Union	OR	
Greenville	SC	Greenville-Spartanburg-Anderson, SC
Oconee	SC	Greenville-Spartanburg-Anderson, SC
Spartanburg	SC	Greenville-Spartanburg-Anderson, SC
Brown	SD	
Bowie	TX	Texarkana, TX-Texarkana, AR
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Harrison	TX	Longview-Marshall, TX
Hidalgo	TX	McAllen-Edinburg-Pharr, TX
Nueces	TX	Corpus Christi-Kingsville, TX
Orange	TX	Beaumont-Port Arthur, TX
Potter	TX	Amarillo, TX
Travis	TX	Austin-Round Rock-Marble Falls, TX
Bristol City	VA	Johnson City-Kingsport-Bristol (Tri-Cities), TN-VA
Frederick	VA	Washington-Baltimore-Northern Virginia, DC-MD-VA-WV
Page	VA	
Bennington	VT	
Chittenden	VT	Burlington-South Burlington, VT
Spokane	WA	Spokane, WA
Campbell	WY	
Converse	WY	
Laramie	WY	Cheyenne, WY
Teton	WY	

Notes:

1. This list represents counties with the lowest levels of short term PM_{2.5} air pollution. Monitors in these counties reported no days with unhealthy PM_{2.5} levels.

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 metropolitan statistical areas and individual counties.

Top 25 Cleanest Counties for Year-round Particle Pollution (Annual PM_{2.5})¹

2010 Rank ²	County	ST	Design Value ³
1	Converse	WY	3.7
2	Laramie	WY	4.2
3	Elbert	CO	4.4
3	Santa Fe	NM	4.4
5	Billings	ND	4.5
6	Lake	CA	4.7
6	Maui	HI	4.7
8	Hancock	ME	4.8
8	Essex	NY	4.8
10	Jackson	SD	4.9
11	Grant	NM	5.0
12	Custer	SD	5.5
13	Pima	AZ	5.6
13	Piscataquis	ME	5.6
13	Campbell	WY	5.6
16	Honolulu	HI	5.8
16	Cascade	MT	5.8
16	St. Lawrence	NY	5.8
19	Anchorage Municipality	AK	5.9
20	Bernalillo	NM	6.0
20	Potter	TX	6.0
20	Ashland	WI	6.0
23	Douglas	CO	6.1
24	Mercer	ND	6.2
24	San Benito	CA	6.2

Notes:

1. This list represents counties with the lowest levels of monitored long term PM_{2.5} air pollution.
2. Counties are ranked by design value.
3. The Design Value is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality meets the standard. The source for the Design Values is EPA, communication from the Office of Air Quality Planning & Standards, Mark Schmidt, February 15, 2011.

Cleanest Counties for Ozone Air Pollution¹

County	State	Metropolitan Statistical Area
Houston	AL	Dothan-Enterprise-Ozark, AL
Navajo	AZ	
Humboldt	CA	
Lake	CA	
Marin	CA	San Jose-San Francisco-Oakland, CA
Mendocino	CA	
San Francisco	CA	San Jose-San Francisco-Oakland, CA
San Mateo	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
Montezuma	CO	
Collier	FL	Naples-Marco Island, FL
Columbia	FL	
Holmes	FL	
St. Lucie	FL	Port St. Lucie-Sebastian-Vero Beach, FL
Chatham	GA	Savannah-Hinesville-Fort Stewart, GA
Glynn	GA	Brunswick, GA
Honolulu	HI	Honolulu, HI
Montgomery	IA	
Palo Alto	IA	
Polk	IA	Des Moines-Newton-Pella, IA
Butte	ID	
Kootenai	ID	Coeur d'Alene, ID
Will	IL	Chicago-Naperville-Michigan City, IL-IN-WI
Linn	KS	Kansas City-Overland Park-Kansas City, MO-KS

County	State	Metropolitan Statistical Area
Shawnee	KS	Topeka, KS
Trego	KS	
Ouachita Parish	LA	Monroe-Bastrop, LA
Becker	MN	
Carlton	MN	Duluth, MN-WI
Lyon	MN	
Olmsted	MN	Rochester, MN
Scott	MN	Minneapolis-St. Paul-St. Cloud, MN-WI
St. Louis	MN	Duluth, MN-WI
Lauderdale	MS	
Flathead	MT	
Swain	NC	
Billings	ND	
Burke	ND	
Burleigh	ND	Bismarck, ND
Cass	ND	Fargo-Wahpeton, ND-MN
Dunn	ND	
McKenzie	ND	
Mercer	ND	
Oliver	ND	
Douglas	NE	Omaha-Council Bluffs-Fremont, NE-IA
Lancaster	NE	Lincoln, NE
Sioux	NE	
Eddy	NM	
Grant	NM	
Lea	NM	
Luna	NM	
Santa Fe	NM	Santa Fe-Espanola, NM
Lyon	NV	Reno-Sparks-Fernley, NV
Adair	OK	

County	State	Metropolitan Statistical Area
Cherokee	OK	
Cleveland	OK	Oklahoma City-Shawnee, OK
Dewey	OK	
Ottawa	OK	
Columbia	OR	Portland-Vancouver-Hillsboro, OR-WA
Umatilla	OR	
Custer	SD	
Jackson	SD	
Meade	SD	Rapid City, SD
Minnehaha	SD	Sioux Falls, SD
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Harrison	TX	Longview-Marshall, TX
Hunt	TX	Dallas-Fort Worth, TX
Webb	TX	Laredo, TX
San Juan	UT	
Uintah	UT	
Page	VA	
Clallam	WA	
Spokane	WA	Spokane, WA
Ashland	WI	
Washington	WI	Milwaukee-Racine-Waukesha, WI
Waukesha	WI	Milwaukee-Racine-Waukesha, WI
Sweetwater	WY	
Uinta	WY	

Note:

1. This list represents counties with no monitored ozone air pollution in unhealthy ranges using the Air Quality Index based on 2008 NAAQS.

Health Effects of Ozone and Particle Pollution

Ozone and particle pollution are the most widespread air pollutants—and among the most dangerous. Recent research has revealed new insights into how they can harm the body—including taking the lives of infants and altering the lungs of children. All in all, the evidence shows that the risks are greater than we once thought.

Recent findings provide more evidence about the health impacts of these pollutants:

- **Ozone pollution can shorten life, a conclusion confirmed by a 2008 scientific review by the National Research Council.**¹ Evidence warns that some segments of the population may face higher risks from dying prematurely because of ozone pollution, including communities with high unemployment or high public transit use and large Black/African-American populations.²
- **Good news: Reducing air pollution has extended life expectancy.** Thanks to a drop in particle pollution between 1980 and 2000, life expectancy in 51 U.S. cities increased by 5 months on average, according to a 2009 analysis.³
- **Growing evidence shows that diabetics face a greater risk from air pollution than once believed.** Several studies found increased risk of several factors associated with cardiovascular risks in people with diabetes.⁴ Some new research with animals indicates that fine particle pollution may impact insulin resistance and other factors.⁵
- **Lower levels of ozone and particle pollution pose bigger threat than previously thought.** A Canadian study showed that levels well below those considered safe for these pollutants triggered asthma attacks and increased the risk of emergency room visits and hospital admissions for children with asthma.⁶ Another study found that low levels of these pollutants increased the risk of hospital treatment for pneu-

monia and chronic obstructive pulmonary disease (COPD).⁷

- ❖ Busy highways are high risk zones. Not only may they worsen diseases, but some evidence warns that years of breathing the pollution near busy roads may increase the risk of developing chronic diseases.
- ❖ A growing body of evidence suggests breathing pollution from heavy traffic may cause new cases of asthma in children.⁸
- ❖ Some emerging research has found particle pollution associated with increasing the risk of new cases of three chronic diseases in adults: adult-onset asthma,⁹ diabetes,¹⁰ and COPD, especially in people who already have asthma or diabetes.¹¹
- ❖ Research had already connected pollution from heavy highway traffic to higher risks for heart attack, allergies, premature births and the death of infants around the time they are born.¹² Evidence of the impact of traffic pollution, even in a city with generally “cleaner” air, expanded the concern over the health effects of chronic exposure to exhaust from heavy traffic.¹³

Two types of air pollution dominate the problem in the U.S.: ozone and particle pollution. 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, ozone and particle pollution are the most widespread pollutants.

Ozone Pollution

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

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

What Is Ozone?

Ozone (O₃) is an extremely reactive gas molecule composed of three oxygen atoms. It is the primary ingredient of smog air pollution and is very harmful to breathe. Ozone attacks lung tissue by reacting chemically with it.

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

Where Does Ozone Come From?

What you see coming out of the tailpipe on a car or a truck isn't ozone, but the raw ingredients for making ozone. Ozone is formed by chemical reactions in the atmosphere from two raw gases that do come out of tailpipes, smokestacks and many other sources. These essential raw ingredients for ozone are nitrogen oxides (NO_x) and hydrocarbons, also called volatile organic compounds (VOC_s). They are produced primarily when fossil fuels like gasoline, oil or coal are burned or when some chemicals, like solvents, evaporate.

When NO_x and VOC_s come in contact with both heat and sunlight, they react to form ozone smog. NO_x 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. The formula for ozone is simple, and like any formula, the ingredients must all be present and in the right proportions to make the final product.



You may have wondered why “ozone action day” warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or refilling your gas tank during daylight hours. Lawn mower exhaust and gasoline vapors are VOCs that help produce ozone in the heat and sun. Take away the sunlight and ozone doesn't form, so refilling your gas tank after dark is better on high ozone days. Since we can't control sunlight and heat, we must reduce the chemical raw ingredients if we want to reduce ozone.

Who Is at Risk from Breathing Ozone?

Five groups of people are especially vulnerable to the effects of breathing ozone:

- children and teens;
- anyone 65 and older;
- people who work or exercise outdoors;
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis); and
- “responders” who are otherwise healthy but for some reason react more strongly to ozone.¹⁴

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

Lifeguards in Galveston, Texas, provided evidence of the impact of even short-term exposure to ozone on healthy, active adults in a study published in 2008. Testing the breathing capacity of these outdoor workers several times a day, researchers found that many lifeguards had greater obstruction in their airways when ozone levels were high. Because of this research, Galveston became the first city in the nation to install an air quality warning flag system on the beach.¹⁵

How Ozone Pollution Harms Your Health

Breathing ozone can shorten your life. Two early studies published in 2004 found strong evidence of the deadly impact of ozone in cities across the U.S. and in Europe. Even on days when ozone levels were low, the researchers found that the risk of premature death increased with higher levels of ozone. They estimated that over 3,700 deaths annually in the U.S. could be attributed to a 10-parts-per-billion increase in ozone levels.¹⁶ Another study, published the same week, looked at 23 European cities and found similar effects on mortality from short-term exposure to ozone.¹⁷

Confirmation came in the summer of 2005. Three groups of researchers working independently reviewed and analyzed the research around deaths associated with short-term exposures to ozone. The three teams—at Harvard, Johns Hopkins and New York University—used different approaches but all came to similar conclusions. All three studies reported a small but robust association between daily ozone levels and increased deaths.¹⁸ Writing a commentary on these reviews, David Bates, MD, explained how these premature deaths could occur:

“Ozone is capable of causing inflammation in the lung at lower concentrations than any other gas. Such an effect would be a hazard to anyone with heart failure and pulmonary congestion, and would worsen the function of anyone with advanced lung disease.”¹⁹

In 2008 a committee of the National Research Council, a

division of the National Academy of Sciences, reviewed the evidence again and concluded that “short-term exposure to ambient ozone is likely to contribute to premature deaths.” They recommended that preventing early death be included in any future estimates of the benefits of reducing ozone.²⁰

New research has begun to identify which groups face higher risk of death from ozone. A study published in 2010 examined records from ten cities in Italy and found women, diabetics and older adults to have a higher risk of premature death from high ozone.²¹

Ozone at levels currently in the U.S. causes immediate health problems. Many areas in the United States produce enough ground-level 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;
- chest pain when inhaling;
- wheezing and coughing;
- asthma attacks;
- increased susceptibility to 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.²²

Breathing ozone for longer periods can alter the lungs’ ability to function. Two studies published in 2005 explored ozone’s ability to reduce the lung’s ability to work efficiently, a term called “lung function.” Each study looked at otherwise healthy groups who were exposed to ozone for long periods: outdoor postal workers in Taiwan and college freshmen who were lifelong residents of Los Angeles or the San Francisco Bay area. Both studies found that the long exposure to elevated ozone levels had decreased their lung function.²³

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.²⁴ 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.²⁵

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 8-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.²⁶ 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 to need hospital admissions even during the same time periods than other children.²⁷ California researchers digging into 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.²⁸

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 to ozone 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.²⁹

Even low levels of ozone may be deadly. A large study of 48 U.S. cities looked at the association between ozone and all-

cause mortality during the summer months. Ozone concentrations by city in the summer months ranged from 16 percent to 80 percent lower than EPA currently considers safe. Researchers found that ozone at those lower levels was associated with deaths from cardiovascular disease, strokes, and respiratory causes.³⁰

Particle Pollution

Ever look at dirty truck exhaust?

The dirty, smoky part of that stream of exhaust is made of particle pollution. Overwhelming evidence shows

that particle pollution—like that coming from that exhaust smoke—can kill. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.

What Is Particle Pollution?

Particle pollution refers to a mix of very tiny solid and liquid particles that are in the air we breathe. But nothing about particle pollution is simple. First of all, the 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. You may not be able to tell when you're breathing particle pollution. Yet it is so dangerous it can shorten your life.

The differences in size make a big difference in how they affect us. Our natural defenses help us to cough or sneeze larger particles out of our bodies. But those defenses don't keep out smaller particles, those that are smaller than 10 microns (or micrometers) in diameter, or about one-seventh the diameter of a single human hair. These particles get trapped in the lungs, while the smallest are so minute that they can pass through the lungs into the bloodstream, just like the essential oxygen molecules we need to survive.

Researchers categorize particles according to size, grouping them as coarse, fine and ultrafine. Coarse particles fall between 2.5 microns and 10 microns in diameter and are called PM_{10-2.5}. Fine particles are 2.5 microns in diameter or smaller and are called PM_{2.5}. Ultrafine particles are smaller than 0.1 micron in diameter³¹ 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 be harmful to your health.

Because particles are formed 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; some are solids suspended in liquids. As the U.S. Environmental Protection Agency puts it, particles are really “a mixture of mixtures.”³² 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.³³

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.³⁴ 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.³⁵

By contrast, chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles. Combustion sources burn fuels and emit gases. These gases can vaporize and then condense to become a particle of the same chemical compound. Or, they can react with other gases or particles in the atmosphere to form a particle of a different chemical compound. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO₂), nitrogen oxides (NO_x) and volatile organic compounds with water and other compounds in the atmosphere.³⁶ Burning fossil fuels in factories, power plants, steel mills, smelters, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment generate a large part of the raw materials for fine particles. So does burning wood in residential fireplaces and wood stoves or burning agricultural fields or forests.

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 confirmed in new studies that validate earlier research.³⁷

Good news came this year from researchers who looked at the impact of the drop in year-round levels of particle pollution between 1980 and 2000 in 51 US cities. They found that, thanks to reductions in particle pollution, people living in these cities had 5 months added to their life expectancy on average.³⁸ This study adds to the growing research that cleaning up air pollution improves life and health. 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.³⁹

Researchers these days are exploring possible differences in health effects of the three sizes of particles and particles from different sources, such as diesel particles from trucks and buses or sulfates from coal-fired power plants. So far, the evidence remains clear that all particles from all sources are dangerous.⁴⁰

Particle pollution can damage the body in ways similar to cigarette smoking. A recent review of the research on how particles cause harm found that the body responds to particles in similar ways to its response to cigarette smoke. These findings help explain why particle pollution can cause heart attacks and strokes.⁴¹

Short-Term Exposure Can Be Deadly

First and foremost, short-term exposure to particle pollution can kill. Peaks or spikes in particle pollution can last for hours to days. Deaths can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—these are deaths that would not have occurred if the air were cleaner.⁴²

Researchers from Harvard University recently tripled the estimated risk of premature death following a review of the newer evidence from fine particle monitors (PM_{2.5}) in 27 US cities.⁴³

Particle pollution also diminishes lung function, causes greater use of asthma medications and increased rates of school absenteeism, emergency room visits and hospital admissions. Other adverse effects can be coughing, wheezing, cardiac arrhythmias and heart attacks. According to the findings from some of the latest studies, short-term increases in particle pollution have been linked to:

- death from respiratory and cardiovascular causes, including strokes;^{44,45,46,47}
- increased mortality in infants and young children;⁴⁸
- increased numbers of heart attacks, especially among the elderly and in people with heart conditions;⁴⁹
- inflammation of lung tissue in young, healthy adults;⁵⁰
- increased hospitalization for cardiovascular disease, including strokes and congestive heart failure;^{51,52,53}

- increased emergency room visits for patients suffering from acute respiratory ailments;⁵⁴
- increased hospitalization for asthma among children;^{55,56,57} and
- increased severity of asthma attacks in children.⁵⁸

Again, the impact of even short-term exposure to particle pollution on healthy adults showed up 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.⁵⁹

Year-Round Exposure

Breathing high levels of particle pollution day in and day out also can be deadly, as landmark studies in the 1990s conclusively showed.⁶⁰ Chronic exposure to particle pollution can shorten life by one to three years.⁶¹ Other impacts range from premature births to serious respiratory disorders, even when the particle levels are very low.

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

- increased hospitalization for asthma attacks for children living near roads with heavy truck or trailer traffic;^{62,63}
- slowed lung function growth in children and teenagers;^{64,65}
- significant damage to the small airways of the lungs;⁶⁶
- increased risk of dying from lung cancer; and⁶⁷
- increased risk of death from cardiovascular disease.⁶⁸

The evidence warns that the death toll is high. Although no national tally exists, California just completed an analysis that estimates that 9,200 people in California die annually from breathing particle pollution.⁶⁹ An updated computer modeling of deaths from pollution caused by coal-fired power plant emissions, exposures which are more predominant outside of California, estimates roughly 13,200 deaths from particle pollution in the Midwest, New England and the Southeast.⁷⁰

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.⁷¹

The Environmental Protection Agency released the most thorough review of the current research on particle pollution in December 2009.⁷² The Agency had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence, in particular research published between 2002 and May 2009. EPA concluded that particle pollution caused multiple, serious threats to health. Their findings are highlighted in the box below.

EPA Concludes Fine Particle Pollution Poses Serious Health Threats

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

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

Who Is at Risk?

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

ever-larger groups at higher risk, including diabetics, and most recently, women over 50.⁷³

Diabetics face increased risk at least in part because of their higher risk for cardiovascular disease. A 2010 study examined prevalence of diagnosed diabetes in relation to fine particle pollution in 2004-2005. The evidence suggested that air pollution is a risk factor for diabetes.⁷⁴ Traffic-related air pollution was implicated in two studies. A German study of nondiabetic women found that new cases of diabetes were more likely as levels of traffic-related pollution and particle pollution increased.⁷⁵ A similar finding of an increased risk for diabetes in women who lived near roadways came in a large study of nurses and health professionals, although that study did not find a strong association with levels of particle pollution.⁷⁶

Researchers are identifying increased risk for workers whose jobs expose them to heavy diesel exhaust as a routine part of their job. The risk of dying from lung cancer and heart disease is markedly higher in truck drivers than in the general population in the U.S., according to a study by Harvard University researchers.⁷⁷ This study of over 50,000 members of the Teamsters Union employed from 1985 to 2000 looked at the cause of death of workers classified by job category. Truckers are exposed to traffic pollution and diesel engine emissions, while dockworkers are exposed to exhaust from forklifts and trucks in the shipyard. The study found that death rates for heart disease were 49 percent higher among truck drivers, and 32 percent higher among dockworkers than in the general U.S. population. Lung cancer death rates were 10 percent higher in the both the drivers and the dockworkers. Railroad workers have also faced higher risks of death from lung cancer and COPD, according to two studies looking at historical data for those workers. Although these studies examined historical data, both found that even accounting for smoking among the workers, the findings showed the impact of the diesel exposures.⁷⁸

Focusing on Children's Health

Children may look like miniature adults, but they're not. Air pollution is especially dangerous to them because their lungs are growing and because they are so active.

Just like the arms and legs, the largest portion of a child's lungs will grow long after he or she is born. Eighty percent of their tiny air sacs develop after birth. Those sacs, called the alveoli, are where the life-sustaining transfer of oxygen to the blood takes place. The lungs and their alveoli aren't fully grown until children become adults.⁷⁹ In addition, the body's defenses that help adults fight off infections are still developing in young bodies.⁸⁰ Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.⁸¹

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.⁸²

In 2004, the American Academy of Pediatrics issued a special statement on the dangers of outdoor air pollution on children's health, pointing out the special differences for children.⁸³

Air Pollution Increases Risk of Underdeveloped Lungs

Another finding from the Southern California Children's Health study looked at the long-term effects of particle pollution on teenagers. Tracking 1,759 children between ages 10 and 18, researchers found that those who grew up in more polluted areas face the increased risk of having underdeveloped lungs, which may never recover to their full capacity. The average drop in lung function was 20 percent below what was expected for the child's age, similar to the impact of growing up in a home with parents who smoked.⁸⁴

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.⁸⁵ A much larger study of 3,300 school children in Southern California found reduced lung function in girls with asthma and boys who spent more time outdoors in areas with high levels of ozone.⁸⁶

Cleaning Up Pollution Can Reduce Risk to Children

There is also real-world evidence that reducing air pollution can help protect children. Two studies published in 2005 added more weight to the argument.

Changes in air pollution from the reunification of Germany proved a real-life laboratory. Both East and West Germany had different levels and sources of particles. Outdoor particle levels were much higher in East Germany, where they came from factories and homes. West Germany had higher concentrations of traffic-generated particles. After reunification, emissions from the factories and homes dropped, but traffic increased. A German study explored the impact on the lungs of six-year olds from both East and West Germany. Total lung capacity improved with the lower particle levels. However, for those children living near busy roads, the increased pollution from the increased traffic kept them from benefiting from the overall cleaner air.⁸⁷

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.⁸⁸

Disparities in the Impact of Air 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,⁸⁹ including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.⁹⁰

Many studies have looked at differences in the impact on premature death. Results have varied widely, particularly for effects between racial groups. Some studies have found no differences among races,⁹¹ while others found greater responsiveness for Whites and Hispanics, but not Blacks/African-Americans,⁹² or for Blacks/African-Americans but not other races or ethnic groups.⁹³ Other researchers have found greater risk for Blacks/African-Americans from air toxics, including those pollutants that also come from traffic sources.⁹⁴

Socioeconomic position has been more consistently associated with harm from air pollution. Recent studies show evidence of that link. Low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution mortality nationwide.⁹⁵ In the 2008 study that found greater risk for premature death for Blacks/African-Americans, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.⁹⁶ 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.⁹⁷ However, two other recent studies in France have found no association with lower income and asthma attacks.⁹⁸

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, Blacks/African-Americans, Mexican-Americans and people living near a central city have higher incidence of diabetes.⁹⁹

Highways May Be Especially Dangerous for Breathing

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

The number of people living “next to a busy road” may include 30 to 45 percent of the population in North America, according to the most recent review of the evidence. In January 2010, the Health Effects Institute published a major review of the evidence by a panel of expert scientists. The panel looked at over 700 studies from around the world, examining the health effects. They concluded that traffic pollution causes asthma attacks in children, and may cause a wide range of other effects including: the onset of childhood asthma, impaired lung function, premature death and death from cardiovascular

diseases, and cardiovascular morbidity. The area most affected, they concluded, was roughly 0.2 mile to 0.3 mile (300 to 500 meters) from the highway.¹⁰⁰

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.¹⁰¹ Studies have found increased risk of premature death from living near a major highway or an urban road.¹⁰² Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.¹⁰³ Urban women in a Boston study experienced decreased lung function associated with traffic-related pollution.¹⁰⁴

How to Protect Yourself from Ozone, 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.

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Statistical Methodology: The Air Quality Data

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 3-year period for 2007-2009 for each monitoring site.

Design values for the annual PM_{2.5} concentrations by county were collected from data previously summarized by the U.S. Environmental Protection Agency (EPA) and were originally downloaded on October 25, 2010 from EPA's website at <http://www.epa.gov/air/airtrends/values.html>. However, EPA began reviewing these design values in January, 2011 and provided a draft of the revised design values to the Lung Association by email on February 15, 2011. That set of data became the basis for the data included in this report.

Ozone Data Analysis

The 2007, 2008, and 2009 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 29, 2010. The data were considered for a 3-year period for the same reason that EPA uses 3 years of data to determine compliance with the ozone: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels, which inaccurately reflect the normal conditions. The highest 8-hour daily maximum concentration in each county for 2007, 2008, and 2009, based on the EPA-defined ozone season, was identified.

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 current national ambient air quality standard for ozone is 0.075 ppm measured over 8-hours. Although EPA is reconsidering that standard, the Agency has postponed a final decision until July 2011. EPA's Air Quality Index reflects the 0.075 ppm standard. A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the ozone level was within the ranges identified by EPA based on the EPA Air Quality Index:

8-hour Ozone Concentration	Air Quality Index Levels
0.000 - 0.059 ppm	■ Good (Green)
0.060 - 0.075 ppm	■ Moderate (Yellow)
0.076 - 0.095 ppm	■ Unhealthy for Sensitive Groups (Orange)
0.096 - 0.115 ppm	■ Unhealthy (Red)
0.116 - 0.374 ppm	■ Very Unhealthy (Purple)
>0.374 ppm	■ Hazardous (Maroon)

The goal of this report was to identify the number of days that 8-hour daily maximum concentrations occurred within the defined ranges, not just those days that would fall 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. 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 18 of the possible 24 8-hour averages). Because the EPA includes days with inadequate data if the standard value is exceeded, our data capture methodology may result at times in underestimations of the

number of 8-hour averages within the higher concentration ranges. However, our experience is that underestimates are infrequent.

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 2007, 2008, and 2009 with monitoring information. The 24-hour PM_{2.5} data were downloaded on August 9, 2010. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the 3 years, the number of days the maximum of the *daily* PM_{2.5} concentration was within the ranges identified by EPA based on the EPA Air Quality Index, adjusted by the American Lung Association as discussed below:

24-hour PM _{2.5} Concentration	Air Quality Index Levels
0.0 µg/m ³ to 15.4 µg/m ³	■ Good (Green)
15.5 µg/m ³ to 35.0 µg/m ³	■ Moderate (Yellow)
35.1 µg/m ³ to 65.4 µg/m ³	■ Unhealthy for Sensitive Groups (Orange)
65.5 µg/m ³ to 150.4 µg/m ³	■ Unhealthy (Red)
150.5 µg/m ³ to 250.4 µg/m ³	■ Very Unhealthy (Purple)
greater than or equal to 250.5 µg/m ³	■ Hazardous (Maroon)

In 2006, the EPA revised the 24-hour National Ambient Air Quality standard for PM_{2.5}, changing the standard to 35 µg/m³ from 65 µg/m³. As of December 2010, the EPA had not announced changes to the Air Quality Index based on that standard. The Lung Association adjusted the level of the category “Unhealthy for Sensitive Groups” to reflect the 2006 standard,

making that category range from 35.1 µg/m³ to 65.4 µg/m³.

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, not just those days that would fall under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were used to eliminate monitoring sites. Only 24-hour averaged PM data were used. Included in the analysis are data collected using only FRM and FEM methods, which reported 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.

Following receipt of the above information, the American Lung Association identified the number of days each county, with at least one PM_{2.5} monitor, experienced air quality designated as orange (Unhealthy for Sensitive Groups), red (Unhealthy), purple (Very Unhealthy) or maroon (Hazardous).

Description of County Grading System

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

The grades for ozone and short-term particle pollution (24-hour PM_{2.5}) were based on a weighted average for each county. To determine the weighted average, the Lung Association followed these steps:

1. First, assigned weighting factors to each category of the Air Quality Index. The number of orange days experienced by each county received a factor of 1; red days, a factor of 1.5; purple days, a factor of 2; and maroon days, a factor of 2.5. This allowed days where the air pollution levels were higher to receive greater weight.
2. Next, multiplied the total number of days within each

category by their assigned factor, then summed all the categories to calculate a total.

3. Finally, divided the total by three to determine the weighted average, since the monitoring data were collected over a three-year period.

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

- All counties with a weighted average of zero (corresponding to no exceedances of the standard over the three-year period) were given a grade of “A.”
- For ozone, an “F” grade was set to generally correlate with the number of unhealthy air days that would place a county in nonattainment for the ozone standard.
- For short-term particle pollution, fewer unhealthy air days are required for an F than for nonattainment under the PM_{2.5} standard. The national air quality standard is set to allow 2 percent of the days during the 3 years to exceed 35 µg/m³ (called a “98th percentile” form) before violating the standard. That would be roughly 21 unhealthy days in 3 years. The grading used in this report would allow only about 1 percent of the days to be over 35 µg/m³ (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.

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

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

Note that this system differs significantly from the methodology EPA uses to determine violations of both the ozone and the 24-hour PM_{2.5} standards. EPA determines whether a county violates the standard based on the 4th maximum daily 8-hour ozone reading each year averaged over three years. Multiple days of unhealthy air beyond the highest four in each year are not considered. By contrast, the system used in this report recognizes when a community’s air quality repeatedly results in unhealthy air throughout the three years. Consequently, some counties will receive grades of “F” in this report, showing repeated instances of unhealthy air, while still meeting EPA’s 2008 or 1997 ozone standard. EPA is currently reconsidering the 2008 standard based on evidence that that standard failed to protect the health of the public.

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 2009 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

EPA's determination of design value for the national ambient air quality standard for annual PM_{2.5} of 15 µg/m³, as described earlier. Counties that EPA listed as being at 15.0 µg/m³ or lower were given grades of "Pass." Counties EPA listed at 15.1 µg/m³ or higher were given grades of "Fail." Where insufficient data existed for EPA to determine a design value, those counties received a grade of "Incomplete."

Design value is the calculated concentration of a pollutant based on the form of the national ambient air quality standard and is used by EPA to determine whether or not the air quality in a county meets the standard. Counties were ranked by design value. Metropolitan areas were ranked by the highest design value among the counties within a given Metropolitan Statistical Area as of 2009 as defined by the OMB. In 2003, the OMB published revised definitions for the nation's Metropolitan Statistical Areas. Therefore, comparisons between MSAs in the *State of the Air* reports from 2000 to 2003 and the *State of the Air* reports from 2004 and later should be made with caution.

The Lung Association received critical assistance from members of the National Association of Clean Air Administrators, formerly known as the State and Territorial Air Pollution Control Administrators and the Association of Local Air Pollution Control Administrators. 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. and Associates. Questions about the annual PM design values were referred to Mr. Schmidt of EPA, who reviewed and had final decision on those determinations. 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 lung disease and other chronic conditions are not generally available. In order to assess the magnitude of lung disease and other 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 estimates of self-reported lung disease and other conditions to project disease prevalence to the county level. The primary exceptions to this are asthma and diabetes, as state-specific estimates for asthma and diabetes are available through one national survey discussed below, and poverty, for which estimates are available at the county level.

Population Estimates

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2009. The Census Bureau also estimated the age-specific breakdown of the population and how many individuals were living in poverty by county. These estimates are the best information on population demographics available between decennial censuses.

Poverty estimates came from the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program. SAIPE was created to provide accurate income and poverty estimates between decennial censuses. 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 Bronchitis and Emphysema. In 2009, the National Health Interview Survey (NHIS) estimated the nationwide annual prevalence of diagnosed chronic bronchitis at 9.9 million; the nationwide lifetime prevalence of diagnosed emphysema was estimated at 4.9 million.

Due to the revision of the NHIS questionnaire, prevalence estimates from the *American Lung Association State of the Air 2000* cannot be compared to later publications. Estimates for chronic bronchitis and emphysema can be compared to the *State of the Air* reports for 2001 through 2009. Furthermore, estimates for chronic bronchitis and emphysema should not be combined as they represent different types of prevalence estimates.

Local area prevalence of chronic bronchitis and emphysema are estimated by applying age-specific national prevalence rates from the 2009 NHIS to age-specific county-level resident populations obtained from the U.S. Census Bureau web site. Prevalence estimates for chronic bronchitis and emphysema are calculated for those aged 18-44 years, 45-64 years and 65 years and older.

Asthma and Diabetes. In 2009, the Behavioral Risk Factor Surveillance System (BRFSS) survey indicated that approximately 8.4 percent of adults residing in the United States and 15.4 percent of children from twenty-nine states and Washington, D.C. reported currently having asthma. The BRFSS indicated that 9.0 percent of adults in the United States had ever been diagnosed with diabetes in 2009.

The prevalence estimate for pediatric asthma is calculated for those younger than 18 years; adult asthma and diabetes are calculated for those aged 18-44 years, 45-64 years and 65 years and older. Local area prevalence of pediatric asthma is estimated by applying the most recent state prevalence rates, or if none are available, the national rate from the BRFSS to pediatric county-level resident populations obtained from the U.S.

Census Bureau web site. Pediatric asthma data from the 2009 BRFSS were available for twenty-nine states and Washington D.C., eleven states¹ from 2008, and one state each² for 2007 and 2006. National data were used for the eight states³ that had no data available since 2006. Local area prevalence of adult asthma and diabetes is estimated by applying age-specific state prevalence rates from the 2009 BRFSS to age-specific county-level resident populations obtained from the U.S. Census Bureau web site.

Cardiovascular Disease Estimates. All cardiovascular disease estimates are based on the 2005 National Health and Nutrition Examination Survey and were obtained from the National Heart Lung and Blood Institute (NHLBI). According to their estimate, 79.8 million Americans suffer from one or more types of cardiovascular disease, including coronary heart disease, hypertension, stroke and heart failure. Local area prevalence of cardiovascular disease is estimated by applying age-specific prevalence rates for those aged 18-44 years, 45-64 years and 65 years and older., provided by NHLBI, to age-specific county-level resident populations obtained from the U.S. Census Bureau web site.

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

Additionally, a major limitation of both surveys is that the information collected represents self-reports of medically diagnosed conditions, which may underestimate disease preva-

1 Arizona, Colorado, Kentucky, Maine, Missouri, New Hampshire, New Mexico, Ohio, Oklahoma, Oregon and Wyoming.

2 Alaska for 2007 and Minnesota for 2006.

3 Alabama, Arkansas, Florida, Massachusetts, North Carolina, South Carolina, South Dakota, and Tennessee.

lence since not all individuals with these conditions have been properly diagnosed. However, the NHIS is the best available source that depicts the magnitude of chronic disease on the national level and the BRFSS is the best available source for state-specific asthma and diabetes information. 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 estimate derived by the NHIS or state estimates derived by the BRFSS.

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- U.S. Census Bureau. Small Area Income and Poverty Estimates. State and County Data, 2009.

State Tables

Alabama	44	Illinois	76	Montana	108	Rhode Island	142
Alaska	46	Indiana	78	Nebraska	110	South Carolina	144
Arizona	48	Iowa	82	Nevada	112	South Dakota	148
Arkansas	50	Kansas	84	New Hampshire	114	Tennessee	150
California	52	Kentucky	86	New Jersey	116	Texas	152
Colorado	56	Louisiana	90	New Mexico	118	Utah	156
Connecticut	58	Maine	92	New York	120	Vermont	158
Delaware	60	Maryland	94	North Carolina	124	Virginia	160
District of Columbia	62	Massachusetts	96	North Dakota	128	Washington	164
Florida	64	Michigan	98	Ohio	130	West Virginia	166
Georgia	68	Minnesota	102	Oklahoma	134	Wisconsin	168
Hawaii	72	Mississippi	104	Oregon	136	Wyoming	172
Idaho	74	Missouri	106	Pennsylvania	138		

State Table Notes

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

Notes for all state data tables

1. **Total Population** is based on 2009 US 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}. They should not be used as population denominators for disease estimates.
3. **Pediatric asthma** estimates are for those under 18 years of age and represent the most recent state prevalence rates, or if none are available, the national rate (both from the Behavioral Risk Factor Surveillance System, or BRFSS) applied to county population estimates (US Census).
4. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2009 based on state rates (BRFSS) applied to county population estimates (US Census).
5. **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed within 2009 based on national rates (National Health Interview System, or NHIS) applied to county population estimates (US Census).
6. **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime based on national rates (NHIS) applied to county population estimates (US Census).
7. **CV disease** estimates are for adults 18 and over, based on national rates (2005 National Health and Nutrition Examination Survey, or NHANES, provided by the National Heart Lung and Blood Institute) applied to county population estimates (US Census). CV disease includes coronary heart disease, hypertension, stroke, and heart failure.
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 (US Census).
9. **Poverty** estimates include all ages and come from the U.S. Census Bureau's Small Area Estimates Branch, 2009.
10. Adding across rows does not produce valid estimates. For example, because of differences in the surveys used to gather the information, adding pediatric and adult asthma does not produce an accurate estimate of total population with asthma. Adding emphysema and chronic bronchitis will double-count people with both diseases.

Notes for all state grades tables.

1. The **Weighted Average (Wgt. Avg)** was derived by adding the three years of individual level data (2007-2009), 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.
 - a. **INC** indicates incomplete monitoring data for all three years. Therefore, those counties are excluded from the grade analysis or received an Incomplete.
 - b. **DNC (Data Not Collected)** indicates that data on that particular pollutant is not collected in that county.
 - c. Grades are as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.
2. 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 source for the Design Values is EPA, communication from the Office of Air Quality Planning & Standards, Mark Schmidt, February 15, 2011.

American Lung Association in Alabama

2200 Riverchase Center #604
 Birmingham, AL 35244
 (205) 987-7432
www.lungusa.org/alabama

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Baldwin	179,878	41,578	30,610	3,566	10,456	6,334	3,478	55,690	17,553	23,590
Clay	13,640	2,908	2,500	249	810	496	278	4,400	1,386	2,555
Colbert	54,639	12,037	9,168	1,032	3,222	1,946	1,058	17,039	5,377	8,648
Dekalb	69,380	17,719	9,903	1,520	3,931	2,296	1,191	19,671	6,192	14,886
Elmore	79,233	19,280	9,576	1,654	4,583	2,595	1,263	21,625	6,818	10,373
Escambia	37,434	8,592	5,678	737	2,196	1,280	669	10,998	3,452	7,761
Etowah	103,645	24,190	16,769	2,075	6,021	3,600	1,939	31,371	9,881	17,467
Houston	100,085	24,528	15,808	2,104	5,739	3,396	1,817	29,491	9,263	17,485
Jefferson	665,027	158,005	90,242	13,551	38,702	22,191	11,187	187,691	59,012	107,081
Lawrence	34,106	7,810	4,598	670	1,996	1,171	594	9,939	3,153	5,497
Madison	327,744	78,451	41,181	6,728	19,034	10,855	5,351	90,951	28,687	32,925
Mobile	411,721	106,494	51,499	9,133	23,309	13,298	6,593	111,683	35,181	75,425
Montgomery	224,119	56,008	27,243	4,803	12,909	7,171	3,469	59,534	18,625	42,293
Morgan	117,293	28,822	16,820	2,472	6,721	3,949	2,050	33,859	10,686	18,397
Russell	50,846	12,515	7,137	1,073	2,929	1,675	854	14,233	4,457	9,975
Shelby	192,503	50,391	17,778	4,322	10,890	6,029	2,735	48,803	15,487	13,085
Sumter	12,853	3,020	1,914	259	749	435	226	3,731	1,171	4,399
Talladega	80,242	18,744	11,439	1,608	4,674	2,737	1,411	23,390	7,385	14,413
Tuscaloosa	184,035	41,523	20,332	3,561	11,019	5,893	2,698	47,760	14,849	34,591
Walker	68,742	15,535	11,479	1,332	4,028	2,422	1,316	21,196	6,678	10,828
Totals	3,007,165	728,150	401,674	62,448	173,920	99,769	50,177	843,055	265,295	471,674

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Baldwin	10	0	0	3.3	F
Clay	INC	INC	INC	INC	INC
Colbert	5	0	0	1.7	C
Dekalb	DNC	DNC	DNC	DNC	DNC
Elmore	3	0	0	1.0	C
Escambia	DNC	DNC	DNC	DNC	DNC
Etowah	3	0	0	1.0	C
Houston	0	0	0	0.0	A
Jefferson	38	4	0	14.7	F
Lawrence	INC	INC	INC	INC	INC
Madison	12	1	0	4.5	F
Mobile	17	0	0	5.7	F
Montgomery	7	0	0	2.3	D
Morgan	13	0	0	4.3	F
Russell	5	0	0	1.7	C
Shelby	20	3	0	8.2	F
Sumter	1	0	0	0.3	B
Talladega	DNC	DNC	DNC	DNC	DNC
Tuscaloosa	10	0	0	3.3	F
Walker	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	INC	INC
3	0	0	1.0	C	10.9	PASS
2	0	0	0.7	B	11.1	PASS
1	0	0	0.3	B	11.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
10	0	0	3.3	F	12.6	PASS
2	1	0	1.2	C	10.8	PASS
42	0	0	14.0	F	15.1	FAIL
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	11.8	PASS
0	0	0	0.0	A	10.4	PASS
8	1	0	3.2	D	INC	INC
3	0	0	1.0	C	11.6	PASS
8	2	0	3.7	F	13.0	PASS
5	0	0	1.7	C	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	INC	INC
3	0	0	1.0	C	11.5	PASS
3	0	0	1.0	C	11.9	PASS

American Lung Association in Alaska

500 West International Airport Road, #A
 Anchorage, AK 99518-1105
 (907) 276-5864
www.lungusa.org/alaska

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Anchorage Municipality	286,174	74,045	20,522	5,125	18,902	8,686	3,628	67,975	11,939	21,109
Denali Borough	1,851	417	124	29	132	63	28	505	90	88
Fairbanks North Star Borough	98,660	25,640	6,170	1,775	6,482	2,900	1,146	22,185	3,823	7,420
Juneau City and Borough	30,796	7,014	2,500	486	2,146	1,022	453	8,205	1,468	1,988
Matanuska-Susitna Borough	88,379	24,332	6,780	1,684	5,746	2,712	1,188	21,659	3,864	7,564
Totals	505,860	131,448	36,096	9,099	33,408	15,383	6,443	120,529	21,183	38,169

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Anchorage Municipality	DNC	DNC	DNC	DNC	DNC
Denali Borough	1	0	0	0.3	B
Fairbanks North Star Borough	DNC	DNC	DNC	DNC	DNC
Juneau City And Borough	DNC	DNC	DNC	DNC	DNC
Matanuska-Susitna Borough	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	5.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
17	4	1	8.3	F	12.8	PASS
6	0	0	2.0	C	6.9	PASS
2	0	0	0.7	B	INC	INC

American Lung Association in Arizona

102 West McDowell Road
 Phoenix, AZ 85003-1213
 (602) 258-7505
www.lungusa.org/arizona

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Cochise	129,518	31,172	23,078	2,544	10,362	4,559	2,561	40,510	9,505	19,982
Coconino	129,849	33,783	10,539	2,757	10,653	3,975	1,717	31,523	7,391	22,789
Gila	52,199	11,883	11,701	970	4,139	1,982	1,215	18,373	4,330	10,555
La Paz	20,012	3,761	6,621	307	1,605	825	573	8,121	1,874	5,003
Maricopa	4,023,132	1,096,985	449,288	89,528	320,178	122,984	58,059	1,010,033	234,302	599,393
Mohave	194,825	42,395	43,579	3,460	15,706	7,399	4,497	68,267	16,038	33,981
Navajo	112,975	34,237	13,995	2,794	8,488	3,486	1,769	29,593	6,953	30,282
Pima	1,020,200	238,950	153,660	19,501	83,840	34,538	17,997	296,314	69,111	189,172
Pinal	340,962	90,261	47,067	7,366	27,072	10,833	5,497	91,770	21,269	44,379
Santa Cruz	43,771	13,873	6,074	1,132	3,188	1,357	724	11,776	2,769	10,903
Yavapai	215,686	42,076	51,339	3,434	17,792	8,545	5,273	79,450	18,705	29,979
Yuma	196,972	57,415	36,969	4,686	14,660	6,305	3,636	56,552	13,002	36,667
Totals	6,480,101	1,696,791	853,910	138,480	517,684	206,788	103,518	1,742,282	405,250	1,033,085

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Cochise	1	0	0	0.3	B
Coconino	3	0	0	1.0	C
Gila	18	0	0	6.0	F
La Paz	6	0	0	2.0	C
Maricopa	46	0	0	15.3	F
Mohave	DNC	DNC	DNC	DNC	DNC
Navajo	0	0	0	0.0	A
Pima	3	0	0	1.0	C
Pinal	22	0	0	7.3	F
Santa Cruz	DNC	DNC	DNC	DNC	DNC
Yavapai	INC	INC	INC	INC	INC
Yuma	13	0	0	4.3	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	7.1	PASS
1	0	0	0.3	B	7.1	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	1	0	0.8	B	11.4	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	5.6	PASS
16	0	0	5.3	F	18.8	FAIL
2	1	0	1.2	C	12.8	PASS
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC

American Lung Association in Arkansas

217 W 2nd Street, Suite 105
 Little Rock, AR 72201
 (501) 975-0758
www.lungusa.org/arkansas

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Arkansas	18,971	4,615	3,098	396	1,079	662	362	5,817	1,577	3,196
Ashley	21,941	5,444	3,319	467	1,241	747	397	6,477	1,755	4,703
Crittenden	53,022	15,486	5,581	1,328	2,826	1,610	766	13,287	3,607	14,802
Faulkner	109,386	26,478	10,951	2,271	6,272	3,376	1,498	26,998	7,257	14,790
Garland	98,479	20,785	21,382	1,783	5,858	3,698	2,204	33,779	9,077	14,205
Jackson	16,658	3,612	2,292	310	983	571	287	4,826	1,306	4,108
Newton	8,191	1,663	1,552	143	490	310	177	2,775	753	2,073
Phillips	20,921	6,216	3,103	533	1,106	671	363	5,864	1,588	7,151
Polk	20,259	4,811	3,795	413	1,163	724	414	6,488	1,751	4,391
Pope	60,214	14,186	8,525	1,217	3,476	1,998	1,013	16,929	4,554	10,570
Pulaski	381,904	94,976	47,738	8,145	21,614	12,459	6,141	104,365	28,260	62,547
Sebastian	123,597	32,435	16,130	2,782	6,868	3,995	2,012	33,781	9,139	21,305
Union	42,782	10,458	6,831	897	2,433	1,471	795	12,843	3,474	9,734
Washington	200,181	51,661	19,814	4,431	11,238	6,044	2,686	48,366	12,992	35,893
White	76,338	18,464	10,966	1,584	4,372	2,519	1,288	21,417	5,758	11,944
Totals	1,252,844	311,290	165,077	26,697	71,018	40,855	20,403	344,012	92,849	221,412

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Arkansas	DNC	DNC	DNC	DNC	DNC
Ashley	DNC	DNC	DNC	DNC	DNC
Crittenden	16	1	0	5.8	F
Faulkner	DNC	DNC	DNC	DNC	DNC
Garland	DNC	DNC	DNC	DNC	DNC
Jackson	DNC	DNC	DNC	DNC	DNC
Newton	3	0	0	1.0	C
Phillips	DNC	DNC	DNC	DNC	DNC
Polk	5	0	0	1.7	C
Pope	DNC	DNC	DNC	DNC	DNC
Pulaski	15	0	0	5.0	F
Sebastian	DNC	DNC	DNC	DNC	DNC
Union	DNC	DNC	DNC	DNC	DNC
Washington	1	0	0	0.3	B
White	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	11.2	PASS
0	0	0	0.0	A	10.7	PASS
2	0	0	0.7	B	11.7	PASS
0	0	0	0.0	A	11.1	PASS
1	0	0	0.3	B	11.1	PASS
2	0	0	0.7	B	11.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	11.1	PASS
0	0	0	0.0	A	10.7	PASS
1	0	0	0.3	B	11.6	PASS
2	0	0	0.7	B	12.1	PASS
0	0	0	0.0	A	11.4	PASS
1	0	0	0.3	B	11.2	PASS
INC	INC	INC	INC	INC	INC	INC
1	0	0	0.3	B	10.7	PASS

American Lung Association in California

424 Pendleton Way
 Oakland, CA 94621
 (510)638-5864
www.lungusa.org/california

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Alameda	1,491,482	344,679	162,522	22,864	90,064	48,579	22,624	397,146	104,315	158,531
Amador	37,876	6,380	7,373	423	2,449	1,492	846	13,328	3,601	3,762
Butte	220,577	46,201	33,001	3,065	13,594	7,643	3,920	65,106	17,171	39,717
Calaveras	46,731	8,946	8,921	593	2,944	1,836	1,055	16,530	4,512	5,242
Colusa	21,321	6,555	2,566	435	1,154	642	320	5,406	1,426	2,803
Contra Costa	1,041,274	259,082	126,828	17,186	61,367	34,463	17,043	289,409	77,083	97,510
El Dorado	178,447	41,818	21,717	2,774	10,768	6,281	3,177	53,407	14,516	13,492
Fresno	915,267	275,906	89,528	18,302	50,145	26,546	12,137	215,107	55,930	192,638
Glenn	28,299	8,167	3,548	542	1,574	881	443	7,446	1,969	4,412
Humboldt	129,623	26,149	16,832	1,735	8,107	4,493	2,202	37,555	9,931	23,979
Imperial	166,874	51,337	17,578	3,405	9,042	4,822	2,259	39,462	10,254	35,368
Inyo	17,293	3,816	2,759	253	1,054	635	346	5,583	1,516	2,139
Kern	807,407	250,561	72,666	16,621	43,747	23,012	10,309	184,959	48,102	170,614
Kings	148,764	41,081	11,466	2,725	8,468	4,221	1,721	32,615	8,286	24,546
Lake	65,279	14,413	10,929	956	3,968	2,384	1,313	21,025	5,681	14,185
Los Angeles	9,848,011	2,500,804	1,042,989	165,892	576,310	306,992	141,524	2,496,934	651,091	1,552,196
Madera	148,632	43,645	15,419	2,895	8,233	4,431	2,076	36,298	9,503	28,710
Marin	250,750	51,078	40,694	3,388	15,603	9,301	5,035	81,394	21,996	17,647
Mariposa	17,792	3,187	3,496	211	1,135	700	401	6,285	1,704	2,364
Mendocino	86,040	19,263	13,290	1,278	5,217	3,069	1,639	26,682	7,177	14,864
Merced	245,321	78,461	24,167	5,205	13,076	6,948	3,210	56,540	14,704	59,349
Monterey	410,370	112,705	42,286	7,476	23,348	12,439	5,736	101,182	26,385	67,288
Napa	134,650	31,455	19,941	2,087	8,055	4,632	2,423	39,854	10,621	11,187
Nevada	97,751	18,601	18,170	1,234	6,170	3,810	2,163	34,102	9,286	9,819
Orange	3,026,786	755,550	346,897	50,120	178,032	96,766	46,079	798,336	209,664	318,173
Placer	348,552	83,608	54,762	5,546	20,640	12,020	6,442	104,542	27,901	25,053

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Plumas	20,122	3,615	4,290	240	1,281	814	483	7,441	2,032	2,453
Riverside	2,125,440	615,621	245,456	40,837	118,086	64,267	31,066	533,297	139,608	290,003
Sacramento	1,400,949	361,552	157,628	23,984	81,493	44,281	21,049	365,071	95,904	210,786
San Benito	55,058	15,906	5,110	1,055	3,083	1,663	762	13,513	3,566	7,573
San Bernardino	2,017,673	601,101	172,905	39,874	111,493	58,546	25,840	467,948	122,008	335,321
San Diego	3,053,793	739,625	347,859	49,063	181,385	97,908	46,204	804,440	210,648	372,782
San Francisco	815,358	117,695	114,294	7,807	54,486	29,283	14,044	241,955	62,853	94,134
San Joaquin	674,860	202,135	68,180	13,409	37,098	19,982	9,330	163,489	42,864	103,777
San Luis Obispo	266,971	49,825	39,636	3,305	16,962	9,572	4,880	81,373	21,560	33,198
San Mateo	718,989	160,428	94,255	10,642	43,738	24,475	12,180	205,956	54,613	54,268
Santa Barbara	407,057	96,810	53,553	6,422	24,219	13,250	6,521	110,771	28,968	58,700
Santa Clara	1,784,642	436,221	194,995	28,937	105,776	56,769	26,441	463,876	121,353	159,677
Santa Cruz	256,218	55,780	28,426	3,700	15,763	8,632	4,071	71,010	18,808	34,268
Shasta	181,099	41,659	28,538	2,763	10,878	6,393	3,436	55,709	14,946	27,614
Siskiyou	44,634	9,365	8,647	621	2,742	1,708	990	15,432	4,197	7,083
Solano	407,234	102,344	46,804	6,789	23,930	13,214	6,377	109,749	29,066	42,135
Sonoma	472,102	104,634	64,482	6,941	28,782	16,416	8,351	139,583	37,288	44,093
Stanislaus	510,385	149,225	53,538	9,899	28,322	15,287	7,192	125,454	32,878	85,583
Sutter	92,614	25,610	11,969	1,699	5,231	2,910	1,462	24,562	6,468	13,511
Tehama	61,138	15,300	9,308	1,015	3,574	2,081	1,110	18,068	4,828	11,360
Tulare	429,668	141,279	40,393	9,372	22,622	11,998	5,494	97,299	25,326	97,542
Tuolumne	55,175	9,548	11,095	633	3,540	2,157	1,235	19,353	5,213	7,196
Ventura	802,983	209,334	94,655	13,886	46,559	25,886	12,661	216,244	57,349	83,323
Yolo	199,407	46,043	19,585	3,054	12,034	6,201	2,713	49,304	12,678	30,043
Totals	36,784,738	9,394,103	4,125,946	623,162	2,147,343	1,162,731	550,335	9,567,130	2,509,345	5,102,011

CALIFORNIA

American Lung Association in California

424 Pendleton Way
Oakland, CA 94621
(510)638-5864
www.lungusa.org/california

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Alameda	13	1	0	4.8	F
Amador	27	6	0	12.0	F
Butte	39	3	0	14.5	F
Calaveras	28	3	0	10.8	F
Colusa	1	0	0	0.3	B
Contra Costa	13	0	0	4.3	F
El Dorado	82	14	1	35.0	F
Fresno	132	27	2	58.8	F
Glenn	2	0	0	0.7	B
Humboldt	0	0	0	0.0	A
Imperial	58	1	0	19.8	F
Inyo	25	0	0	8.3	F
Kern	228	51	2	102.8	F
Kings	95	9	1	36.8	F
Lake	0	0	0	0.0	A
Los Angeles	182	51	8	91.5	F
Madera	39	3	0	14.5	F
Marin	0	0	0	0.0	A
Mariposa	66	4	1	24.7	F
Mendocino	0	0	0	0.0	A
Merced	56	9	1	23.8	F
Monterey	1	0	0	0.3	B
Napa	3	0	0	1.0	C
Nevada	84	5	0	30.5	F
Orange	35	2	0	12.7	F
Placer	65	5	0	24.2	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
9	0	0	3.0	D	9.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
8	3	0	4.2	F	12.4	PASS
2	0	0	0.7	B	7.5	PASS
2	0	0	0.7	B	INC	INC
12	0	0	4.0	F	8.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
140	14	0	53.7	F	17.1	FAIL
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	7.3	PASS
8	1	0	3.2	D	8.2	PASS
7	1	0	2.8	D	6.5	PASS
134	29	2	60.5	F	22.6	FAIL
38	1	0	13.2	F	17.3	FAIL
1	1	0	0.8	B	4.7	PASS
51	6	0	20.0	F	15.8	FAIL
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	8.1	PASS
33	1	0	11.5	F	INC	INC
0	0	0	0.0	A	6.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	2	0	2.7	D	7.1	PASS
30	2	0	11.0	F	13.2	PASS
1	0	0	0.3	B	9.0	PASS

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Plumas	DNC	DNC	DNC	DNC	DNC
Riverside	247	77	8	126.2	F
Sacramento	88	22	3	42.3	F
San Benito	15	0	0	5.0	F
San Bernardino	201	121	14	136.8	F
San Diego	81	5	0	29.5	F
San Francisco	0	0	0	0.0	A
San Joaquin	27	3	0	10.5	F
San Luis Obispo	67	2	0	23.3	F
San Mateo	0	0	0	0.0	A
Santa Barbara	19	0	0	6.3	F
Santa Clara	12	1	0	4.5	F
Santa Cruz	0	0	0	0.0	A
Shasta	21	1	0	7.5	F
Siskiyou	0	0	0	0.0	A
Solano	10	0	0	3.3	F
Sonoma	0	0	0	0.0	A
Stanislaus	45	6	2	19.3	F
Sutter	22	2	0	8.3	F
Tehama	38	1	0	13.2	F
Tulare	243	38	2	101.3	F
Tuolumne	42	5	0	16.5	F
Ventura	75	2	0	26.0	F
Yolo	12	1	0	4.5	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
16	7	0	8.8	F	11.3	PASS
69	3	0	24.5	F	18.8	FAIL
38	1	0	13.2	F	12.1	PASS
0	0	0	0.0	A	6.2	PASS
44	6	0	17.7	F	16.2	FAIL
23	3	0	9.2	F	12.8	PASS
5	0	0	1.7	C	9.4	PASS
25	1	0	8.8	F	12.9	PASS
0	0	0	0.0	A	8.4	PASS
1	0	0	0.3	B	8.7	PASS
1	0	0	0.3	B	9.9	PASS
15	0	0	5.0	F	10.8	PASS
0	0	0	0.0	A	6.3	PASS
2	2	1	2.3	D	6.3	PASS
INC	INC	INC	INC	INC	INC	INC
16	0	0	5.3	F	9.8	PASS
0	0	0	0.0	A	8.2	PASS
37	1	0	12.8	F	14.7	PASS
12	6	0	7.0	F	8.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
41	2	0	14.7	F	18.8	FAIL
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	10.9	PASS
5	0	0	1.7	C	INC	INC

American Lung Association in Colorado

5600 Greenwood Plaza Blvd., Suite 100
 Greenwood Village, CO 80111-2316
 (303) 388-4327
www.lungusa.org/colorado

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Adams	440,994	124,557	36,530	13,776	26,049	12,891	5,550	101,955	16,544	58,240
Arapahoe	565,360	145,186	63,674	16,058	34,314	18,101	8,672	149,829	24,853	68,473
Boulder	303,482	64,217	27,667	7,102	19,652	9,982	4,391	79,752	12,998	37,975
Denver	610,345	140,109	61,984	15,496	38,694	18,996	8,367	151,397	24,683	112,871
Douglas	288,225	84,641	18,628	9,361	16,747	8,508	3,588	66,941	10,815	9,477
Elbert	23,287	5,631	2,149	623	1,435	812	390	6,766	1,122	1,252
El Paso	604,542	157,382	59,474	17,406	36,611	19,028	8,765	154,968	25,499	67,373
Garfield	56,298	15,830	4,683	1,751	3,320	1,706	758	13,693	2,236	4,775
Jefferson	536,922	119,688	66,241	13,237	33,944	18,572	9,200	156,197	26,087	43,138
La Plata	51,464	10,231	5,652	1,132	3,370	1,780	834	14,611	2,413	5,749
Larimer	298,382	63,365	33,826	7,008	19,232	9,975	4,669	81,722	13,492	42,850
Mesa	146,093	35,058	20,930	3,877	9,015	4,935	2,550	42,216	7,112	16,909
Montezuma	25,368	6,017	3,974	665	1,562	899	487	7,870	1,339	4,238
Pueblo	157,224	38,848	23,477	4,297	9,595	5,310	2,796	45,809	7,748	25,972
Weld	254,759	70,340	21,241	7,780	15,167	7,590	3,296	60,278	9,798	37,033
Totals	4,362,745	1,081,100	450,130	119,569	268,708	139,085	64,313	1,134,004	186,740	536,325

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	8	0	0	2.7	D
Arapahoe	5	0	0	1.7	C
Boulder	13	0	0	4.3	F
Denver	5	0	0	1.7	C
Douglas	18	0	0	6.0	F
Elbert	DNC	DNC	DNC	DNC	DNC
El Paso	3	0	0	1.0	C
Garfield	INC	INC	INC	INC	INC
Jefferson	32	1	0	11.2	F
La Plata	2	0	0	0.7	B
Larimer	26	0	0	8.7	F
Mesa	1	0	0	0.3	B
Montezuma	0	0	0	0.0	A
Pueblo	DNC	DNC	DNC	DNC	DNC
Weld	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
3	0	0	1.0	C	9.4	PASS
1	0	0	0.3	B	7.2	PASS
1	0	0	0.3	B	8.0	PASS
5	0	0	1.7	C	8.7	PASS
1	0	0	0.3	B	6.1	PASS
0	0	0	0.0	A	4.4	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	7.1	PASS
6	0	0	2.0	C	9.4	PASS
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	INC	INC
3	0	0	1.0	C	8.7	PASS

CONNECTICUT

American Lung Association in Connecticut

45 Ash Street
 East Hartford, CT 06108-3272
 (860) 838-4376
www.lungusa.org/connecticut

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Fairfield	901,208	223,771	119,291	26,823	63,497	30,094	15,271	255,513	44,816	72,291
Hartford	879,835	201,894	126,148	24,200	63,498	30,199	15,570	258,121	45,441	86,396
Litchfield	188,728	40,811	29,408	4,892	13,725	6,864	3,685	59,845	10,726	12,130
Middlesex	165,702	35,045	24,554	4,201	12,186	5,932	3,101	51,066	9,058	9,149
New Haven	848,006	192,012	118,666	23,016	61,586	28,920	14,708	245,616	43,008	97,672
New London	266,830	58,117	37,391	6,966	19,554	9,289	4,739	79,053	13,887	20,119
Tolland	150,461	30,248	17,944	3,626	11,350	5,172	2,467	42,733	7,341	9,140
Totals	3,400,770	781,898	473,402	93,723	245,395	116,470	59,541	991,947	174,277	306,897

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Fairfield	43	7	0	17.8	F
Hartford	9	4	0	5.0	F
Litchfield	23	0	1	8.3	F
Middlesex	19	3	0	7.8	F
New Haven	22	3	0	8.8	F
New London	17	1	0	6.2	F
Tolland	25	3	0	9.8	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
6	0	0	2.0	C	11.3	PASS
3	0	0	1.0	C	9.2	PASS
3	0	0	1.0	C	8.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
12	0	0	4.0	F	11.4	PASS
7	0	0	2.3	D	9.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

DELAWARE

American Lung Association in Delaware

630 Churchmans Road, Suite 202
 Newark, DE 19702
 (302) 737-6414
www.lungusa.org/delaware

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Kent	157,741	39,820	21,087	5,379	10,174	5,140	2,588	43,437	9,359	20,880
New Castle	534,634	127,014	64,384	17,157	35,428	17,582	8,516	146,173	31,533	52,424
Sussex	192,747	40,159	41,222	5,425	12,494	7,287	4,325	66,459	14,445	23,106
Totals	885,122	206,993	126,693	27,961	58,096	30,009	15,429	256,069	55,338	96,410

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Kent	11	0	0	3.7	F
New Castle	27	1	1	10.2	F
Sussex	25	0	0	8.3	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	11.0	PASS
13	0	0	4.3	F	13.0	PASS
1	0	0	0.3	B	11.7	PASS

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

1301 Pennsylvania Ave. NW #800
Washington, DC, DC 20004
1-800-LUNG USA
www.lungusa.org/districtofcolumbia

AT-RISK GROUPS

County	Total Population			Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema				
District Of Columbia	599,657	114,036	70,184	15,905	47,869	20,119	9,253	163,364	36,054	100,489
Totals	599,657	114,036	70,184	15,905	47,869	20,119	9,253	163,364	36,054	100,489

HIGH OZONE DAYS 2007-2009

<u>County</u>	<u>Orange</u>	<u>Red</u>	<u>Purple</u>	<u>Wgt. Avg</u>	<u>Grade</u>
District Of Columbia	29	2	0	10.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

<u>24 Hour</u>					<u>Annual</u>	
<u>Orange</u>	<u>Red</u>	<u>Purple</u>	<u>Wgt. Avg</u>	<u>Grade</u>	<u>Design Value</u>	<u>Pass/Fail</u>
8	0	0	2.7	D	12.1	PASS

American Lung Association in Florida

6852 Belfort Oaks Place
 Jacksonville, FL 32216
 (904) 743-2933
www.lungusa.org/florida

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Alachua	243,574	44,381	26,164	3,806	14,299	7,959	3,469	63,118	15,677	53,221
Baker	26,336	6,774	2,832	581	1,420	832	391	6,830	1,698	4,098
Bay	164,767	37,319	24,313	3,201	9,211	5,664	2,936	48,507	12,074	23,220
Brevard	536,357	107,407	111,885	9,212	30,807	20,287	11,864	183,694	45,782	61,045
Broward	1,766,476	408,191	247,665	35,008	98,263	59,944	30,570	509,713	126,849	227,374
Citrus	140,357	22,661	43,327	1,943	8,338	6,003	4,025	58,109	14,503	21,848
Collier	318,537	64,677	85,470	5,547	17,919	12,345	7,927	116,780	29,130	39,648
Columbia	69,264	15,688	10,602	1,345	3,865	2,385	1,250	20,520	5,108	12,354
Duval	857,040	209,772	94,111	17,991	46,938	27,491	12,907	225,503	56,069	128,651
Escambia	303,343	66,386	45,163	5,693	17,065	10,384	5,337	88,524	22,031	53,032
Highlands	98,704	18,492	31,085	1,586	5,612	4,012	2,729	39,049	9,746	19,374
Hillsborough	1,195,317	292,524	140,604	25,088	65,296	38,461	18,402	317,904	79,056	178,302
Holmes	19,099	4,159	3,155	357	1,071	662	352	5,726	1,425	4,115
Lake	312,119	60,215	94,277	5,164	17,646	12,462	8,348	120,357	30,035	38,764
Lee	586,908	119,851	133,488	10,279	33,300	22,167	13,362	203,460	50,721	74,380
Leon	265,714	52,091	24,329	4,467	15,407	8,497	3,568	66,439	16,496	56,589
Manatee	318,361	66,419	72,588	5,696	17,966	11,998	7,260	110,341	27,509	45,156
Marion	328,547	66,036	80,828	5,663	18,664	12,660	7,864	117,903	29,402	50,861

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Miami-Dade	2,500,625	574,690	360,396	49,287	138,647	83,905	42,750	712,438	177,283	433,363
Okaloosa	178,473	41,380	24,449	3,549	9,921	6,028	3,049	51,073	12,709	21,741
Orange	1,086,480	266,722	104,455	22,875	59,329	33,715	14,961	269,906	67,063	151,852
Osceola	270,618	73,517	32,277	6,305	14,230	8,425	4,092	70,065	17,426	42,239
Palm Beach	1,279,950	268,835	275,578	23,056	72,082	47,219	27,858	428,817	106,874	180,884
Pasco	471,709	99,991	97,450	8,576	26,553	17,269	10,042	155,780	38,819	61,380
Pinellas	909,013	166,476	190,756	14,277	53,355	35,015	20,358	316,179	78,797	118,620
Polk	583,403	140,675	102,687	12,065	31,722	20,047	11,096	176,709	44,011	95,938
St. Lucie	266,502	60,176	54,424	5,161	14,737	9,601	5,597	86,716	21,610	41,047
Santa Rosa	151,759	35,826	18,915	3,073	8,429	5,091	2,516	42,730	10,631	16,912
Sarasota	369,765	59,808	112,837	5,129	21,886	15,566	10,359	150,015	37,437	46,001
Seminole	413,204	95,808	48,312	8,217	23,079	13,750	6,620	114,090	28,377	42,537
Volusia	495,890	95,962	104,014	8,230	28,641	18,705	10,880	168,834	42,074	73,142
Wakulla	32,815	7,085	4,469	608	1,860	1,120	559	9,433	2,347	4,186
Totals	16,561,026	3,649,994	2,802,905	313,035	927,557	579,669	313,298	5,055,262	1,258,770	2,421,874

FLORIDA

American Lung Association in Florida

6852 Belfort Oaks Place
 Jacksonville, FL 32216
 (904) 743-2933
www.lungusa.org/florida

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Alachua	6	0	0	2.0	C
Baker	1	0	0	0.3	B
Bay	8	0	0	2.7	D
Brevard	2	0	0	0.7	B
Broward	1	0	0	0.3	B
Citrus	DNC	DNC	DNC	DNC	DNC
Collier	0	0	0	0.0	A
Columbia	0	0	0	0.0	A
Duval	8	0	0	2.7	D
Escambia	19	0	0	6.3	F
Highlands	3	0	0	1.0	C
Hillsborough	19	2	0	7.3	F
Holmes	0	0	0	0.0	A
Lake	5	0	0	1.7	C
Lee	2	0	0	0.7	B
Leon	5	0	0	1.7	C
Manatee	4	0	0	1.3	C
Marion	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
6	0	0	2.0	C	8.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	9.7	PASS
0	0	0	0.0	A	7.1	PASS
7	0	0	2.3	D	7.3	PASS
0	0	0	0.0	A	7.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	3	0	3.2	D	9.0	PASS
0	0	0	0.0	A	9.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	2	0	1.3	C	8.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	7.1	PASS
4	1	0	1.8	C	10.3	PASS
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Miami-Dade	7	0	0	2.3	D
Okaloosa	INC	INC	INC	INC	INC
Orange	8	0	0	2.7	D
Osceola	4	0	0	1.3	C
Palm Beach	1	0	0	0.3	B
Pasco	9	0	0	3.0	D
Pinellas	5	0	0	1.7	C
Polk	7	0	0	2.3	D
St. Lucie	0	0	0	0.0	A
Santa Rosa	18	0	0	6.0	F
Sarasota	9	0	0	3.0	D
Seminole	3	0	0	1.0	C
Volusia	1	0	0	0.3	B
Wakulla	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
4	0	0	1.3	C	8.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	1	0	1.2	C	7.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	6.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	1	0	1.2	C	8.2	PASS
1	0	0	0.3	B	8.0	PASS
1	0	0	0.3	B	7.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	7.1	PASS
0	1	0	0.5	B	7.9	PASS
2	1	0	1.2	C	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Georgia

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

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Bibb	156,060	41,737	20,447	4,117	7,860	4,992	2,516	42,212	11,980	32,633
Chatham	256,992	60,605	32,180	5,978	13,524	8,354	4,045	69,365	19,484	39,999
Chattooga	26,619	6,027	3,887	594	1,412	904	464	7,698	2,193	4,925
Clarke	116,342	21,334	10,161	2,104	6,567	3,542	1,371	26,729	7,069	38,764
Clayton	275,772	82,519	21,408	8,139	13,462	7,833	3,327	61,615	16,784	44,330
Cobb	714,692	187,982	65,913	18,542	36,649	22,006	9,856	177,038	48,895	79,679
Columbia	112,958	31,667	10,484	3,124	5,673	3,519	1,632	28,772	8,030	7,624
Coweta	127,111	34,773	12,418	3,430	6,418	3,922	1,809	31,954	8,891	12,627
Dawson	22,555	5,267	2,906	520	1,195	765	383	6,455	1,832	2,627
Dekalb	747,274	178,925	63,618	17,648	39,607	23,195	9,939	183,160	50,019	123,939
Dougherty	95,859	25,584	12,037	2,524	4,835	3,026	1,495	25,354	7,158	25,759
Douglas	129,703	38,446	9,842	3,792	6,379	3,782	1,631	29,981	8,213	15,698
Fayette	106,788	28,538	12,988	2,815	5,443	3,630	1,864	31,073	8,900	5,820
Floyd	96,250	24,210	13,783	2,388	4,936	3,164	1,630	27,006	7,700	18,170
Fulton	1,033,756	249,981	81,901	24,657	54,726	31,869	13,419	249,966	68,002	176,169
Glynn	76,820	19,268	11,403	1,901	3,949	2,602	1,376	22,498	6,464	12,754

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Gwinnett	808,167	244,140	55,288	24,081	39,508	23,163	9,726	181,672	49,457	109,334
Hall	187,743	53,786	19,154	5,305	9,271	5,614	2,599	45,745	12,719	27,941
Henry	195,370	59,894	14,625	5,908	9,471	5,624	2,429	44,609	12,226	14,736
Houston	135,715	36,573	14,809	3,607	6,864	4,242	2,015	34,974	9,794	18,099
Lowndes	106,814	26,513	10,373	2,615	5,557	3,233	1,413	25,680	7,028	23,217
Murray	40,621	11,142	4,082	1,099	2,048	1,258	586	10,298	2,873	8,274
Muscogee	190,414	50,163	22,498	4,948	9,671	5,973	2,879	49,512	13,897	32,062
Paulding	136,655	41,515	9,318	4,095	6,650	3,834	1,580	29,816	8,069	9,673
Richmond	199,768	51,212	24,440	5,051	10,234	6,350	3,088	52,838	14,862	43,225
Rockdale	84,569	24,027	8,464	2,370	4,208	2,608	1,226	21,428	5,993	11,010
Sumter	32,084	8,404	4,175	829	1,628	1,025	512	8,631	2,443	8,949
Walker	64,983	15,434	9,532	1,522	3,401	2,211	1,151	18,974	5,429	11,004
Washington	20,879	4,969	2,758	490	1,097	701	352	5,923	1,681	4,709
Wilkinson	10,076	2,661	1,528	262	508	338	182	2,945	849	2,074
Totals	6,309,409	1,667,296	586,420	164,456	322,748	193,279	86,495	1,553,921	428,933	965,824

GEORGIA

American Lung Association in Georgia

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

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Bibb	17	2	0	6.7	F
Chatham	0	0	0	0.0	A
Chattooga	10	1	0	3.8	F
Clarke	14	0	0	4.7	F
Clayton	DNC	DNC	DNC	DNC	DNC
Cobb	22	0	0	7.3	F
Columbia	6	0	0	2.0	C
Coweta	14	1	0	5.2	F
Dawson	8	0	0	2.7	D
Dekalb	34	4	1	14.0	F
Dougherty	DNC	DNC	DNC	DNC	DNC
Douglas	26	1	0	9.2	F
Fayette	INC	INC	INC	INC	INC
Floyd	DNC	DNC	DNC	DNC	DNC
Fulton	32	6	1	14.3	F
Glynn	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
17	2	0	6.7	F	13.5	PASS
3	0	1	1.7	C	11.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	INC	INC
4	0	0	1.3	C	13.5	PASS
5	1	0	2.2	D	13.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
13	1	0	4.8	F	13.3	PASS
5	1	0	2.2	D	12.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
14	0	0	4.7	F	13.3	PASS
12	2	0	5.0	F	INC	INC
4	0	0	1.3	C	10.4	PASS

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Gwinnett	29	1	0	10.2	F
Hall	DNC	DNC	DNC	DNC	DNC
Henry	27	7	0	12.5	F
Houston	DNC	DNC	DNC	DNC	DNC
Lowndes	DNC	DNC	DNC	DNC	DNC
Murray	22	0	0	7.3	F
Muscogee	7	0	0	2.3	D
Paulding	14	0	0	4.7	F
Richmond	9	0	0	3.0	D
Rockdale	31	5	0	12.8	F
Sumter	3	0	0	1.0	C
Walker	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC
Wilkinson	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	12.7	PASS
2	0	0	0.7	B	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	2	0	2.3	D	12.3	PASS
0	1	0	0.5	B	10.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	1	0	2.5	D	13.0	PASS
2	0	0	0.7	B	12.0	PASS
4	0	0	1.3	C	13.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	INC	INC
2	0	0	0.7	B	12.5	PASS
3	0	0	1.0	C	INC	INC

American Lung Association in Hawaii

630 Iwilei Road, Suite 575
 Honolulu, HI 96817
 (808) 537-5966
www.lungusa.org/hawaii

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Honolulu	907,574	201,499	135,661	22,640	65,846	30,693	15,732	261,198	58,800	85,138
Maui	145,157	33,217	17,940	3,732	10,587	4,904	2,409	41,056	9,259	14,724
Totals	1,052,731	234,716	153,601	26,372	76,433	35,597	18,141	302,254	68,059	99,862

HIGH OZONE DAYS 2007-2009

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

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	5.8	PASS
INC	INC	INC	INC	INC	4.7	PASS

American Lung Association in Idaho

1412 W. Idaho St. Suite 100
 Boise, ID 83702
 (208) 345-5864
www.lungusa.org/idaho

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Ada	384,656	99,742	39,263	4,590	23,696	11,973	5,506	97,343	21,303	44,204
Bannock	82,539	22,308	9,161	1,027	5,010	2,528	1,190	20,734	4,545	11,630
Benewah	9,258	2,238	1,652	103	579	335	191	2,999	684	1,483
Butte	2,764	754	490	35	166	97	56	873	200	395
Canyon	186,615	58,702	19,694	2,701	10,639	5,366	2,532	44,055	9,658	33,409
Franklin	12,676	4,370	1,550	201	689	363	185	3,085	687	1,337
Idaho	15,461	3,270	2,999	150	1,004	592	344	5,358	1,228	3,126
Kootenai	139,390	33,776	20,251	1,554	8,747	4,731	2,467	40,642	9,108	18,958
Lemhi	7,908	1,668	1,627	77	513	308	183	2,813	647	1,457
Shoshone	12,660	2,606	2,431	120	829	480	275	4,313	985	1,836
Totals	853,927	229,434	99,118	10,557	51,872	26,773	12,929	222,215	49,045	117,835

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Ada	13	0	0	4.3	F
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
Idaho	DNC	DNC	DNC	DNC	DNC
Kootenai	0	0	0	0.0	A
Lemhi	DNC	DNC	DNC	DNC	DNC
Shoshone	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	6.9	PASS
INC	INC	INC	INC	INC	INC	INC
1	0	0	0.3	B	9.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	INC	INC
7	0	0	2.3	D	INC	INC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	1	1	3.2	D	INC	INC
16	0	0	5.3	F	11.8	PASS

American Lung Association in Illinois

55 W. Wacker Drive, Suite 800
Chicago, IL 60601
(312) 781-1100
www.lungusa.org/illinois

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Adams	67,054	15,248	11,897	1,416	4,645	2,369	1,314	20,916	4,727	10,109
Champaign	195,671	38,198	19,723	3,548	14,248	6,220	2,652	48,877	10,952	34,982
Clark	16,657	3,770	2,989	350	1,155	594	331	5,258	1,188	2,193
Cook	5,287,037	1,283,145	621,214	119,167	360,936	169,759	80,867	1,400,158	314,356	828,626
Dupage	932,541	230,375	106,059	21,395	63,220	30,691	14,843	255,301	57,227	61,041
Effingham	34,424	8,519	5,369	791	2,325	1,172	628	10,193	2,298	3,485
Hamilton	8,096	1,758	1,600	163	567	296	171	2,664	603	1,121
Jersey	22,549	5,145	3,515	478	1,563	787	418	6,819	1,537	2,171
Kane	511,892	151,648	46,418	14,084	32,497	15,272	6,966	123,874	27,708	47,635
Lake	712,567	195,892	72,500	18,193	46,548	22,412	10,601	184,703	41,352	53,026
Lasalle	112,498	26,391	17,971	2,451	7,727	3,916	2,107	34,124	7,694	13,680
McHenry	320,961	86,135	34,622	7,999	21,147	10,245	4,921	84,982	19,041	21,119
McLean	167,699	37,988	17,097	3,528	11,718	5,304	2,360	42,481	9,517	22,440
Macon	108,204	24,567	17,619	2,282	7,505	3,802	2,051	33,159	7,478	15,822
Macoupin	47,774	10,628	8,149	987	3,331	1,707	936	15,003	3,386	5,589
Madison	268,457	61,590	38,074	5,720	18,600	9,147	4,681	77,902	17,531	34,532
Peoria	185,816	45,421	25,825	4,218	12,629	6,148	3,128	52,197	11,750	29,997
Randolph	32,686	6,798	5,165	631	2,326	1,151	604	9,913	2,234	3,847
Rock Island	146,826	32,736	23,498	3,040	10,244	5,138	2,740	44,566	10,049	15,862
St. Clair	263,617	66,766	33,215	6,201	17,715	8,609	4,279	72,394	16,265	44,084
Sangamon	195,716	46,126	27,378	4,284	13,442	6,706	3,455	57,333	12,894	25,308
Will	685,251	197,658	59,988	18,357	44,004	20,539	9,228	165,545	37,005	47,438
Winnebago	299,702	74,996	40,039	6,965	20,208	9,925	5,034	84,214	18,938	52,161
Totals	10,623,695	2,651,498	1,239,924	246,248	718,300	341,909	164,315	2,832,576	635,731	1,376,268

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	3	0	0	1.0	C
Champaign	1	0	0	0.3	B
Clark	2	0	0	0.7	B
Cook	19	3	0	7.8	F
Dupage	1	0	0	0.3	B
Effingham	4	0	0	1.3	C
Hamilton	4	0	0	1.3	C
Jersey	3	0	0	1.0	C
Kane	3	0	0	1.0	C
Lake	9	0	0	3.0	D
Lasalle	DNC	DNC	DNC	DNC	DNC
McHenry	2	0	0	0.7	B
McLean	3	0	0	1.0	C
Macon	5	0	0	1.7	C
Macoupin	1	0	0	0.3	B
Madison	24	1	0	8.5	F
Peoria	7	0	0	2.3	D
Randolph	7	0	0	2.3	D
Rock Island	1	0	0	0.3	B
St. Clair	4	1	0	1.8	C
Sangamon	2	0	0	0.7	B
Will	0	0	0	0.0	A
Winnebago	1	0	0	0.3	B

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	INC	INC
0	0	0	0.0	A	11.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
26	0	0	8.7	F	13.5	PASS
3	0	0	1.0	C	11.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	12.0	PASS
0	0	0	0.0	A	11.1	PASS
3	0	0	1.0	C	11.6	PASS
0	0	0	0.0	A	10.0	PASS
0	0	0	0.0	A	INC	INC
1	0	0	0.3	B	10.4	PASS
0	0	0	0.0	A	11.1	PASS
2	0	0	0.7	B	12.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
7	0	0	2.3	D	14.1	PASS
1	0	0	0.3	B	11.6	PASS
1	0	0	0.3	B	11.4	PASS
1	0	0	0.3	B	10.6	PASS
0	0	0	0.0	A	13.3	PASS
0	0	0	0.0	A	11.5	PASS
3	0	0	1.0	C	12.3	PASS
3	0	0	1.0	C	10.9	PASS

American Lung Association in Indiana

115 W. Washington Street, Suite 1180 South
 Indianapolis, IN 46204
 (317) 819-1181
www.lungusa.org/indiana

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Allen	353,888	94,334	41,674	9,214	23,611	11,246	5,486	93,796	23,943	51,005
Boone	56,287	15,534	6,549	1,517	3,716	1,813	900	15,259	3,955	4,374
Carroll	19,752	4,808	2,921	470	1,350	680	359	5,878	1,541	1,935
Clark	108,634	25,544	14,060	2,495	7,544	3,636	1,809	30,586	7,852	12,743
Delaware	115,192	23,184	17,118	2,264	8,293	3,939	1,982	33,230	8,421	22,254
Dubois	41,419	10,525	5,897	1,028	2,794	1,398	732	12,038	3,147	2,918
Elkhart	200,502	57,100	23,070	5,577	13,036	6,172	2,998	51,364	13,059	28,473
Floyd	74,426	17,748	9,784	1,734	5,148	2,518	1,271	21,335	5,524	9,041
Gibson	32,750	7,920	4,982	774	2,239	1,124	597	9,736	2,546	3,640
Greene	32,463	7,473	5,123	730	2,252	1,140	612	9,927	2,606	5,277
Hamilton	279,287	80,421	23,749	7,855	18,283	8,380	3,743	67,395	16,910	15,521
Hancock	68,334	18,032	8,847	1,761	4,568	2,256	1,151	19,207	4,999	4,394
Hendricks	140,606	36,778	14,872	3,592	9,489	4,457	2,101	36,651	9,304	6,897
Henry	47,827	10,639	7,623	1,039	3,347	1,677	894	14,547	3,796	6,776
Howard	82,895	20,023	13,148	1,956	5,657	2,865	1,544	24,980	6,553	12,369
Huntington	37,777	8,891	5,915	868	2,601	1,308	698	11,357	2,970	3,796
Jackson	42,362	10,461	6,020	1,022	2,882	1,415	730	12,094	3,128	5,554

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Johnson	141,501	36,141	17,019	3,530	9,582	4,570	2,234	38,153	9,745	13,521
Knox	37,907	8,025	6,143	784	2,686	1,328	703	11,476	2,971	6,338
Lake	494,211	130,241	64,495	12,721	33,010	16,173	8,221	137,413	35,584	79,923
Laporte	111,063	25,690	15,722	2,509	7,729	3,810	1,961	32,549	8,448	15,114
Madison	131,417	29,943	21,038	2,925	9,123	4,552	2,427	39,473	10,271	18,309
Marion	890,879	227,659	96,665	22,236	60,465	27,928	13,035	228,393	57,284	171,860
Monroe	130,738	21,695	13,685	2,119	9,941	4,252	1,792	33,230	7,886	25,663
Morgan	70,876	17,415	8,790	1,701	4,871	2,391	1,198	20,210	5,254	7,152
Perry	18,812	3,963	2,737	387	1,344	660	339	5,629	1,457	2,062
Porter	163,598	39,282	19,922	3,837	11,325	5,468	2,693	45,836	11,804	12,162
Posey	26,004	5,939	3,521	580	1,826	917	473	7,852	2,064	2,147
St. Joseph	267,613	66,371	35,286	6,483	18,227	8,757	4,381	73,801	18,885	41,682
Shelby	44,503	10,905	5,982	1,065	3,049	1,505	770	12,825	3,336	5,447
Spencer	20,039	4,739	2,997	463	1,383	701	372	6,079	1,600	1,983
Tippecanoe	167,964	35,084	16,294	3,427	12,129	5,202	2,188	40,641	9,674	31,945
Vanderburgh	175,434	38,778	25,834	3,788	12,336	6,014	3,092	51,293	13,209	25,579
Vigo	105,967	22,696	14,276	2,217	7,542	3,574	1,762	29,910	7,592	20,152
Warrick	58,521	14,653	7,502	1,431	3,992	1,978	1,006	16,826	4,393	4,623
Totals	4,791,448	1,188,634	589,260	116,099	327,373	155,804	76,254	1,300,969	331,710	682,629

INDIANA

American Lung Association in Indiana

115 W. Washington Street, Suite 1180 South
 Indianapolis, IN 46204
 (317) 819-1181
www.lungusa.org/indiana

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Allen	8	0	0	2.7	D
Boone	10	0	0	3.3	F
Carroll	4	0	0	1.3	C
Clark	29	0	0	9.7	F
Delaware	9	0	0	3.0	D
Dubois	DNC	DNC	DNC	DNC	DNC
Elkhart	8	0	0	2.7	D
Floyd	18	2	0	7.0	F
Gibson	DNC	DNC	DNC	DNC	DNC
Greene	16	0	0	5.3	F
Hamilton	19	0	0	6.3	F
Hancock	13	0	0	4.3	F
Hendricks	10	0	0	3.3	F
Henry	DNC	DNC	DNC	DNC	DNC
Howard	DNC	DNC	DNC	DNC	DNC
Huntington	5	0	0	1.7	C
Jackson	9	0	0	3.0	D

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
4	0	0	1.3	C	12.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
18	0	0	6.0	F	14.7	PASS
3	0	0	1.0	C	12.0	PASS
8	0	0	2.7	D	INC	INC
6	1	0	2.5	D	INC	INC
5	0	0	1.7	C	13.1	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	11.7	PASS
2	0	0	0.7	B	12.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Johnson	16	0	0	5.3	F
Knox	DNC	DNC	DNC	DNC	DNC
Lake	16	0	0	5.3	F
Laporte	11	0	0	3.7	F
Madison	6	0	0	2.0	C
Marion	24	0	0	8.0	F
Monroe	DNC	DNC	DNC	DNC	DNC
Morgan	18	0	0	6.0	F
Perry	13	0	0	4.3	F
Porter	11	0	0	3.7	F
Posey	14	0	0	4.7	F
St. Joseph	6	0	0	2.0	C
Shelby	23	0	0	7.7	F
Spencer	DNC	DNC	DNC	DNC	DNC
Tippecanoe	DNC	DNC	DNC	DNC	DNC
Vanderburgh	32	0	0	10.7	F
Vigo	9	0	0	3.0	D
Warrick	17	0	0	5.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	12.3	PASS
9	0	0	3.0	D	12.9	PASS
3	0	0	1.0	C	11.2	PASS
5	0	0	1.7	C	12.4	PASS
15	0	0	5.0	F	14.3	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	12.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	12.6	PASS
3	0	0	1.0	C	11.9	PASS
1	0	0	0.3	B	13.1	PASS
4	0	0	1.3	C	12.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Iowa

2530 73rd Street
 Des Moines, IA 50322
 (515) 309-9507
www.lungusa.org/iowa

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Black Hawk	129,276	27,996	18,483	1,334	6,873	4,362	2,192	36,797	7,280	21,437
Bremer	23,460	5,331	3,973	254	1,230	823	448	7,205	1,448	1,633
Clinton	48,934	11,584	8,110	552	2,530	1,714	937	15,040	3,022	5,727
Delaware	17,205	4,235	2,860	202	876	608	337	5,376	1,082	1,571
Harrison	15,328	3,610	2,685	172	793	549	308	4,874	984	1,592
Johnson	131,005	25,308	10,923	1,206	7,157	4,097	1,641	31,416	5,933	20,390
Lee	35,447	7,789	6,031	371	1,870	1,284	707	11,317	2,275	5,021
Linn	209,226	50,767	26,536	2,419	10,716	6,845	3,368	57,277	11,263	19,441
Montgomery	10,796	2,549	2,116	121	559	395	231	3,582	730	1,532
Muscatine	42,934	11,301	5,457	538	2,133	1,406	710	11,916	2,352	5,074
Palo Alto	9,279	2,059	1,979	98	493	342	203	3,114	638	973
Polk	429,439	109,037	48,212	5,194	21,647	13,590	6,427	111,776	21,796	45,826
Pottawattamie	90,224	21,453	12,723	1,022	4,646	3,071	1,583	26,252	5,208	11,485
Scott	166,650	41,299	21,122	1,967	8,461	5,495	2,734	46,238	9,104	20,482
Story	87,214	15,399	9,090	734	4,884	2,790	1,175	21,786	4,168	13,285
Van Buren	7,679	1,800	1,499	86	400	277	161	2,502	510	1,347
Warren	45,275	11,229	6,034	535	2,298	1,510	767	12,827	2,536	3,143
Woodbury	102,831	27,862	13,138	1,327	5,069	3,281	1,647	27,703	5,469	14,689
Wright	12,716	2,989	2,640	142	661	469	280	4,294	879	1,274
Totals	1,614,918	383,597	203,611	18,274	83,298	52,908	25,856	441,292	86,677	195,922

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Black Hawk	DNC	DNC	DNC	DNC	DNC
Bremer	2	0	0	0.7	B
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	5	0	0	1.7	C
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	1	0	0	0.3	B
Story	3	0	0	1.0	C
Van Buren	2	0	0	0.7	B
Warren	1	0	0	0.3	B
Woodbury	DNC	DNC	DNC	DNC	DNC
Wright	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
6	0	0	2.0	C	11.1	PASS
INC	INC	INC	INC	INC	INC	INC
12	0	0	4.0	F	12.7	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
8	0	0	2.7	D	11.1	PASS
0	0	0	0.0	A	11.4	PASS
7	0	0	2.3	D	10.3	PASS
1	0	0	0.3	B	9.3	PASS
20	1	0	7.2	F	13.1	PASS
2	0	0	0.7	B	9.0	PASS
3	0	0	1.0	C	10.0	PASS
3	0	0	1.0	C	10.6	PASS
16	0	0	5.3	F	13.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	INC	INC
4	0	0	1.3	C	10.0	PASS

American Lung Association in Kansas

2400 Troost Avenue, #4300
 Kansas City, MO 64108
 (816) 842-5242
www.lungusa.org/kansas

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Johnson	542,737	137,982	58,284	11,409	34,716	17,336	8,171	142,523	32,752	36,346
Leavenworth	75,227	18,784	7,905	1,553	4,837	2,423	1,137	19,886	4,568	6,521
Linn	9,335	2,179	1,621	180	580	338	190	3,007	707	1,180
Sedgwick	490,864	132,853	56,259	10,985	30,628	15,390	7,427	127,736	29,428	65,212
Shawnee	176,255	43,224	24,841	3,574	11,165	5,923	3,056	50,643	11,770	28,476
Sumner	23,488	6,012	3,529	497	1,438	807	434	7,039	1,646	2,631
Trego	2,920	622	668	51	181	114	70	1,057	251	331
Wyandotte	155,085	43,360	16,463	3,585	9,626	4,737	2,229	38,884	8,928	32,788
Totals	1,475,911	385,016	169,570	31,836	93,170	47,068	22,714	390,775	90,051	173,485

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Johnson	3	0	0	1.0	C
Leavenworth	6	0	0	2.0	C
Linn	0	0	0	0.0	A
Sedgwick	2	0	0	0.7	B
Shawnee	0	0	0	0.0	A
Sumner	4	0	0	1.3	C
Trego	0	0	0	0.0	A
Wyandotte	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	9.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.7	PASS
1	0	0	0.3	B	9.6	PASS
1	0	0	0.3	B	10.0	PASS
0	0	0	0.0	A	9.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	10.7	PASS

American Lung Association in Kentucky

4100 Churchman Avenue
 Louisville, KY 40215
 (502) 363-2652
www.lungusa.org/kentucky

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Bell	28,972	6,575	4,319	622	2,271	997	519	8,555	2,668	10,118
Boone	118,576	32,414	11,477	3,068	8,771	3,647	1,673	29,643	9,336	9,289
Boyd	48,527	10,537	7,268	997	3,852	1,704	888	14,636	4,572	9,681
Bullitt	75,653	17,731	7,900	1,678	5,895	2,503	1,173	20,551	6,487	8,017
Campbell	88,423	20,026	11,298	1,896	6,947	2,966	1,458	24,821	7,770	9,494
Carter	26,771	6,503	2,936	616	2,062	876	416	7,233	2,277	6,537
Christian	80,938	23,810	8,303	2,254	5,812	2,326	1,056	18,766	5,850	14,157
Daviess	95,394	23,679	14,025	2,241	7,269	3,223	1,692	27,771	8,666	14,147
Edmonson	11,926	2,526	1,769	239	953	424	221	3,638	1,138	2,453
Fayette	296,545	63,248	31,927	5,987	23,746	9,616	4,347	77,537	24,288	49,376
Franklin	48,968	10,646	6,764	1,008	3,889	1,702	864	14,449	4,525	6,631
Greenup	38,020	8,204	7,299	777	3,012	1,389	792	12,423	3,848	5,992
Hancock	8,635	2,298	1,087	218	643	284	144	2,417	759	1,125
Hardin	99,770	25,996	12,070	2,461	7,494	3,221	1,586	26,982	8,460	14,037
Henderson	45,496	10,680	6,589	1,011	3,530	1,568	817	13,475	4,214	7,436
Jefferson	721,594	169,839	96,692	16,076	56,004	24,217	12,181	204,688	64,009	111,718
Jessamine	47,589	11,965	5,125	1,133	3,624	1,515	711	12,426	3,903	6,455

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Kenton	158,729	39,121	17,249	3,703	12,167	5,123	2,416	42,123	13,245	20,669
Larue	13,663	3,146	2,245	298	1,065	482	262	4,216	1,313	2,260
Livingston	9,598	1,885	1,660	178	781	358	196	3,150	983	1,392
McCracken	65,880	14,855	10,980	1,406	5,164	2,347	1,281	20,592	6,415	10,022
Madison	83,258	17,741	9,007	1,679	6,668	2,699	1,221	21,769	6,817	14,903
Ohio	23,534	5,691	3,614	539	1,808	806	429	6,990	2,179	4,029
Oldham	58,095	15,346	5,363	1,453	4,354	1,866	866	15,271	4,843	3,164
Perry	29,136	6,914	3,627	654	2,257	975	482	8,185	2,569	7,965
Pike	65,446	14,377	8,751	1,361	5,185	2,269	1,144	19,218	6,028	16,618
Pulaski	60,853	13,744	10,274	1,301	4,767	2,148	1,172	18,827	5,853	11,635
Simpson	17,019	4,050	2,404	383	1,315	577	297	4,927	1,540	2,529
Trigg	13,290	2,792	2,478	264	1,061	494	280	4,415	1,373	2,011
Warren	108,669	25,046	12,138	2,371	8,506	3,485	1,612	28,380	8,882	17,556
Totals	2,588,967	611,385	326,638	57,869	200,872	85,807	42,196	718,074	224,812	401,416

KENTUCKY

American Lung Association in Kentucky

4100 Churchman Avenue
 Louisville, KY 40215
 (502) 363-2652
www.lungusa.org/kentucky

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Bell	19	0	0	6.3	F
Boone	6	0	0	2.0	C
Boyd	6	0	0	2.0	C
Bullitt	10	0	0	3.3	F
Campbell	21	0	0	7.0	F
Carter	2	0	0	0.7	B
Christian	24	0	0	8.0	F
Daviess	19	0	0	6.3	F
Edmonson	16	0	0	5.3	F
Fayette	7	0	0	2.3	D
Franklin	DNC	DNC	DNC	DNC	DNC
Greenup	12	0	0	4.0	F
Hancock	15	0	0	5.0	F
Hardin	13	0	0	4.3	F
Henderson	15	0	0	5.0	F
Jefferson	34	1	0	11.8	F
Jessamine	17	0	0	5.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	1	0	0.8	B	12.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	12.4	PASS
4	0	0	1.3	C	13.3	PASS
0	0	0	0.0	A	INC	INC
1	0	0	0.3	B	10.6	PASS
4	0	0	1.3	C	INC	INC
2	0	0	0.7	B	12.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	12.5	PASS
3	0	0	1.0	C	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	12.5	PASS
2	0	0	0.7	B	12.6	PASS
9	0	0	3.0	D	13.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Kenton	15	0	0	5.0	F
Larue	INC	INC	INC	INC	INC
Livingston	7	0	0	2.3	D
McCracken	7	0	0	2.3	D
Madison	DNC	DNC	DNC	DNC	DNC
Ohio	DNC	DNC	DNC	DNC	DNC
Oldham	22	0	0	7.3	F
Perry	4	0	0	1.3	C
Pike	9	0	0	3.0	D
Pulaski	4	0	0	1.3	C
Simpson	16	0	0	5.3	F
Trigg	16	0	0	5.3	F
Warren	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	12.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	12.4	PASS
2	0	0	0.7	B	11.2	PASS
2	0	0	0.7	B	12.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
4	0	0	1.3	C	11.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	INC	INC

American Lung Association in Louisiana

2325 Severn Avenue, Suite 8
 Metairie, LA 70001-6918
 (504) 828-5864
www.lungusa.org/louisiana

AT-RISK GROUPS

Parish	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Ascension Parish	104,822	29,957	8,934	2,814	4,739	3,115	1,376	24,924	7,474	11,624
Bossier Parish	111,492	28,647	13,343	2,691	5,232	3,533	1,706	29,308	8,898	15,618
Caddo Parish	253,623	63,531	34,410	5,968	11,962	8,316	4,210	70,449	21,514	41,924
Calcasieu Parish	187,554	48,353	23,737	4,542	8,761	6,071	3,020	51,055	15,551	30,062
East Baton Rouge Parish	434,633	104,315	47,200	9,799	20,919	13,790	6,363	112,195	33,867	73,717
Iberville Parish	32,505	7,500	3,982	705	1,577	1,076	521	8,943	2,715	5,875
Jefferson Parish	443,342	102,048	60,959	9,586	21,423	15,138	7,702	128,647	39,286	60,410
Lafayette Parish	210,954	52,785	22,292	4,959	10,008	6,634	3,062	54,006	16,298	28,188
Lafourche Parish	93,682	22,920	11,527	2,153	4,459	3,059	1,496	25,533	7,760	14,211
Livingston Parish	123,326	33,952	12,239	3,189	5,654	3,750	1,720	30,457	9,182	14,735
Orleans Parish	354,850	76,343	41,687	7,172	17,555	11,977	5,714	98,965	29,973	82,240
Ouachita Parish	151,502	40,117	18,633	3,769	7,033	4,763	2,327	39,704	12,074	30,520
Pointe Coupee Parish	22,447	5,428	3,473	510	1,063	780	419	6,795	2,089	4,074
Rapides Parish	133,937	34,893	18,460	3,278	6,222	4,381	2,251	37,372	11,432	20,090
St. Bernard Parish	40,655	10,889	3,754	1,023	1,875	1,278	586	10,397	3,130	8,619
St. Charles Parish	51,611	13,858	5,100	1,302	2,375	1,637	768	13,447	4,060	6,129
St. James Parish	21,054	5,616	2,647	528	969	684	344	5,789	1,765	3,142
St. John The Baptist Parish	47,086	13,034	4,460	1,224	2,148	1,454	669	11,841	3,568	7,405
St. Tammany Parish	231,495	59,772	28,350	5,615	10,765	7,651	3,828	64,605	19,671	23,675
Tangipahoa Parish	118,688	30,378	13,377	2,854	5,580	3,744	1,773	30,803	9,327	23,559
Terrebonne Parish	109,291	29,235	12,535	2,746	5,049	3,439	1,657	28,525	8,653	16,951
West Baton Rouge Parish	22,638	5,682	2,443	534	1,069	729	345	6,005	1,816	3,170
Totals	3,301,187	819,253	393,542	76,960	156,435	106,999	51,857	889,765	270,104	525,938

HIGH OZONE DAYS 2007-2009

Parish	Orange	Red	Purple	Wgt. Avg	Grade
Ascension Parish	13	2	0	5.3	F
Bossier Parish	7	1	0	2.8	D
Caddo Parish	5	0	0	1.7	C
Calcasieu Parish	14	1	0	5.2	F
East Baton Rouge Parish	33	1	0	11.5	F
Iberville Parish	30	2	0	11.0	F
Jefferson Parish	14	1	0	5.2	F
Lafayette Parish	9	0	0	3.0	D
Lafourche Parish	5	0	0	1.7	C
Livingston Parish	15	0	0	5.0	F
Orleans Parish	INC	INC	INC	INC	INC
Ouachita Parish	0	0	0	0.0	A
Pointe Coupee Parish	17	0	0	5.7	F
Rapides Parish	DNC	DNC	DNC	DNC	DNC
St. Bernard Parish	6	0	0	2.0	C
St. Charles Parish	5	0	0	1.7	C
St. James Parish	6	0	0	2.0	C
St. John The Baptist Parish	16	0	0	5.3	F
St. Tammany Parish	INC	INC	INC	INC	INC
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 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	11.2	PASS
0	0	0	0.0	A	9.3	PASS
0	0	0	0.0	A	11.0	PASS
0	0	0	0.0	A	11.1	PASS
2	0	0	0.7	B	9.4	PASS
0	0	0	0.0	A	9.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	9.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.1	PASS
0	0	0	0.0	A	10.9	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
0	0	0	0.0	A	9.9	PASS
0	0	0	0.0	A	8.8	PASS
1	1	0	0.8	B	11.5	PASS

American Lung Association in Maine

122 State Street
 Augusta, ME 04330
 (207) 624-0308
www.lungusa.org/maine

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Androscoggin	106,539	23,426	15,781	2,192	9,036	3,702	1,919	31,711	6,701	15,427
Aroostook	71,488	14,397	13,161	1,347	6,092	2,684	1,510	23,889	5,138	11,441
Cumberland	278,559	57,847	39,768	5,412	23,997	9,833	5,028	83,762	17,728	25,188
Hancock	53,447	9,921	9,238	928	4,649	2,042	1,121	17,986	3,875	6,162
Kennebec	121,090	25,103	18,749	2,349	10,346	4,388	2,326	38,009	8,120	15,201
Knox	40,801	7,749	7,695	725	3,522	1,559	881	13,906	2,994	5,352
Oxford	56,244	11,913	9,130	1,115	4,740	2,074	1,128	18,192	3,918	7,679
Penobscot	149,419	29,745	21,580	2,783	13,043	5,292	2,694	44,971	9,484	21,854
Piscataquis	16,795	3,318	3,099	310	1,425	651	370	5,830	1,267	2,657
Sagadahoc	36,391	7,611	5,567	712	3,095	1,325	703	11,486	2,462	3,439
Washington	32,107	6,455	6,015	604	2,733	1,211	686	10,816	2,329	6,414
York	201,876	42,452	30,512	3,972	17,177	7,296	3,849	63,083	13,491	16,711
Totals	1,164,756	239,937	180,295	22,448	99,854	42,057	22,215	363,641	77,506	137,525

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Androscoggin	7	0	0	2.3	D
Aroostook	3	0	0	1.0	C
Cumberland	7	1	0	2.8	D
Hancock	15	1	0	5.5	F
Kennebec	6	0	0	2.0	C
Knox	7	1	0	2.8	D
Oxford	2	0	0	0.7	B
Penobscot	3	0	0	1.0	C
Piscataquis	DNC	DNC	DNC	DNC	DNC
Sagadahoc	4	1	0	1.8	C
Washington	5	0	0	1.7	C
York	13	1	0	4.8	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	8.3	PASS
1	0	0	0.3	B	7.3	PASS
0	0	0	0.0	A	9.1	PASS
0	0	0	0.0	A	4.8	PASS
0	0	0	0.0	A	8.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	8.6	PASS
0	0	0	0.0	A	7.9	PASS
0	0	0	0.0	A	5.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Maryland

211 E. Lombard St., #260
 Baltimore, MD 21202
 (443) 451-4950
www.lungusa.org/maryland

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Anne Arundel	521,209	121,140	60,879	14,459	36,414	17,378	8,383	144,332	36,837	34,650
Baltimore	789,814	173,026	113,391	20,652	55,907	27,230	13,920	231,770	59,819	63,931
Calvert	89,212	22,948	9,284	2,739	5,966	2,930	1,405	24,315	6,208	4,749
Carroll	170,089	41,821	21,874	4,992	11,494	5,766	2,924	48,994	12,646	9,735
Cecil	100,796	24,927	11,978	2,975	6,881	3,323	1,626	27,777	7,112	9,903
Charles	142,226	38,002	13,247	4,536	9,550	4,438	2,026	36,021	9,091	8,966
Frederick	227,980	58,175	24,364	6,944	15,423	7,390	3,521	61,091	15,561	12,674
Garrett	29,555	6,361	5,141	759	2,064	1,069	589	9,418	2,469	3,643
Harford	242,514	59,776	29,902	7,135	16,488	8,095	4,027	68,170	17,518	14,948
Kent	20,247	3,646	4,089	435	1,475	772	441	6,911	1,824	2,708
Montgomery	971,600	237,621	119,511	28,362	66,484	32,270	15,952	270,900	69,497	64,607
Prince George's	834,560	206,580	79,223	24,657	57,809	26,489	11,979	214,060	53,894	63,748
Washington	145,910	33,346	20,874	3,980	10,229	4,947	2,528	42,087	10,858	17,103
Worcester	49,122	9,236	11,303	1,102	3,474	1,937	1,174	17,846	4,770	5,828
Baltimore City	637,418	142,991	75,292	17,067	45,686	20,844	9,842	171,242	43,434	127,205
Totals	4,972,252	1,179,596	600,352	140,794	345,345	164,878	80,337	1,374,934	351,538	444,398

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Anne Arundel	31	1	1	11.5	F
Baltimore	24	3	0	9.5	F
Calvert	16	0	0	5.3	F
Carroll	28	1	0	9.8	F
Cecil	34	1	1	12.5	F
Charles	24	1	0	8.5	F
Frederick	21	0	0	7.0	F
Garrett	4	0	0	1.3	C
Harford	49	6	0	19.3	F
Kent	24	1	0	8.5	F
Montgomery	21	1	0	7.5	F
Prince George's	34	3	0	12.8	F
Washington	12	0	0	4.0	F
Worcester	5	1	0	2.2	D
Baltimore City	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
4	0	0	1.3	C	12.4	PASS
14	0	0	4.7	F	12.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	11.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	11.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	10.7	PASS
4	0	0	1.3	C	12.4	PASS
2	0	0	0.7	B	11.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
13	0	0	4.3	F	12.9	PASS

American Lung Association in Massachusetts

460 Totten Pond Road, Suite 400
 Waltham, MA 02451-1991
 (781) 314-9006
www.lungusa.org/massachusetts

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Barnstable	221,151	38,601	54,200	3,311	18,648	9,013	5,575	83,915	18,511	17,523
Berkshire	129,288	25,431	23,942	2,181	10,898	4,858	2,726	43,175	9,383	15,715
Bristol	547,433	122,508	76,257	10,507	45,682	18,808	9,569	159,810	34,195	59,101
Dukes	15,974	3,037	2,651	260	1,357	609	332	5,347	1,158	1,302
Essex	742,582	172,076	103,403	14,758	61,003	25,633	13,194	219,095	46,990	78,064
Hampden	471,081	111,135	66,005	9,531	38,668	15,951	8,167	135,901	29,105	78,142
Hampshire	156,044	26,761	19,958	2,295	14,081	5,541	2,656	45,856	9,718	15,471
Middlesex	1,505,006	320,068	193,906	27,450	128,458	51,377	25,194	429,429	91,337	107,851
Norfolk	666,303	150,086	94,682	12,872	55,257	23,113	11,908	197,575	42,372	41,225
Plymouth	498,344	120,510	66,869	10,335	40,352	17,052	8,747	145,601	31,222	37,172
Suffolk	753,580	137,120	79,915	11,760	68,931	24,454	10,556	193,107	40,152	123,939
Worcester	803,701	189,444	101,026	16,247	66,230	27,057	13,425	227,513	48,510	73,188
Totals	6,510,487	1,416,777	882,814	121,507	549,565	223,466	112,049	1,886,324	402,654	648,693

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Barnstable	16	1	0	5.8	F
Berkshire	14	1	0	5.2	F
Bristol	8	0	0	2.7	D
Dukes	9	2	0	4.0	F
Essex	23	2	0	8.7	F
Hampden	24	4	0	10.0	F
Hampshire	27	2	0	10.0	F
Middlesex	17	0	0	5.7	F
Norfolk	21	0	0	7.0	F
Plymouth	DNC	DNC	DNC	DNC	DNC
Suffolk	9	0	0	3.0	D
Worcester	30	2	0	11.0	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	9.6	PASS
0	0	0	0.0	A	8.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.0	PASS
2	0	0	0.7	B	10.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	8.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	9.2	PASS
4	0	0	1.3	C	11.1	PASS
1	0	0	0.3	B	10.3	PASS

American Lung Association in Michigan

25900 Greenfield Road, Suite 601
 Oak Park, MI 48237
 (248) 784-2000
www.lungusa.org/michigan

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Allegan	113,449	28,965	14,401	2,354	8,436	3,776	1,908	32,021	8,110	12,850
Bay	107,434	23,593	17,390	1,917	8,288	3,836	2,067	33,458	8,558	13,465
Benzie	17,227	3,649	3,458	297	1,325	648	378	5,862	1,520	2,256
Berrien	160,472	38,392	25,377	3,120	12,067	5,586	3,012	48,738	12,467	27,259
Cass	49,925	11,218	7,116	912	3,851	1,773	926	15,270	3,896	7,837
Clinton	69,893	17,379	9,112	1,412	5,239	2,364	1,205	20,127	5,108	5,253
Emmet	33,649	7,268	5,847	591	2,598	1,229	681	10,861	2,793	3,803
Genesee	424,043	105,917	56,823	8,606	31,692	14,136	7,201	120,211	30,434	80,851
Huron	32,236	6,653	6,892	541	2,487	1,242	741	11,365	2,961	4,905
Ingham	277,633	58,542	30,034	4,757	22,063	9,013	4,069	72,627	17,897	49,909
Kalamazoo	248,407	54,936	30,047	4,464	19,390	8,173	3,884	67,329	16,768	46,977
Kent	608,315	157,173	66,257	12,771	45,321	19,167	9,023	157,389	39,211	86,639
Leelanau	21,899	4,239	4,675	344	1,719	871	520	7,977	2,083	2,096
Lenawee	99,837	23,142	14,432	1,880	7,621	3,441	1,787	29,510	7,497	12,606
Macomb	831,427	191,006	117,603	15,520	63,710	28,400	14,553	242,054	61,291	89,772
Manistee	24,439	4,730	4,926	384	1,926	941	546	8,495	2,202	3,214
Mason	28,637	6,053	5,516	492	2,210	1,075	618	9,666	2,503	5,024

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Missaukee	14,838	3,509	2,411	285	1,118	527	289	4,635	1,191	2,202
Monroe	152,721	36,106	19,733	2,934	11,648	5,219	2,635	44,248	11,209	16,239
Muskegon	173,951	42,480	23,181	3,452	13,105	5,815	2,943	49,304	12,465	31,179
Oakland	1,205,508	281,639	155,733	22,885	92,295	41,218	20,745	348,930	88,316	116,380
Ottawa	261,957	67,413	30,329	5,478	19,497	8,340	4,009	69,102	17,281	26,051
St. Clair	167,562	39,837	23,360	3,237	12,711	5,767	2,984	49,417	12,566	22,280
Schoolcraft	8,127	1,611	1,701	131	635	316	187	2,883	751	1,300
Washtenaw	347,563	71,777	33,935	5,832	27,878	11,309	4,967	90,158	22,142	46,533
Wayne	1,925,848	487,257	234,767	39,593	143,904	62,834	30,943	526,404	132,430	458,811
Totals	7,406,997	1,774,484	945,056	144,188	562,734	247,016	122,821	2,078,041	523,651	1,175,691

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Missaukee	6	0	0	2.0	C
Monroe	DNC	DNC	DNC	DNC	DNC
Muskegon	18	1	0	6.5	F
Oakland	16	0	0	5.3	F
Ottawa	13	0	0	4.3	F
St. Clair	13	1	0	4.8	F
Schoolcraft	15	0	0	5.0	F
Washtenaw	4	0	0	1.3	C
Wayne	20	1	0	7.2	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	6.8	PASS
2	0	0	0.7	B	11.6	PASS
1	0	0	0.3	B	9.6	PASS
4	0	0	1.3	C	11.4	PASS
1	0	0	0.3	B	10.6	PASS
4	0	0	1.3	C	11.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	11.3	PASS
13	0	0	4.3	F	14.1	PASS

American Lung Association in Minnesota

490 Concordia Avenue
 St. Paul, MN 55103-2441
 (651) 227-8014
www.lungusa.org/minnesota

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Anoka	331,582	84,469	31,043	5,889	16,301	10,582	4,839	85,991	14,730	23,255
Becker	32,076	7,701	5,490	537	1,599	1,142	637	10,129	1,813	4,145
Carlton	34,327	8,122	5,247	566	1,724	1,192	635	10,343	1,831	3,428
Cass	28,534	6,239	5,695	435	1,458	1,080	633	9,805	1,774	3,961
Crow Wing	62,723	14,215	11,713	991	3,191	2,259	1,282	20,171	3,620	8,828
Dakota	396,500	102,580	35,532	7,152	19,389	12,552	5,683	101,590	17,365	24,099
Goodhue	45,836	10,937	7,177	763	2,291	1,609	868	14,050	2,496	3,366
Hennepin	1,156,212	261,191	129,035	18,210	59,227	38,071	17,858	312,221	53,721	134,301
Lake	10,610	1,958	2,240	137	566	418	246	3,807	689	1,186
Lyon	25,074	5,985	3,645	417	1,263	837	431	7,140	1,253	2,780
Mille Lacs	26,383	6,509	4,383	454	1,309	908	497	7,972	1,420	3,450
Olmsted	143,962	35,910	17,810	2,504	7,141	4,690	2,306	39,244	6,823	10,813
Ramsey	506,278	116,740	67,522	8,139	25,790	16,821	8,349	141,224	24,592	80,441
St. Louis	197,767	38,546	31,871	2,687	10,489	7,185	3,806	62,164	10,992	30,773
Scott	131,939	38,409	9,671	2,678	6,197	3,848	1,635	30,319	5,105	6,323
Stearns	148,955	33,880	19,123	2,362	7,628	4,911	2,392	40,882	7,087	17,767
Washington	231,958	61,313	21,835	4,275	11,228	7,426	3,452	60,807	10,461	12,929
Wright	121,907	35,909	11,143	2,504	5,694	3,615	1,639	29,235	4,993	7,487
Totals	3,632,623	870,613	420,175	60,699	182,484	119,146	57,188	987,094	170,766	379,332

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Anoka	2	0	0	0.7	B
Becker	0	0	0	0.0	A
Carlton	0	0	0	0.0	A
Cass	DNC	DNC	DNC	DNC	DNC
Crow Wing	1	0	0	0.3	B
Dakota	DNC	DNC	DNC	DNC	DNC
Goodhue	2	0	0	0.7	B
Hennepin	DNC	DNC	DNC	DNC	DNC
Lake	1	0	0	0.3	B
Lyon	0	0	0	0.0	A
Mille Lacs	3	0	0	1.0	C
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	1	0	0	0.3	B
Washington	4	0	0	1.3	C
Wright	4	0	0	1.3	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	9.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	10.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	INC	INC
5	0	0	1.7	C	10.0	PASS
7	0	0	2.3	D	11.1	PASS
1	0	0	0.3	B	7.5	PASS
4	0	0	1.3	C	9.5	PASS
4	0	0	1.3	C	8.6	PASS
2	0	0	0.7	B	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSISSIPPI

American Lung Association in Mississippi

P.O. Box 2178
 Ridgeland, MS 39158
 (601) 206-5810
www.lungusa.org/mississippi

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Adams	30,722	7,475	5,278	776	1,768	1,083	604	9,594	3,052	8,564
Bolivar	36,766	9,621	4,213	999	2,043	1,154	551	9,525	2,959	12,223
Desoto	158,719	45,326	15,946	4,707	8,524	4,786	2,218	39,041	12,134	14,187
Forrest	81,078	19,380	9,575	2,013	4,632	2,516	1,164	20,442	6,214	17,466
Grenada	23,046	5,910	3,474	614	1,298	765	404	6,610	2,076	5,289
Hancock	40,962	9,569	6,187	994	2,380	1,434	761	12,425	3,948	7,580
Harrison	181,191	45,840	21,936	4,760	10,201	5,832	2,841	48,592	15,169	31,675
Hinds	247,631	67,251	27,413	6,984	13,574	7,659	3,633	63,075	19,602	55,442
Jackson	132,922	34,338	16,580	3,566	7,443	4,334	2,159	36,493	11,482	18,574
Jones	67,776	17,487	9,819	1,816	3,804	2,215	1,150	18,967	5,931	16,259
Lauderdale	79,099	20,450	11,169	2,124	4,433	2,567	1,318	21,873	6,828	17,723
Lee	81,913	22,114	10,487	2,296	4,515	2,611	1,309	22,026	6,895	14,163
Lowndes	59,658	15,716	7,762	1,632	3,318	1,919	964	16,201	5,070	14,824
Webster	9,852	2,416	1,683	251	565	340	188	2,997	946	2,225
Totals	1,231,335	322,893	151,522	33,532	68,497	39,215	19,264	327,861	102,304	236,194

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	2	0	0	0.7	B
Bolivar	6	0	0	2.0	C
Desoto	19	1	0	6.8	F
Forrest	DNC	DNC	DNC	DNC	DNC
Grenada	DNC	DNC	DNC	DNC	DNC
Hancock	INC	INC	INC	INC	INC
Harrison	19	0	0	6.3	F
Hinds	1	0	0	0.3	B
Jackson	12	0	0	4.0	F
Jones	DNC	DNC	DNC	DNC	DNC
Lauderdale	0	0	0	0.0	A
Lee	3	0	0	1.0	C
Lowndes	DNC	DNC	DNC	DNC	DNC
Webster	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	10.4	PASS
0	0	0	0.0	A	11.2	PASS
1	0	0	0.3	B	11.3	PASS
0	0	0	0.0	A	12.8	PASS
0	0	0	0.0	A	10.5	PASS
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	10.0	PASS
0	0	0	0.0	A	11.8	PASS
0	0	0	0.0	A	10.2	PASS
0	0	0	0.0	A	13.0	PASS
1	0	0	0.3	B	12.0	PASS
0	0	0	0.0	A	11.7	PASS
2	0	0	0.7	B	11.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSOURI

American Lung Association in Missouri

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

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Andrew	17,052	4,109	2,385	417	1,224	586	304	5,024	1,081	1,478
Boone	156,377	33,130	14,607	3,364	11,914	4,920	2,091	38,654	7,744	26,229
Buchanan	89,856	21,080	12,799	2,140	6,533	3,006	1,532	25,532	5,418	12,960
Callaway	43,727	9,916	5,039	1,007	3,227	1,461	699	12,091	2,538	4,404
Cass	100,184	26,556	11,957	2,696	7,003	3,233	1,596	27,123	5,747	8,911
Cedar	13,544	3,194	2,943	324	962	497	300	4,568	1,015	2,764
Clay	228,358	57,550	25,431	5,844	16,324	7,303	3,465	60,186	12,572	17,790
Clinton	21,002	5,131	3,133	521	1,497	722	383	6,257	1,352	2,029
Greene	269,630	57,470	37,960	5,835	20,216	9,103	4,537	76,514	16,087	47,009
Jackson	705,708	173,837	87,143	17,651	50,665	23,081	11,329	193,005	40,689	106,038
Jasper	118,179	30,547	15,786	3,102	8,341	3,787	1,900	31,932	6,736	22,818
Jefferson	219,046	54,088	23,982	5,492	15,733	7,172	3,426	59,344	12,485	22,772
Lincoln	53,311	14,559	5,559	1,478	3,703	1,665	786	13,700	2,866	5,795
Monroe	8,993	2,095	1,623	213	646	324	183	2,887	634	1,258
Perry	18,847	4,656	3,015	473	1,338	642	346	5,599	1,210	2,117
St. Charles	355,367	90,399	39,024	9,179	25,286	11,462	5,470	94,767	19,897	18,038
Ste. Genevieve	17,542	4,120	2,654	418	1,264	619	331	5,386	1,170	2,014
St. Louis	992,408	233,595	145,381	23,719	71,730	34,210	17,899	294,448	63,338	93,601
St. Louis City	356,587	79,527	39,516	8,075	26,557	11,630	5,387	94,801	19,605	92,243
Totals	3,785,718	905,559	479,937	91,950	274,164	125,423	61,964	1,051,818	222,184	490,268

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Andrew	INC	INC	INC	INC	INC
Boone	INC	INC	INC	INC	INC
Buchanan	DNC	DNC	DNC	DNC	DNC
Callaway	INC	INC	INC	INC	INC
Cass	4	0	0	1.3	C
Cedar	4	0	0	1.3	C
Clay	21	2	0	8.0	F
Clinton	15	0	0	5.0	F
Greene	5	0	0	1.7	C
Jackson	DNC	DNC	DNC	DNC	DNC
Jasper	INC	INC	INC	INC	INC
Jefferson	23	0	0	7.7	F
Lincoln	13	2	0	5.3	F
Monroe	4	0	0	1.3	C
Perry	22	0	0	7.3	F
St. Charles	31	1	0	10.8	F
Ste. Genevieve	17	1	0	6.2	F
St. Louis	26	4	0	10.7	F
St. Louis City	22	2	0	8.3	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	11.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	10.1	PASS
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	10.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	10.7	PASS
1	0	0	0.3	B	11.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	INC	INC
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
0	0	0	0.0	A	INC	INC
3	0	0	1.0	C	INC	INC
9	0	0	3.0	D	12.8	PASS

American Lung Association in Montana

825 Helena Avenue
 Helena, MT 59601-3459
 (406) 442-6556
www.lungusa.org/montana

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Cascade	82,178	18,817	13,036	1,202	5,128	2,849	1,518	24,703	4,370	12,020
Flathead	89,624	21,172	12,722	1,353	5,557	3,113	1,624	26,777	4,713	11,906
Gallatin	90,343	18,314	8,188	1,170	5,788	2,877	1,213	22,538	3,762	11,616
Glacier	13,550	4,314	1,378	276	747	399	191	3,303	569	4,057
Lewis And Clark	61,942	13,936	8,177	890	3,898	2,168	1,102	18,449	3,227	6,084
Lincoln	18,717	3,722	3,689	238	1,223	733	427	6,641	1,201	3,755
Missoula	108,623	21,216	12,240	1,356	7,042	3,634	1,663	29,462	5,020	17,714
Ravalli	40,431	8,858	7,485	566	2,569	1,506	859	13,497	2,428	6,229
Richland	9,313	2,240	1,444	143	575	329	178	2,881	512	948
Sanders	11,096	2,240	2,365	143	722	438	262	4,017	731	2,375
Silver Bow	32,949	7,228	5,627	462	2,084	1,178	644	10,338	1,841	4,641
Yellowstone	144,797	34,442	20,325	2,201	8,929	4,888	2,505	41,656	7,299	16,433
Totals	703,563	156,499	96,676	9,999	44,262	24,112	12,186	204,262	35,672	97,778

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Cascade	DNC	DNC	DNC	DNC	DNC
Flathead	0	0	0	0.0	A
Gallatin	DNC	DNC	DNC	DNC	DNC
Glacier	INC	INC	INC	INC	INC
Lewis And Clark	DNC	DNC	DNC	DNC	DNC
Lincoln	DNC	DNC	DNC	DNC	DNC
Missoula	DNC	DNC	DNC	DNC	DNC
Ravalli	DNC	DNC	DNC	DNC	DNC
Richland	INC	INC	INC	INC	INC
Sanders	DNC	DNC	DNC	DNC	DNC
Silver Bow	DNC	DNC	DNC	DNC	DNC
Yellowstone	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
5	0	0	1.7	C	5.8	PASS
1	2	0	1.3	C	9.4	PASS
3	1	0	1.5	C	8.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	INC	INC
2	0	0	0.7	B	12.2	PASS
7	1	0	2.8	D	9.1	PASS
4	1	0	1.8	C	8.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	1	0	0.8	B	6.9	PASS
11	1	0	4.2	F	10.9	PASS
0	0	0	0.0	A	7.0	PASS

American Lung Association in Nebraska

8990 W. Dodge Road, Suite 226
 Omaha, NE 68114
 (402) 502-4250
www.lungusa.org/nebraska

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Douglas	510,199	134,035	54,719	6,947	28,777	15,838	7,388	129,488	25,412	63,394
Hall	57,487	16,289	7,825	844	3,116	1,826	944	15,622	3,171	6,739
Lancaster	281,531	64,445	29,771	3,340	16,660	8,947	4,046	72,145	14,001	40,594
Sarpy	153,504	42,924	13,239	2,225	8,505	4,569	2,008	36,456	7,020	7,996
Scotts Bluff	36,865	9,241	6,290	479	2,071	1,268	703	11,200	2,324	5,117
Sioux	1,281	239	222	12	78	49	27	429	89	205
Washington	19,718	4,873	2,758	253	1,120	677	354	5,833	1,191	1,278
Totals	1,060,585	272,046	114,824	14,100	60,327	33,174	15,470	271,173	53,208	125,323

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Douglas	0	0	0	0.0	A
Hall	DNC	DNC	DNC	DNC	DNC
Lancaster	0	0	0	0.0	A
Sarpy	DNC	DNC	DNC	DNC	DNC
Scotts Bluff	DNC	DNC	DNC	DNC	DNC
Sioux	0	0	0	0.0	A
Washington	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
3	0	0	1.0	C	8.8	PASS
0	0	0	0.0	A	7.7	PASS
0	0	0	0.0	A	8.1	PASS
3	0	0	1.0	C	9.2	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	8.4	PASS

American Lung Association in Nevada

3552 W. Cheyenne Avenue, Suite 130
 North Las Vegas NV 89032
 (702) 431-6333
www.lungusa.org/nevada

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Churchill	24,897	6,843	3,739	473	1,613	825	444	7,192	1,619	2,443
Clark	1,902,834	501,150	203,909	34,637	124,627	59,057	27,562	482,976	106,020	233,890
Lyon	52,641	13,259	7,658	916	3,527	1,796	949	15,538	3,485	5,275
Washoe	414,820	101,276	50,628	7,000	27,972	13,626	6,670	113,839	25,195	53,865
White Pine	9,188	1,970	1,374	136	644	322	167	2,756	616	1,052
Carson City	55,176	13,007	9,161	899	3,756	1,919	1,044	16,798	3,789	7,337
Totals	2,459,556	637,505	276,469	44,061	162,139	77,545	36,836	639,099	140,725	303,862

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Churchill	1	0	0	0.3	B
Clark	38	0	0	12.7	F
Lyon	0	0	0	0.0	A
Washoe	5	1	0	2.2	D
White Pine	4	0	0	1.3	C
Carson City	4	0	0	1.3	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	9.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	1	0	2.5	D	8.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

NEW HAMPSHIRE

American Lung Association in New Hampshire

1800 Elm Street
 Manchester, NH 03104
 (603) 410-5108
www.lungusa.org/newhampshire

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Belknap	61,358	12,475	10,016	1,073	4,948	2,273	1,231	19,897	3,815	5,599
Cheshire	77,045	15,122	11,598	1,300	6,336	2,767	1,432	23,690	4,495	6,957
Coos	31,487	6,092	6,212	524	2,536	1,217	702	10,967	2,132	4,477
Grafton	86,291	15,929	13,727	1,370	7,190	3,142	1,643	27,014	5,137	8,156
Hillsborough	405,906	95,703	48,083	8,228	32,056	13,563	6,601	113,105	21,168	34,979
Merrimack	149,071	32,079	20,353	2,758	11,992	5,247	2,670	44,633	8,438	10,871
Rockingham	299,276	68,422	37,652	5,883	23,687	10,414	5,237	88,208	16,635	17,991
Sullivan	42,692	8,996	7,111	773	3,410	1,559	849	13,675	2,625	4,751
Totals	1,153,126	254,818	154,752	21,909	92,156	40,182	20,365	341,189	64,445	93,781

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Belknap	3	0	0	1.0	C
Cheshire	3	0	0	1.0	C
Coos	12	0	0	4.0	F
Grafton	3	0	0	1.0	C
Hillsborough	19	0	0	6.3	F
Merrimack	3	0	0	1.0	C
Rockingham	13	1	0	4.8	F
Sullivan	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	6.3	PASS
1	0	0	0.3	B	10.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	7.2	PASS
1	0	0	0.3	B	9.1	PASS
1	0	0	0.3	B	8.9	PASS
0	0	0	0.0	A	8.0	PASS
INC	INC	INC	INC	INC	INC	INC

American Lung Association in New Jersey

1031 Route 22 West Suite 203
 Bridgewater, NJ 08807-2919
 (908) 685-8040
www.lungusa.org/newjersey

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Atlantic	271,712	63,321	39,118	5,761	15,988	9,351	4,853	80,186	18,865	28,926
Bergen	895,250	198,585	134,157	18,067	53,395	31,434	16,477	270,777	63,853	58,713
Camden	517,879	125,759	66,235	11,442	30,209	17,147	8,524	144,208	33,606	57,405
Cumberland	157,745	39,208	19,870	3,567	9,144	5,094	2,498	42,545	9,913	23,801
Essex	769,644	193,289	90,090	17,585	44,531	24,720	11,895	204,895	47,420	107,767
Gloucester	289,920	68,703	35,199	6,251	17,064	9,674	4,739	80,884	18,742	21,878
Hudson	597,924	122,659	64,500	11,160	36,933	19,393	8,676	155,616	35,572	86,008
Hunterdon	130,034	30,701	15,921	2,793	7,635	4,565	2,313	38,838	8,995	5,372
Mercer	366,222	83,985	45,749	7,641	21,780	12,191	5,948	101,662	23,605	37,360
Middlesex	790,738	184,267	97,975	16,765	46,814	26,119	12,708	217,511	50,492	61,032
Monmouth	644,105	153,862	86,603	13,998	37,643	22,189	11,398	189,611	44,328	43,974
Morris	488,518	116,662	66,156	10,614	28,557	16,758	8,600	143,096	33,481	18,065
Ocean	573,678	132,162	121,029	12,024	33,378	20,811	12,345	189,570	46,371	46,190
Passaic	491,778	124,538	60,810	11,330	28,323	15,894	7,807	132,916	30,924	79,637
Union	526,426	129,639	66,428	11,795	30,576	17,339	8,596	145,647	33,913	49,365
Warren	109,638	25,652	14,777	2,334	6,451	3,785	1,937	32,281	7,545	7,542
Totals	7,621,211	1,792,992	1,024,617	163,127	448,420	256,464	129,314	2,170,243	507,625	733,035

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Atlantic	9	0	0	3.0	D
Bergen	INC	INC	INC	INC	INC
Camden	40	3	0	14.8	F
Cumberland	19	0	0	6.3	F
Essex	INC	INC	INC	INC	INC
Gloucester	26	3	0	10.2	F
Hudson	19	0	0	6.3	F
Hunterdon	35	1	0	12.2	F
Mercer	25	2	0	9.3	F
Middlesex	35	2	0	12.7	F
Monmouth	26	0	0	8.7	F
Morris	27	1	0	9.5	F
Ocean	32	1	0	11.2	F
Passaic	17	0	0	5.7	F
Union	DNC	DNC	DNC	DNC	DNC
Warren	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	9.9	PASS
4	0	0	1.3	C	11.3	PASS
12	0	0	4.0	F	11.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	INC	INC
1	0	0	0.3	B	11.4	PASS
13	0	0	4.3	F	13.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
9	0	0	3.0	D	10.8	PASS
1	0	0	0.3	B	10.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	9.6	PASS
5	0	0	1.7	C	9.5	PASS
5	0	0	1.7	C	11.3	PASS
12	0	0	4.0	F	12.6	PASS
2	0	0	0.7	B	10.9	PASS

American Lung Association in New Mexico

5911 Jefferson Street, NE
 Albuquerque, NM 87109
 (505) 265-0732
www.lungusa.org/newmexico

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Bernalillo	642,527	156,186	78,831	11,859	41,781	20,861	10,131	173,539	40,618	98,582
Chaves	63,622	17,568	9,215	1,334	3,977	2,040	1,070	17,551	4,116	12,786
Dona Ana	206,419	56,885	25,265	4,319	12,837	6,318	3,070	52,502	12,261	49,686
Eddy	52,706	14,260	7,297	1,083	3,319	1,713	888	14,678	3,446	7,066
Grant	29,903	6,676	6,068	507	2,027	1,108	650	10,053	2,370	5,703
Lea	60,232	18,366	6,632	1,394	3,593	1,778	852	14,703	3,438	8,861
Luna	27,044	7,473	5,362	567	1,706	911	538	8,273	1,944	8,156
Sandoval	125,988	32,762	13,901	2,488	8,013	4,070	1,961	33,801	7,934	13,819
San Juan	124,131	35,352	13,096	2,684	7,616	3,789	1,791	31,172	7,297	25,222
Santa Fe	147,532	30,566	21,242	2,321	10,107	5,297	2,741	45,403	10,684	18,335
Valencia	72,913	18,930	8,619	1,437	4,643	2,355	1,152	19,674	4,615	14,261
Totals	1,553,017	395,024	195,528	29,993	99,619	50,240	24,844	421,349	98,722	262,477

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Bernalillo	2	0	0	0.7	B
Chaves	DNC	DNC	DNC	DNC	DNC
Dona Ana	9	0	0	3.0	D
Eddy	0	0	0	0.0	A
Grant	0	0	0	0.0	A
Lea	0	0	0	0.0	A
Luna	0	0	0	0.0	A
Sandoval	1	0	0	0.3	B
San Juan	16	0	0	5.3	F
Santa Fe	0	0	0	0.0	A
Valencia	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	6.0	PASS
0	0	0	0.0	A	INC	INC
15	0	0	5.0	F	10.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	5.0	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	INC	INC
0	0	0	0.0	A	INC	INC
0	0	0	0.0	A	4.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in New York

155 Washington Ave., Suite 210
 Albany, NY 12210
 (518) 465-2013
www.lungusa.org/newyork

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Albany	298,284	59,920	40,840	6,018	23,427	10,396	5,178	87,482	21,108	33,382
Bronx	1,397,287	389,306	147,488	39,103	99,171	42,287	19,699	345,450	81,701	383,691
Chautauqua	133,503	28,945	21,737	2,907	10,242	4,753	2,554	41,392	10,185	22,517
Chemung	88,331	19,445	13,744	1,953	6,757	3,118	1,653	26,987	6,625	13,123
Dutchess	293,562	66,143	38,858	6,644	22,403	10,084	5,072	85,302	20,722	24,690
Erie	909,247	195,839	144,021	19,670	69,899	32,148	17,055	278,281	68,215	122,068
Essex	37,686	6,993	6,424	702	3,009	1,408	762	12,304	3,038	4,059
Franklin	50,274	9,532	6,901	957	4,005	1,773	879	14,893	3,589	7,418
Hamilton	4,923	825	1,066	83	401	202	120	1,844	468	523
Herkimer	62,236	13,718	10,265	1,378	4,755	2,229	1,210	19,511	4,821	8,640
Jefferson	118,719	28,812	13,946	2,894	8,841	3,820	1,822	31,532	7,509	18,305
Kings	2,567,098	633,619	300,114	63,642	189,965	81,620	38,762	672,138	159,593	550,617
Madison	69,954	15,015	9,585	1,508	5,407	2,436	1,232	20,648	5,017	7,307
Monroe	733,703	164,582	101,855	16,531	55,935	25,177	12,796	213,825	51,932	94,494
Nassau	1,357,429	313,480	206,727	31,487	102,570	47,679	25,348	413,507	101,846	73,777
New York	1,629,054	259,817	207,637	26,097	134,340	56,776	26,449	463,333	109,048	262,350
Niagara	214,557	46,229	33,290	4,643	16,529	7,651	4,056	66,250	16,288	29,328
Oneida	231,044	49,642	37,603	4,986	17,753	8,186	4,378	71,106	17,447	31,240

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Onondaga	454,753	104,132	64,282	10,459	34,437	15,557	7,971	132,590	32,254	60,792
Orange	383,532	104,311	39,975	10,477	27,595	12,059	5,712	99,400	23,813	43,394
Oswego	121,377	27,581	14,920	2,770	9,251	4,109	2,015	34,379	8,301	17,034
Putnam	99,265	23,572	11,835	2,368	7,497	3,404	1,692	28,694	7,001	5,960
Queens	2,306,712	494,057	300,922	49,624	178,096	78,104	38,278	652,332	156,497	293,729
Rensselaer	155,541	33,322	21,142	3,347	12,027	5,399	2,717	45,666	11,078	16,602
Richmond	491,730	113,416	61,394	11,392	37,283	16,567	8,161	138,841	33,527	55,407
Rockland	300,173	83,166	41,203	8,353	21,319	9,761	5,088	83,868	20,523	34,291
St. Lawrence	109,715	22,826	14,824	2,293	8,536	3,774	1,873	31,697	7,634	17,504
Saratoga	220,069	48,324	28,832	4,854	16,938	7,640	3,834	64,583	15,705	13,527
Schenectady	152,169	34,823	23,586	3,498	11,497	5,278	2,794	45,639	11,179	17,191
Steuben	96,552	22,164	15,035	2,226	7,304	3,404	1,822	29,611	7,301	14,342
Suffolk	1,518,475	367,195	204,117	36,882	113,373	51,520	26,306	438,791	107,047	84,755
Ulster	181,440	36,590	26,192	3,675	14,258	6,502	3,343	55,543	13,571	21,578
Wayne	91,291	21,806	12,758	2,190	6,850	3,171	1,652	27,269	6,706	9,939
Westchester	955,962	229,936	135,355	23,095	71,354	32,549	16,853	278,834	68,126	84,810
Totals	17,835,647	4,069,083	2,358,473	408,706	1,353,023	600,541	299,136	5,053,522	1,219,417	2,478,384

NEW YORK

American Lung Association in New York

155 Washington Ave., Suite 210
Albany, NY 12210
(518) 465-2013
www.lungusa.org/newyork

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Albany	9	0	0	3.0	D
Bronx	13	0	0	4.3	F
Chautauqua	24	0	0	8.0	F
Chemung	3	0	0	1.0	C
Dutchess	15	0	0	5.0	F
Erie	18	0	0	6.0	F
Essex	18	2	0	7.0	F
Franklin	3	0	0	1.0	C
Hamilton	3	0	0	1.0	C
Herkimer	4	0	0	1.3	C
Jefferson	11	0	0	3.7	F
Kings	DNC	DNC	DNC	DNC	DNC
Madison	8	0	0	2.7	D
Monroe	13	0	0	4.3	F
Nassau	DNC	DNC	DNC	DNC	DNC
New York	12	0	0	4.0	F
Niagara	17	0	0	5.7	F
Oneida	3	0	0	1.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
4	0	0	1.3	C	9.3	PASS
14	0	0	4.7	F	13.9	PASS
1	0	0	0.3	B	8.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
8	0	0	2.7	D	10.7	PASS
0	0	0	0.0	A	4.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	12.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	8.8	PASS
2	0	0	0.7	B	10.3	PASS
7	0	0	2.3	D	12.1	PASS
2	0	0	0.7	B	9.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Onondaga	8	0	0	2.7	D
Orange	11	3	0	5.2	F
Oswego	8	0	0	2.7	D
Putnam	18	0	0	6.0	F
Queens	8	0	0	2.7	D
Rensselaer	11	0	0	3.7	F
Richmond	11	1	0	4.2	F
Rockland	INC	INC	INC	INC	INC
St. Lawrence	DNC	DNC	DNC	DNC	DNC
Saratoga	19	0	0	6.3	F
Schenectady	4	0	0	1.3	C
Steuben	4	0	0	1.3	C
Suffolk	34	2	0	12.3	F
Ulster	3	0	0	1.0	C
Wayne	9	0	0	3.0	D
Westchester	24	4	0	10.0	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	8.5	PASS
3	0	0	1.0	C	9.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	10.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	11.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	5.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	7.7	PASS
0	0	0	0.0	A	9.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	10.6	PASS

NORTH CAROLINA

American Lung Association in North Carolina

514 Daniels Street, #109
 Raleigh, NC 27605
 (919) 719-9960
www.lungusa.org/northcarolina

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Alamance	150,358	36,647	21,210	3,143	8,849	5,004	2,563	42,610	11,335	22,341
Alexander	36,777	8,223	5,209	705	2,223	1,277	657	10,907	2,920	5,306
Avery	17,932	3,272	3,162	281	1,135	647	346	5,611	1,490	2,896
Buncombe	231,452	48,027	36,899	4,119	14,233	8,239	4,359	71,217	19,057	36,407
Caldwell	79,914	18,124	12,452	1,554	4,793	2,804	1,492	24,314	6,529	13,111
Caswell	23,004	4,854	3,648	416	1,407	836	448	7,283	1,966	4,876
Catawba	159,125	38,391	22,488	3,293	9,393	5,385	2,779	46,050	12,311	22,556
Chatham	64,772	14,254	9,408	1,222	3,929	2,273	1,179	19,490	5,227	7,019
Cumberland	315,207	84,590	29,994	7,255	18,138	9,440	4,192	75,558	19,646	50,582
Davidson	158,582	38,042	21,823	3,263	9,384	5,395	2,769	46,047	12,332	22,833
Davie	41,420	9,851	6,385	845	2,448	1,447	776	12,597	3,395	4,801
Duplin	53,177	13,847	7,031	1,188	3,065	1,727	874	14,634	3,894	12,757
Durham	269,706	63,286	25,277	5,428	16,258	8,373	3,638	66,415	17,214	42,503
Edgecombe	51,853	13,631	5,940	1,169	2,988	1,703	840	14,299	3,834	12,953
Forsyth	359,638	88,322	46,939	7,575	21,162	11,874	5,942	100,134	26,623	57,456
Franklin	60,088	14,557	6,787	1,248	3,565	1,985	955	16,473	4,385	8,018
Gaston	208,958	50,744	27,530	4,352	12,336	6,960	3,499	58,826	15,668	31,956
Graham	8,001	1,724	1,660	148	482	295	173	2,677	723	1,546
Granville	57,639	13,103	6,591	1,124	3,489	1,915	911	15,808	4,186	7,433
Guilford	480,362	114,112	59,680	9,787	28,624	15,745	7,668	131,155	34,672	79,412
Haywood	57,109	11,431	11,816	980	3,507	2,164	1,263	19,580	5,303	8,563
Jackson	36,891	6,929	5,550	594	2,333	1,301	660	11,022	2,918	6,962
Johnston	168,525	46,970	15,880	4,028	9,552	5,139	2,346	41,689	10,987	28,963
Lenoir	56,387	14,025	9,292	1,203	3,275	1,964	1,082	17,305	4,672	11,551
Lincoln	76,043	18,578	9,505	1,593	4,486	2,546	1,270	21,467	5,739	10,701

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Mcdowell	43,988	9,683	7,106	830	2,659	1,551	830	13,483	3,614	7,579
Martin	23,337	5,454	4,017	468	1,381	838	467	7,423	2,010	4,939
Mecklenburg	913,639	237,842	78,551	20,398	53,271	27,572	11,905	218,335	56,775	126,807
Mitchell	15,634	3,169	3,100	272	959	586	337	5,263	1,423	2,826
Montgomery	27,745	6,850	4,084	587	1,623	939	493	8,088	2,166	5,664
New Hanover	195,085	39,600	26,867	3,396	12,132	6,696	3,315	56,153	14,839	30,416
Onslow	173,064	40,880	12,336	3,506	10,478	4,918	1,840	36,675	9,135	21,659
Orange	129,083	26,871	13,409	2,305	8,036	4,227	1,897	34,003	8,880	19,910
Person	37,667	8,688	5,384	745	2,253	1,320	689	11,356	3,058	5,414
Pitt	159,057	36,950	16,122	3,169	9,602	4,977	2,209	39,813	10,330	38,973
Robeson	129,559	35,980	14,141	3,086	7,329	3,993	1,898	32,923	8,689	38,939
Rockingham	92,252	20,972	14,752	1,799	5,523	3,266	1,760	28,493	7,673	13,557
Rowan	140,798	33,135	20,938	2,842	8,364	4,817	2,519	41,427	11,078	22,778
Swain	13,404	3,143	2,339	270	792	475	264	4,201	1,133	2,316
Union	198,645	59,783	17,682	5,127	10,918	5,873	2,667	47,541	12,535	21,321
Wake	897,214	237,116	74,382	20,336	52,057	27,056	11,654	214,149	55,821	89,217
Watauga	45,479	6,492	5,777	557	3,058	1,581	719	12,762	3,298	8,516
Wayne	113,811	29,354	14,667	2,517	6,587	3,698	1,853	31,206	8,298	22,051
Yancey	18,548	3,744	3,684	321	1,139	697	401	6,264	1,695	3,260
Totals	6,590,929	1,621,240	751,494	139,042	389,215	211,518	100,398	1,742,726	459,476	999,644

NORTH CAROLINA

American Lung Association in North Carolina

514 Daniels Street, #109
 Raleigh, NC 27605
 (919) 719-9960
www.lungusa.org/northcarolina

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Alamance	DNC	DNC	DNC	DNC	DNC
Alexander	19	0	0	6.3	F
Avery	2	0	0	0.7	B
Buncombe	3	0	0	1.0	C
Caldwell	5	0	0	1.7	C
Caswell	21	0	0	7.0	F
Catawba	DNC	DNC	DNC	DNC	DNC
Chatham	4	0	0	1.3	C
Cumberland	13	0	0	4.3	F
Davidson	DNC	DNC	DNC	DNC	DNC
Davie	26	0	0	8.7	F
Duplin	DNC	DNC	DNC	DNC	DNC
Durham	15	0	0	5.0	F
Edgecombe	13	0	0	4.3	F
Forsyth	35	1	0	12.2	F
Franklin	13	0	0	4.3	F
Gaston	DNC	DNC	DNC	DNC	DNC
Graham	16	0	0	5.3	F
Granville	18	0	0	6.0	F
Guilford	29	1	0	10.2	F
Haywood	18	0	0	6.0	F
Jackson	INC	INC	INC	INC	INC
Johnston	12	0	0	4.0	F
Lenoir	6	0	0	2.0	C
Lincoln	28	1	0	9.8	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	11.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	10.7	PASS
1	0	0	0.3	B	12.5	PASS
0	1	0	0.5	B	10.2	PASS
0	0	0	0.0	A	11.7	PASS
1	0	0	0.3	B	13.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	9.6	PASS
0	0	0	0.0	A	INC	INC
0	0	0	0.0	A	10.4	PASS
3	0	0	1.0	C	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	12.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	1	0	1.2	C	11.3	PASS
0	0	0	0.0	A	INC	INC
1	0	0	0.3	B	10.4	PASS
INC	INC	INC	INC	INC	INC	INC
1	0	0	0.3	B	9.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Mcdowell	DNC	DNC	DNC	DNC	DNC
Martin	4	0	0	1.3	C
Mecklenburg	47	6	1	19.3	F
Mitchell	DNC	DNC	DNC	DNC	DNC
Montgomery	DNC	DNC	DNC	DNC	DNC
New Hanover	1	0	0	0.3	B
Onslow	DNC	DNC	DNC	DNC	DNC
Orange	DNC	DNC	DNC	DNC	DNC
Person	13	0	0	4.3	F
Pitt	13	0	0	4.3	F
Robeson	DNC	DNC	DNC	DNC	DNC
Rockingham	19	0	0	6.3	F
Rowan	62	6	0	23.7	F
Swain	0	0	0	0.0	A
Union	26	1	0	9.2	F
Wake	29	0	0	9.7	F
Watauga	DNC	DNC	DNC	DNC	DNC
Wayne	DNC	DNC	DNC	DNC	DNC
Yancey	12	0	0	4.0	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	11.5	PASS
0	1	0	0.5	B	9.5	PASS
4	0	0	1.3	C	12.6	PASS
2	0	0	0.7	B	10.8	PASS
1	0	0	0.3	B	10.6	PASS
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	1	0	0.8	B	INC	INC
2	0	0	0.7	B	11.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	12.3	PASS
1	0	0	0.3	B	11.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	1	0	1.5	C	11.2	PASS
0	0	0	0.0	A	9.6	PASS
1	0	0	0.3	B	11.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH DAKOTA

American Lung Association in North Dakota

212 N. 2nd Street
 Bismarck, ND 58501
 (701) 223-5613
www.lungusa.org/northdakota

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Billings	827	154	129	9	57	32	17	280	57	86
Burke	1,839	364	397	21	123	73	44	676	141	176
Burleigh	79,822	17,597	10,652	1,010	5,474	2,695	1,336	22,620	4,492	6,431
Cass	143,339	31,086	14,012	1,784	10,135	4,498	1,942	35,553	6,800	16,051
Dunn	3,365	773	595	44	220	124	70	1,106	228	370
McKenzie	5,799	1,451	839	83	370	203	109	1,770	361	735
Mercer	7,873	1,690	1,254	97	519	297	163	2,622	539	557
Oliver	1,643	347	250	20	108	63	34	550	113	184
Totals	244,507	53,462	28,128	3,069	17,005	7,985	3,715	65,177	12,730	24,590

HIGH OZONE DAYS 2007-2009

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	0	0	0	0.0	A
McKenzie	0	0	0	0.0	A
Mercer	0	0	0	0.0	A
Oliver	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	4.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	6.8	PASS
2	0	0	0.7	B	7.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	6.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Ohio

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

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Allen	104,357	25,453	15,446	2,386	7,756	3,539	1,857	30,485	8,198	18,751
Ashtabula	100,767	23,816	15,407	2,233	7,522	3,517	1,876	30,551	8,213	17,245
Athens	63,026	10,246	6,438	961	5,426	2,055	859	16,005	4,306	18,756
Butler	363,184	89,746	41,603	8,415	27,375	11,732	5,610	97,011	26,067	46,350
Clark	139,671	32,717	22,667	3,068	10,443	4,870	2,634	42,529	11,440	22,130
Clermont	196,364	49,973	22,581	4,685	14,577	6,417	3,125	53,536	14,378	20,330
Clinton	43,058	10,562	5,670	990	3,216	1,440	728	12,203	3,280	4,989
Cuyahoga	1,275,709	292,883	194,879	27,461	96,471	44,247	23,347	382,121	102,760	235,014
Delaware	168,708	47,444	14,867	4,448	12,234	5,148	2,326	41,608	11,167	8,433
Franklin	1,150,122	275,763	115,143	25,856	88,661	36,021	16,129	289,384	77,767	207,183
Geauga	99,060	24,926	15,740	2,337	7,170	3,501	1,929	30,903	8,305	7,789
Greene	159,823	34,583	20,595	3,243	12,474	5,442	2,676	45,542	12,240	18,620
Hamilton	855,062	200,406	115,705	18,790	64,933	28,687	14,447	242,554	65,213	126,872
Jefferson	67,691	13,678	12,743	1,282	5,213	2,530	1,430	22,561	6,070	11,524
Knox	59,637	14,206	8,833	1,332	4,471	2,030	1,061	17,456	4,694	7,383
Lake	236,775	52,298	36,828	4,903	18,037	8,429	4,492	73,173	19,671	19,274
Lawrence	62,744	14,248	9,598	1,336	4,767	2,171	1,141	18,714	5,033	12,168
Licking	158,488	38,868	21,372	3,644	11,799	5,356	2,741	45,662	12,271	18,030

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Lorain	305,707	73,108	42,167	6,855	22,931	10,416	5,350	88,931	23,901	42,750
Lucas	463,493	110,036	60,186	10,317	35,130	15,430	7,677	129,788	34,888	84,797
Madison	42,539	9,561	5,321	896	3,290	1,427	696	11,904	3,199	5,280
Mahoning	236,735	51,468	41,320	4,826	17,975	8,580	4,747	75,747	20,376	42,135
Medina	174,035	43,820	22,117	4,109	12,856	5,846	2,959	49,630	13,330	11,432
Miami	101,256	23,878	15,570	2,239	7,565	3,532	1,886	30,687	8,250	11,591
Montgomery	532,562	121,551	80,785	11,397	40,455	18,322	9,591	157,588	42,387	83,595
Portage	157,530	33,175	19,916	3,110	12,404	5,387	2,626	44,917	12,071	21,367
Preble	41,422	9,719	6,354	911	3,098	1,451	775	12,608	3,389	4,190
Scioto	76,334	17,398	11,640	1,631	5,812	2,605	1,359	22,362	6,016	16,987
Stark	379,466	86,481	60,813	8,108	28,615	13,366	7,193	116,495	31,329	54,614
Summit	542,405	123,630	77,454	11,592	41,264	18,744	9,676	160,352	43,103	78,762
Trumbull	210,157	46,075	36,332	4,320	15,924	7,600	4,196	67,034	18,031	32,904
Warren	210,712	55,822	21,762	5,234	15,528	6,665	3,135	54,775	14,709	12,051
Washington	61,048	12,792	10,514	1,199	4,691	2,226	1,221	19,570	5,264	8,204
Wood	125,380	26,856	15,227	2,518	9,871	4,206	2,011	34,762	9,343	16,031
Totals	8,965,027	2,097,186	1,223,593	196,632	679,950	302,935	153,506	2,569,148	690,659	1,347,531

American Lung Association in Ohio

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

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Allen	7	0	0	2.3	D
Ashtabula	22	1	0	7.8	F
Athens	INC	INC	INC	INC	INC
Butler	38	3	0	14.2	F
Clark	13	1	0	4.8	F
Clermont	17	0	0	5.7	F
Clinton	25	0	0	8.3	F
Cuyahoga	19	1	0	6.8	F
Delaware	11	0	0	3.7	F
Franklin	31	0	0	10.3	F
Geauga	6	0	0	2.0	C
Greene	11	0	0	3.7	F
Hamilton	53	2	0	18.7	F
Jefferson	12	0	0	4.0	F
Knox	6	0	0	2.0	C
Lake	18	0	0	6.0	F
Lawrence	13	0	0	4.3	F
Licking	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	10.9	PASS
5	0	0	1.7	C	14.0	PASS
6	0	0	2.0	C	13.3	PASS
1	0	0	0.3	B	12.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
10	0	0	3.3	F	14.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	13.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	12.1	PASS
12	0	0	4.0	F	15.0	PASS
10	0	0	3.3	F	14.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	INC	INC
3	0	0	1.0	C	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Lorain	6	0	0	2.0	C
Lucas	12	1	0	4.5	F
Madison	16	0	0	5.3	F
Mahoning	8	0	0	2.7	D
Medina	3	0	0	1.0	C
Miami	3	0	0	1.0	C
Montgomery	10	0	0	3.3	F
Portage	8	0	0	2.7	D
Preble	4	0	0	1.3	C
Scioto	DNC	DNC	DNC	DNC	DNC
Stark	36	1	0	12.5	F
Summit	28	1	0	9.8	F
Trumbull	25	0	0	8.3	F
Warren	46	1	0	15.8	F
Washington	20	0	0	6.7	F
Wood	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	11.4	PASS
5	0	0	1.7	C	12.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	13.0	PASS
0	0	0	0.0	A	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	13.8	PASS
2	0	0	0.7	B	12.3	PASS
2	0	0	0.7	B	12.2	PASS
3	0	0	1.0	C	12.3	PASS
4	0	0	1.3	C	INC	INC
5	0	0	1.7	C	13.7	PASS
INC	INC	INC	INC	INC	INC	INC
2	0	0	0.7	B	12.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Oklahoma

11212 N. May Ave Suite 405
 Oklahoma City, OK 73120
 (405) 748-4674
www.lungusa.org/oklahoma

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Adair	21,857	6,354	2,719	636	1,543	679	341	5,737	1,699	5,464
Caddo	30,393	7,749	4,260	775	2,250	1,000	515	8,539	2,526	6,090
Canadian	109,668	28,385	12,221	2,840	8,108	3,509	1,680	29,045	8,620	8,092
Carter	48,326	12,467	7,266	1,248	3,551	1,615	858	13,987	4,143	7,960
Cherokee	46,029	11,047	5,739	1,105	3,500	1,488	721	12,360	3,646	9,794
Cleveland	244,589	53,967	23,707	5,400	19,180	7,834	3,455	62,567	18,480	27,133
Comanche	113,228	29,970	12,509	2,999	8,355	3,482	1,629	28,484	8,397	15,288
Cotton	6,281	1,517	1,015	152	470	218	118	1,907	565	1,010
Creek	70,244	17,645	10,492	1,766	5,200	2,388	1,268	20,692	6,142	8,953
Dewey	4,404	1,076	946	108	326	160	97	1,472	435	595
Kay	46,110	12,011	7,640	1,202	3,366	1,564	862	13,779	4,079	7,976
Lincoln	32,199	8,096	4,809	810	2,380	1,101	586	9,556	2,840	5,064
Love	9,124	2,219	1,561	222	680	319	177	2,824	837	1,268
McClain	33,168	8,563	4,667	857	2,440	1,100	571	9,433	2,797	3,779
Mayes	40,065	10,091	6,414	1,010	2,964	1,362	738	11,903	3,524	6,401
Muskogee	71,412	18,018	10,817	1,803	5,297	2,384	1,260	20,586	6,087	14,540
Oklahoma	716,704	184,435	89,827	18,456	53,188	22,817	11,191	190,542	56,247	120,900
Ottawa	31,629	7,645	5,243	765	2,374	1,085	590	9,493	2,806	5,709
Pittsburg	45,211	10,136	7,777	1,014	3,472	1,587	866	13,907	4,108	7,230
Sequoyah	41,433	10,610	6,328	1,062	3,051	1,393	743	12,087	3,580	9,035
Tulsa	601,961	156,436	73,033	15,654	44,479	19,178	9,362	159,911	47,294	86,097
Totals	2,364,035	598,437	298,990	59,885	176,171	76,263	37,628	638,811	188,853	358,378

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Adair	0	0	0	0.0	A
Caddo	1	0	0	0.3	B
Canadian	4	0	0	1.3	C
Carter	INC	INC	INC	INC	INC
Cherokee	0	0	0	0.0	A
Cleveland	0	0	0	0.0	A
Comanche	3	0	0	1.0	C
Cotton	INC	INC	INC	INC	INC
Creek	3	0	0	1.0	C
Dewey	0	0	0	0.0	A
Kay	4	0	0	1.3	C
Lincoln	INC	INC	INC	INC	INC
Love	INC	INC	INC	INC	INC
McClain	2	0	0	0.7	B
Mayes	2	0	0	0.7	B
Muskogee	INC	INC	INC	INC	INC
Oklahoma	14	0	0	4.7	F
Ottawa	0	0	0	0.0	A
Pittsburg	2	0	0	0.7	B
Sequoyah	2	0	0	0.7	B
Tulsa	16	1	0	5.8	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	8.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
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
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	11.3	PASS
1	0	0	0.3	B	11.5	PASS
0	0	0	0.0	A	10.4	PASS
0	0	0	0.0	A	10.6	PASS
1	0	0	0.3	B	11.0	PASS
1	0	0	0.3	B	11.3	PASS
2	0	0	0.7	B	11.5	PASS

American Lung Association in Oregon

7420 SW Bridgeport Road, Suite 200
 Tigard, OR 97224-7711
 (503) 924-4094
www.lungusa.org/oregon

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Clackamas	386,143	90,104	50,736	5,058	32,777	13,307	6,756	113,116	24,985	35,864
Columbia	49,592	11,659	6,178	655	4,207	1,714	862	14,520	3,205	5,846
Crook	22,566	5,161	3,939	290	1,899	811	452	7,179	1,576	3,606
Deschutes	158,629	36,112	22,724	2,027	13,521	5,496	2,843	47,068	10,399	18,625
Harney	6,756	1,496	1,360	84	568	257	151	2,338	510	1,220
Jackson	201,286	44,155	35,081	2,479	17,161	7,264	4,016	64,098	14,091	29,520
Josephine	81,026	16,580	17,570	931	6,938	3,132	1,876	28,716	6,265	16,357
Klamath	66,247	15,331	10,854	861	5,577	2,334	1,268	20,431	4,498	13,098
Lake	7,089	1,462	1,482	82	607	273	162	2,494	544	1,300
Lane	351,109	70,025	50,780	3,931	31,083	12,379	6,290	105,086	23,292	58,935
Linn	116,584	27,856	18,507	1,564	9,734	4,024	2,161	35,026	7,724	17,140
Marion	317,981	84,898	38,839	4,766	25,881	10,083	4,959	84,361	18,760	50,546
Multnomah	726,855	154,032	73,926	8,647	64,286	23,758	10,649	191,057	42,844	107,551
Umatilla	73,347	19,414	9,348	1,090	5,975	2,369	1,189	20,003	4,436	11,381
Union	25,038	5,694	4,070	320	2,121	878	473	7,657	1,688	4,084
Washington	537,318	137,554	51,015	7,722	44,864	16,715	7,523	134,722	30,164	53,333
Totals	3,127,566	721,533	396,409	40,507	267,199	104,794	51,630	877,872	194,983	428,406

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Clackamas	5	0	0	1.7	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	0	0	0.3	B
Josephine	DNC	DNC	DNC	DNC	DNC
Klamath	DNC	DNC	DNC	DNC	DNC
Lake	DNC	DNC	DNC	DNC	DNC
Lane	1	0	0	0.3	B
Linn	DNC	DNC	DNC	DNC	DNC
Marion	3	0	0	1.0	C
Multnomah	1	0	0	0.3	B
Umatilla	0	0	0	0.0	A
Union	DNC	DNC	DNC	DNC	DNC
Washington	INC	INC	INC	INC	INC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC
4	0	0	1.3	C	9.7	PASS
12	0	0	4.0	F	10.0	PASS
1	0	0	0.3	B	8.7	PASS
15	1	0	5.5	F	11.8	PASS
12	1	0	4.5	F	10.0	PASS
33	0	0	11.0	F	11.0	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	8.0	PASS
0	0	0	0.0	A	8.0	PASS
0	0	0	0.0	A	7.0	PASS
1	0	0	0.3	B	8.6	PASS

PENNSYLVANIA

American Lung Association in Pennsylvania

3001 Old Gettysburg Road
Camp Hill, PA 17011-7206
(717) 541-5864
www.lungusa.org/pennsylvania

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Adams	102,323	22,963	15,257	2,366	7,175	3,565	1,863	30,666	7,162	7,077
Allegheny	1,218,494	242,202	204,401	24,952	88,010	44,083	23,650	383,427	89,816	153,937
Armstrong	67,851	13,924	12,425	1,434	4,760	2,532	1,423	22,520	5,314	8,399
Beaver	171,673	34,909	31,392	3,596	12,106	6,388	3,578	56,723	13,375	19,285
Berks	407,125	97,104	58,492	10,004	28,165	13,798	7,137	118,081	27,529	47,780
Blair	126,122	26,695	22,662	2,750	8,880	4,567	2,533	40,336	9,491	17,824
Bucks	626,015	142,248	90,433	14,654	43,440	22,031	11,519	189,720	44,351	25,903
Cambria	143,998	28,396	27,110	2,925	10,270	5,362	3,011	47,642	11,232	20,991
Centre	146,212	23,442	16,611	2,415	11,793	4,852	2,110	38,404	8,708	23,186
Chester	498,894	122,830	63,063	12,654	34,241	16,678	8,352	140,836	32,717	30,546
Clearfield	82,324	16,143	14,625	1,663	5,924	3,028	1,661	26,613	6,254	10,910
Cumberland	232,483	47,356	36,388	4,879	16,802	8,253	4,320	70,982	16,570	14,672
Dauphin	258,934	59,291	35,928	6,108	18,111	8,914	4,563	75,985	17,700	31,959
Delaware	558,028	129,660	79,758	13,358	38,998	18,988	9,763	162,055	37,746	49,589
Erie	280,291	63,342	40,938	6,526	19,750	9,617	4,962	82,191	19,151	41,724
Franklin	144,994	33,561	24,569	3,457	10,014	5,060	2,763	44,360	10,414	13,162
Greene	39,245	7,763	5,940	800	2,859	1,403	726	12,007	2,800	6,281
Indiana	87,450	16,349	13,966	1,684	6,491	3,132	1,628	26,838	6,255	14,474

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Lackawanna	208,801	43,339	36,961	4,465	14,824	7,556	4,154	66,455	15,617	28,916
Lancaster	507,766	125,939	75,950	12,974	34,593	17,080	8,988	147,264	34,405	46,401
Lawrence	90,160	19,159	16,918	1,974	6,293	3,307	1,870	29,482	6,957	10,530
Lehigh	343,519	80,483	52,716	8,291	23,808	11,788	6,222	101,784	23,790	41,232
Luzerne	312,845	63,634	56,765	6,556	22,279	11,426	6,329	100,845	23,724	39,328
Lycoming	116,840	24,529	19,508	2,527	8,302	4,187	2,258	36,507	8,559	16,335
Mercer	116,071	24,948	20,817	2,570	8,112	4,211	2,343	37,263	8,775	14,215
Monroe	166,355	39,464	20,861	4,066	11,523	5,659	2,830	47,779	11,102	16,571
Montgomery	782,339	177,415	117,678	18,277	54,617	27,249	14,308	234,867	54,887	41,925
Northampton	298,990	65,602	45,068	6,758	21,108	10,478	5,481	90,146	21,053	24,607
Perry	45,502	10,513	6,072	1,083	3,165	1,571	800	13,370	3,114	3,955
Philadelphia	1,547,297	362,879	192,683	37,384	110,439	50,004	24,037	413,743	95,348	366,125
Tioga	40,875	8,305	7,483	856	2,903	1,502	836	13,286	3,128	6,262
Washington	207,389	42,739	36,360	4,403	14,654	7,615	4,198	67,117	15,791	22,025
Westmoreland	362,251	71,744	68,549	7,391	25,617	13,661	7,736	121,935	28,797	36,754
York	428,937	99,182	60,630	10,218	29,885	14,751	7,601	126,092	29,396	37,354
Totals	10,768,393	2,388,052	1,628,977	246,018	759,912	374,296	195,553	3,217,321	751,028	1,290,234

PENNSYLVANIA

American Lung Association in Pennsylvania

3001 Old Gettysburg Road
Camp Hill, PA 17011-7206
(717) 541-5864
www.lungusa.org/pennsylvania

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Adams	14	0	0	4.7	F
Allegheny	39	1	0	13.5	F
Armstrong	28	1	0	9.8	F
Beaver	17	0	0	5.7	F
Berks	26	0	0	8.7	F
Blair	3	0	0	1.0	C
Bucks	33	3	2	13.8	F
Cambria	2	0	0	0.7	B
Centre	5	0	0	1.7	C
Chester	20	0	1	7.3	F
Clearfield	6	0	0	2.0	C
Cumberland	DNC	DNC	DNC	DNC	DNC
Dauphin	26	0	0	8.7	F
Delaware	19	1	0	6.8	F
Erie	15	1	0	5.5	F
Franklin	6	0	0	2.0	C
Greene	8	0	0	2.7	D
Indiana	14	0	0	4.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
6	0	0	2.0	C	11.6	PASS
93	3	0	32.5	F	17.0	FAIL
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	14.2	PASS
6	0	0	2.0	C	12.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	12.2	PASS
2	0	0	0.7	B	13.4	PASS
7	0	0	2.3	D	10.7	PASS
5	0	0	1.7	C	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
13	0	0	4.3	F	12.6	PASS
INC	INC	INC	INC	INC	13.2	PASS
4	0	0	1.3	C	13.7	PASS
9	0	0	3.0	D	10.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Lackawanna	7	1	0	2.8	D
Lancaster	27	0	0	9.0	F
Lawrence	5	0	0	1.7	C
Lehigh	19	0	0	6.3	F
Luzerne	8	0	0	2.7	D
Lycoming	10	0	0	3.3	F
Mercer	22	0	0	7.3	F
Monroe	6	0	0	2.0	C
Montgomery	27	1	0	9.5	F
Northampton	16	0	0	5.3	F
Perry	8	0	0	2.7	D
Philadelphia	34	4	0	13.3	F
Tioga	4	0	0	1.3	C
Washington	12	0	0	4.0	F
Westmoreland	9	0	0	3.0	D
York	27	1	0	9.5	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
7	0	0	2.3	D	10.2	PASS
8	0	0	2.7	D	13.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
8	0	0	2.7	D	11.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	11.7	PASS
14	0	0	4.7	F	12.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
21	0	0	7.0	F	13.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
15	0	0	5.0	F	13.7	PASS
6	0	0	2.0	C	13.8	PASS
8	0	0	2.7	D	13.7	PASS

RHODE ISLAND

American Lung Association in Rhode Island

260 West Exchange Street, Suite 102-B
 Providence, RI 02903
 (401) 533-5171
www.lungusa.org/rhodeisland

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Kent	168,752	34,784	25,559	3,822	13,473	6,080	3,190	52,417	9,945	13,908
Providence	627,690	140,734	84,119	15,463	49,157	20,995	10,400	176,109	32,487	89,058
Washington	126,925	25,500	18,780	2,802	10,225	4,617	2,408	39,720	7,546	9,585
Totals	923,367	201,018	128,458	22,087	72,855	31,692	15,998	268,246	49,978	112,551

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Kent	12	0	0	4.0	F
Providence	15	1	0	5.5	F
Washington	12	1	0	4.5	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	7.3	PASS
2	0	0	0.7	B	10.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC

SOUTH CAROLINA

American Lung Association in South Carolina

44-A Markfield Drive
 Charleston, SC 29407
 (843) 556-8451
www.lungusa.org/southcarolina

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Abbeville	25,098	5,595	3,826	480	1,535	886	468	7,661	2,152	4,784
Aiken	156,017	36,315	24,248	3,114	9,431	5,435	2,898	47,168	13,220	28,674
Anderson	184,901	44,824	27,491	3,844	11,023	6,306	3,318	54,399	15,229	30,636
Barnwell	22,688	5,799	3,167	497	1,328	761	396	6,536	1,836	5,593
Beaufort	155,215	33,867	31,640	2,905	9,640	5,593	3,236	50,311	13,936	17,953
Berkeley	173,498	43,374	16,900	3,720	10,116	5,463	2,477	44,171	12,307	25,594
Charleston	355,276	75,457	46,308	6,471	21,872	11,935	5,804	99,296	27,501	56,163
Cherokee	54,714	13,337	7,211	1,144	3,243	1,822	917	15,406	4,307	10,328
Chester	32,410	7,814	4,697	670	1,935	1,112	582	9,577	2,690	6,236
Chesterfield	43,037	10,676	5,851	916	2,541	1,450	745	12,380	3,477	9,993
Colleton	39,246	9,674	5,959	830	2,331	1,352	723	11,757	3,305	8,521
Darlington	66,445	16,167	9,284	1,387	3,951	2,264	1,172	19,398	5,450	14,646
Edgefield	25,752	5,441	2,920	467	1,584	880	418	7,265	2,039	4,897
Florence	134,208	33,951	18,130	2,912	7,866	4,433	2,258	37,680	10,529	23,991
Georgetown	60,703	13,491	10,726	1,157	3,739	2,222	1,245	19,746	5,564	12,434
Greenville	451,428	111,230	55,706	9,539	26,607	14,748	7,233	123,272	34,380	67,337
Greenwood	69,671	16,887	10,619	1,448	4,153	2,339	1,228	20,135	5,595	13,162
Horry	263,868	54,430	47,556	4,668	16,560	9,582	5,297	84,484	23,570	41,191

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Lexington	255,607	63,678	31,623	5,461	15,023	8,428	4,175	70,803	19,837	26,761
Oconee	71,514	15,354	13,412	1,317	4,452	2,623	1,486	23,404	6,555	13,634
Pickens	118,144	25,077	16,169	2,151	7,284	3,990	1,973	33,429	9,252	19,508
Richland	372,023	88,508	36,761	7,591	22,021	11,683	5,214	93,745	25,922	54,397
Spartanburg	286,822	69,894	39,526	5,994	17,021	9,558	4,869	81,227	22,658	41,480
Union	27,362	6,240	4,549	535	1,668	975	533	8,562	2,405	5,905
Williamsburg	34,445	7,863	5,087	674	2,090	1,196	625	10,290	2,885	10,682
York	227,003	57,383	27,411	4,921	13,263	7,354	3,595	61,389	17,134	27,546
Totals	3,707,095	872,326	506,777	74,813	222,278	124,390	62,885	1,053,491	293,732	582,046

SOUTH CAROLINA

American Lung Association in South Carolina

44-A Markfield Drive
 Charleston, SC 29407
 (843) 556-8451
www.lungusa.org/southcarolina

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Abbeville	13	0	0	4.3	F
Aiken	12	0	0	4.0	F
Anderson	INC	INC	INC	INC	INC
Barnwell	INC	INC	INC	INC	INC
Beaufort	DNC	DNC	DNC	DNC	DNC
Berkeley	1	0	0	0.3	B
Charleston	1	0	0	0.3	B
Cherokee	5	0	0	1.7	C
Chester	INC	INC	INC	INC	INC
Chesterfield	3	0	0	1.0	C
Colleton	1	0	0	0.3	B
Darlington	7	0	0	2.3	D
Edgefield	4	0	0	1.3	C
Florence	DNC	DNC	DNC	DNC	DNC
Georgetown	DNC	DNC	DNC	DNC	DNC
Greenville	INC	INC	INC	INC	INC
Greenwood	DNC	DNC	DNC	DNC	DNC
Horry	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	1	0	1.5	C	9.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	10.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	11.3	PASS
1	0	0	0.3	B	INC	INC
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	12.3	PASS
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Lexington	DNC	DNC	DNC	DNC	DNC
Oconee	5	0	0	1.7	C
Pickens	13	0	0	4.3	F
Richland	19	0	0	6.3	F
Spartanburg	22	0	0	7.3	F
Union	INC	INC	INC	INC	INC
Williamsburg	INC	INC	INC	INC	INC
York	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	12.1	PASS
0	0	0	0.0	A	9.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	0	0	1.0	C	12.0	PASS
0	0	0	0.0	A	11.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

SOUTH DAKOTA

American Lung Association in South Dakota

108 E. 38th Street, Suite 600
 Sioux Falls, SD 57105
 (605) 336-7222
www.lungusa.org/southdakota

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Brookings	30,056	5,647	3,195	484	1,947	956	409	7,516	1,352	3,942
Brown	35,204	7,900	5,847	678	2,102	1,226	660	10,678	2,064	3,455
Codington	26,168	6,492	3,884	557	1,511	879	461	7,571	1,455	2,952
Custer	7,924	1,648	1,611	141	466	310	184	2,831	565	830
Jackson	2,658	861	344	74	138	80	42	687	132	947
Meade	23,916	5,639	2,820	484	1,396	801	390	6,687	1,265	3,001
Minnehaha	183,048	44,151	22,596	3,787	10,768	5,940	2,881	49,379	9,282	18,519
Pennington	100,850	25,043	13,999	2,148	5,826	3,352	1,717	28,562	5,458	13,863
Union	14,589	3,643	1,977	312	833	492	253	4,208	807	889
Totals	424,413	101,024	56,273	8,664	24,988	14,036	6,997	118,119	22,380	48,398

HIGH OZONE DAYS 2007-2009

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

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
2	0	0	0.7	B	8.4	PASS
0	0	0	0.0	A	7.9	PASS
2	0	0	0.7	B	9.0	PASS
1	1	0	0.8	B	5.5	PASS
INC	INC	INC	INC	INC	4.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	9.4	PASS
1	0	0	0.3	B	7.4	PASS
INC	INC	INC	INC	INC	INC	INC

TENNESSEE

American Lung Association in Tennessee

One Vantage Way, Suite D-220
 Nashville, TN 37228
 (615) 329-1151
www.lungusa.org/tennessee

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Anderson	74,849	17,054	12,564	1,463	4,728	2,657	1,454	23,334	6,407	12,788
Blount	122,784	27,087	19,221	2,323	7,801	4,334	2,302	37,550	10,367	14,084
Davidson	635,710	141,156	68,368	12,106	39,563	20,509	9,339	165,921	46,893	104,427
Dyer	37,811	9,386	5,498	805	2,311	1,272	665	10,938	3,027	7,746
Hamilton	337,175	73,952	49,939	6,342	21,385	11,737	6,086	100,565	27,868	59,543
Haywood	18,881	4,929	2,564	423	1,136	631	327	5,411	1,504	3,973
Jefferson	51,722	11,302	8,044	969	3,287	1,810	953	15,610	4,311	10,109
Knox	435,725	94,839	57,195	8,134	27,512	14,743	7,263	123,426	34,471	62,028
Lawrence	41,314	10,345	6,822	887	2,526	1,403	765	12,285	3,366	7,341
Loudon	46,725	9,688	9,716	831	3,057	1,766	1,038	16,031	4,340	6,854
McMinn	52,739	12,143	8,425	1,041	3,311	1,841	988	16,017	4,411	9,439
Madison	97,317	24,129	12,390	2,069	5,916	3,190	1,583	26,805	7,483	19,273
Maury	84,302	20,347	10,923	1,745	5,179	2,814	1,408	23,741	6,626	12,235
Meigs	12,108	2,831	1,778	243	756	420	220	3,621	1,003	2,441
Montgomery	160,978	43,670	13,729	3,745	9,319	4,701	2,000	36,961	10,547	21,543
Putnam	72,431	16,110	10,915	1,382	4,551	2,442	1,253	20,781	5,741	14,823
Roane	53,508	11,057	9,509	948	3,483	1,979	1,099	17,507	4,799	7,281
Rutherford	257,048	66,819	21,656	5,731	15,135	7,690	3,278	60,554	17,308	31,121
Sevier	86,243	19,105	13,797	1,639	5,478	3,052	1,635	26,543	7,316	11,907
Shelby	920,232	250,454	93,716	21,480	53,867	28,569	13,336	233,910	66,100	188,373
Sullivan	154,552	32,227	28,112	2,764	10,025	5,663	3,160	50,171	13,716	27,049
Sumner	158,759	40,295	19,629	3,456	9,599	5,231	2,604	44,051	12,323	17,387
Williamson	176,838	49,953	16,570	4,284	10,261	5,577	2,624	45,919	13,037	9,431
Wilson	112,377	28,123	13,186	2,412	6,824	3,718	1,825	31,135	8,743	10,089
Totals	4,202,128	1,017,001	514,266	87,221	257,011	137,749	67,205	1,148,787	321,708	671,285

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Anderson	12	0	0	4.0	F
Blount	45	1	0	15.5	F
Davidson	13	1	0	4.8	F
Dyer	DNC	DNC	DNC	DNC	DNC
Hamilton	32	3	0	12.2	F
Haywood	INC	INC	INC	INC	INC
Jefferson	18	0	0	6.0	F
Knox	39	0	1	13.7	F
Lawrence	INC	INC	INC	INC	INC
Loudon	29	1	0	10.2	F
McMinn	DNC	DNC	DNC	DNC	DNC
Madison	DNC	DNC	DNC	DNC	DNC
Maury	DNC	DNC	DNC	DNC	DNC
Meigs	12	1	0	4.5	F
Montgomery	DNC	DNC	DNC	DNC	DNC
Putnam	INC	INC	INC	INC	INC
Roane	DNC	DNC	DNC	DNC	DNC
Rutherford	7	1	0	2.8	D
Sevier	53	0	0	17.7	F
Shelby	28	2	0	10.3	F
Sullivan	17	2	0	6.7	F
Sumner	33	1	0	11.5	F
Williamson	23	0	0	7.7	F
Wilson	24	0	0	8.0	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	12.9	PASS
8	0	0	2.7	D	11.8	PASS
3	0	0	1.0	C	10.7	PASS
6	0	0	2.0	C	12.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
14	0	0	4.7	F	13.0	PASS
3	0	0	1.0	C	10.1	PASS
5	0	0	1.7	C	13.7	PASS
3	0	0	1.0	C	12.9	PASS
4	0	0	1.3	C	10.6	PASS
2	0	0	0.7	B	10.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
9	0	0	3.0	D	11.5	PASS
1	0	0	0.3	B	11.3	PASS
1	1	0	0.8	B	12.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
7	0	0	2.3	D	11.3	PASS
2	0	0	0.7	B	12.0	PASS
4	0	0	1.3	C	11.5	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Texas

8150 Brookriver Drive, Suite S102
 Dallas, TX 75247
 (214) 631-5864
www.lungusa.org/texas

AT-RISK GROUPS

Lung Diseases

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardiovascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Bell	285,787	84,937	26,707	6,941	12,903	8,173	3,630	65,382	17,679	42,158
Bexar	1,651,448	462,341	171,115	37,782	76,691	49,708	22,999	404,882	110,000	285,469
Bowie	93,964	22,940	12,913	1,875	4,612	3,109	1,577	26,361	7,193	17,301
Brazoria	309,208	85,965	29,100	7,025	14,415	9,401	4,276	76,128	20,773	29,764
Brewster	9,481	1,822	1,369	149	496	331	165	2,785	758	1,545
Cameron	396,371	138,667	43,799	11,332	16,654	10,926	5,329	90,959	24,681	132,894
Collin	791,631	221,800	62,987	18,125	36,687	23,520	10,156	186,449	50,818	56,280
Dallas	2,451,730	690,205	211,073	56,403	113,137	71,545	30,972	566,836	153,584	450,082
Denton	658,616	179,866	41,492	14,699	30,676	19,110	7,626	146,787	39,857	56,409
Ector	134,625	40,702	13,763	3,326	6,062	3,947	1,842	32,267	8,774	22,328
Ellis	151,737	43,931	14,931	3,590	6,977	4,609	2,150	37,736	10,319	16,347
El Paso	751,296	236,119	79,541	19,296	33,260	21,688	10,265	178,318	48,436	174,651
Galveston	286,814	74,744	31,538	6,108	13,762	9,231	4,435	76,566	20,985	41,606
Gregg	119,637	32,206	16,450	2,632	5,679	3,831	1,962	32,613	8,890	17,441
Harris	4,070,989	1,174,860	328,354	96,009	186,211	118,470	51,005	937,343	254,761	686,928
Harrison	64,795	16,439	8,294	1,343	3,146	2,140	1,076	18,098	4,959	9,662
Hays	155,545	38,482	12,532	3,145	7,500	4,674	1,943	36,428	9,851	28,162
Hidalgo	741,152	270,620	70,444	22,115	30,255	19,278	8,868	156,390	42,227	258,259
Hood	51,462	11,257	10,133	920	2,645	1,909	1,107	17,226	4,730	5,874
Hunt	82,831	20,720	11,192	1,693	4,039	2,742	1,394	23,291	6,369	15,976

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Jefferson	243,237	60,160	31,643	4,916	11,874	7,946	3,954	66,812	18,221	43,356
Johnson	156,997	42,443	17,344	3,468	7,426	4,954	2,379	41,058	11,231	17,614
Kaufman	103,038	30,215	9,539	2,469	4,708	3,094	1,418	25,147	6,875	12,428
Kleberg	30,647	7,762	3,563	634	1,473	944	441	7,703	2,081	6,491
Lubbock	270,550	67,197	30,779	5,491	13,091	8,396	3,897	68,394	18,498	52,273
McLennan	233,378	59,806	28,536	4,887	11,210	7,327	3,531	60,684	16,465	50,871
Montgomery	447,718	124,444	45,430	10,169	20,949	13,943	6,569	114,679	31,411	49,974
Navarro	49,440	13,312	6,763	1,088	2,348	1,589	815	13,539	3,695	8,801
Nueces	323,046	86,795	37,483	7,093	15,313	10,207	4,955	84,947	23,200	63,272
Orange	81,816	20,731	11,258	1,694	3,979	2,726	1,403	23,287	6,379	12,624
Parker	114,919	29,364	13,094	2,400	5,563	3,771	1,840	31,501	8,651	10,990
Potter	121,816	34,009	14,995	2,779	5,673	3,718	1,814	30,957	8,396	26,250
Rockwall	81,391	24,011	7,625	1,962	3,712	2,444	1,127	19,914	5,446	5,314
Smith	204,665	52,774	29,819	4,313	9,869	6,675	3,464	57,142	15,566	32,316
Tarrant	1,789,900	507,390	155,996	41,464	82,590	53,033	23,400	423,856	115,329	254,582
Travis	1,026,158	246,456	70,474	20,140	49,782	30,363	11,890	231,110	62,284	160,747
Victoria	87,790	24,130	11,722	1,972	4,141	2,818	1,444	24,013	6,566	12,041
Webb	241,438	91,018	19,581	7,438	9,658	6,098	2,686	48,619	13,140	73,466
Totals	18,867,063	5,370,640	1,743,371	438,886	869,167	558,388	249,804	4,486,207	1,219,075	3,242,546

American Lung Association in Texas

8150 Brookriver Drive, Suite S102
 Dallas, TX 75247
 (214) 631-5864
www.lungusa.org/texas

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Bell	INC	INC	INC	INC	INC
Bexar	16	0	0	5.3	F
Bowie	DNC	DNC	DNC	DNC	DNC
Brazoria	24	2	0	9.0	F
Brewster	0	0	0	0.0	A
Cameron	0	0	0	0.0	A
Collin	20	0	0	6.7	F
Dallas	24	2	0	9.0	F
Denton	33	3	0	12.5	F
Ector	DNC	DNC	DNC	DNC	DNC
Ellis	9	0	0	3.0	D
El Paso	21	0	0	7.0	F
Galveston	13	3	0	5.8	F
Gregg	8	0	0	2.7	D
Harris	66	10	0	27.0	F
Harrison	0	0	0	0.0	A
Hays	1	0	0	0.3	B
Hidalgo	1	0	0	0.3	B
Hood	11	0	0	3.7	F
Hunt	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	11.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	INC	INC
0	0	0	0.0	A	11.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	11.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	8.1	PASS
1	0	0	0.3	B	10.8	PASS
11	0	0	3.7	F	10.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
7	0	0	2.3	D	14.1	PASS
0	0	0	0.0	A	10.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	10.9	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Jefferson	25	0	0	8.3	F
Johnson	23	0	0	7.7	F
Kaufman	6	0	0	2.0	C
Kleberg	INC	INC	INC	INC	INC
Lubbock	DNC	DNC	DNC	DNC	DNC
McLennan	4	0	0	1.3	C
Montgomery	8	0	0	2.7	D
Navarro	INC	INC	INC	INC	INC
Nueces	4	0	0	1.3	C
Orange	6	0	0	2.0	C
Parker	16	2	0	6.3	F
Potter	DNC	DNC	DNC	DNC	DNC
Rockwall	8	1	0	3.2	D
Smith	8	1	0	3.2	D
Tarrant	59	4	1	22.3	F
Travis	10	0	0	3.3	F
Victoria	1	0	0	0.3	B
Webb	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	11.0	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
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	10.5	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	6.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	10.9	PASS
0	0	0	0.0	A	9.1	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

American Lung Association in Utah

1930 South 1100 East
 Salt Lake City, UT 84106-2317
 (801) 484-4456
www.lungusa.org/utah

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Box Elder	49,902	16,648	5,376	1,211	2,645	1,425	691	11,847	2,326	4,748
Cache	115,269	35,491	8,905	2,582	6,320	3,075	1,246	23,661	4,328	18,744
Davis	300,827	101,475	24,522	7,382	15,813	8,115	3,541	64,496	12,189	21,001
Salt Lake	1,034,989	301,147	89,962	21,909	58,207	29,771	12,941	236,201	44,562	108,994
San Juan	15,049	5,010	1,542	364	798	424	201	3,494	680	4,181
Tooele	58,335	20,493	4,379	1,491	3,000	1,519	645	11,939	2,233	4,063
Uintah	31,536	10,323	2,873	751	1,684	873	394	7,033	1,344	3,139
Utah	545,307	189,454	35,179	13,783	28,166	13,467	5,204	101,731	18,281	75,993
Washington	137,473	40,470	24,297	2,944	7,751	4,327	2,436	38,370	7,883	19,260
Weber	231,834	68,148	24,145	4,958	13,003	6,814	3,162	55,547	10,722	28,582
Totals	2,520,521	788,659	221,180	57,376	137,387	69,810	30,461	554,319	104,548	288,705

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Box Elder	11	0	0	3.7	F
Cache	3	0	0	1.0	C
Davis	18	0	0	6.0	F
Salt Lake	30	1	0	10.5	F
San Juan	0	0	0	0.0	A
Tooele	7	0	0	2.3	D
Uintah	0	0	0	0.0	A
Utah	11	0	0	3.7	F
Washington	2	0	0	0.7	B
Weber	23	0	0	7.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
8	0	0	2.7	D	8.4	PASS
35	3	0	13.2	F	9.8	PASS
9	2	0	4.0	F	10.6	PASS
51	11	0	22.5	F	11.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
3	1	0	1.5	C	7.0	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
31	9	0	14.8	F	10.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
19	1	0	6.8	F	10.6	PASS

American Lung Association in Vermont

372 Hurricane Lane, Suite 101
 Williston, VT 05495
 (802) 876-6862
www.lungusa.org/vermont

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Bennington	36,411	7,313	6,953	741	2,820	1,369	778	12,243	2,039	4,498
Chittenden	152,313	30,597	15,891	3,099	12,224	5,115	2,324	41,394	6,396	15,392
Rutland	63,014	11,955	10,653	1,211	4,973	2,361	1,282	20,675	3,401	8,281
Totals	251,738	49,865	33,497	5,050	20,017	8,845	4,384	74,312	11,836	28,171

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Bennington	6	0	0	2.0	C
Chittenden	6	0	0	2.0	C
Rutland	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
0	0	0	0.0	A	7.3	PASS
0	0	0	0.0	A	7.9	PASS
1	0	0	0.3	B	10.4	PASS

American Lung Association in Virginia

9702 Gayton Road, #110
 Richmond, VA 23238
 (804) 955-4910
www.lungusa.org/virginia

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Albemarle	94,908	20,366	12,208	1,681	5,836	3,229	1,583	26,984	6,108	7,774
Arlington	217,483	35,785	18,697	2,953	14,237	7,043	2,818	53,986	11,628	13,988
Caroline	27,870	6,550	3,535	541	1,668	931	461	7,815	1,774	2,845
Charles City	7,217	1,324	1,311	109	461	283	159	2,522	591	735
Chesterfield	306,670	81,242	24,493	6,704	17,474	9,649	4,286	77,554	17,427	18,507
Fairfax	1,037,605	258,129	101,289	21,302	60,651	33,532	15,501	273,721	61,696	57,573
Fauquier	68,010	17,083	7,944	1,410	3,964	2,279	1,129	19,174	4,387	4,003
Frederick	74,972	19,213	8,532	1,586	4,352	2,430	1,177	20,222	4,585	6,796
Hanover	99,933	24,971	12,744	2,061	5,846	3,378	1,715	28,718	6,589	4,747
Henrico	296,415	70,539	37,707	5,821	17,691	9,798	4,830	82,070	18,589	29,165
Loudoun	301,171	89,850	19,156	7,415	16,434	8,548	3,486	66,255	14,533	10,069
Madison	13,702	2,937	2,401	242	845	503	280	4,454	1,035	1,456
Page	24,070	5,082	4,229	419	1,494	870	479	7,655	1,769	2,964
Prince William	379,166	110,941	25,325	9,155	20,850	10,962	4,550	85,580	18,861	22,535
Roanoke	91,011	21,199	14,502	1,749	5,468	3,228	1,750	28,248	6,541	5,379
Rockbridge	21,294	4,410	3,847	364	1,325	792	444	7,038	1,638	2,353
Rockingham	75,134	17,282	10,845	1,426	4,533	2,583	1,336	22,108	5,060	7,685
Stafford	124,166	36,249	8,095	2,991	6,818	3,647	1,529	28,619	6,346	5,764
Wythe	28,868	5,964	5,271	492	1,803	1,055	588	9,337	2,162	4,058

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Alexandria City	150,006	27,447	16,059	2,265	9,616	4,933	2,163	39,239	8,617	13,486
Bristol City	17,690	3,510	4,177	290	1,129	661	400	6,074	1,414	3,458
Hampton City	144,236	32,144	16,926	2,653	8,789	4,696	2,202	38,454	8,593	19,499
Lynchburg City	73,933	14,930	12,369	1,232	4,673	2,509	1,303	21,427	4,831	13,122
Newport News City	193,172	49,502	21,270	4,085	11,260	6,011	2,802	49,103	10,965	25,430
Norfolk City	233,333	54,515	23,197	4,499	14,033	7,169	3,125	56,876	12,468	37,917
Roanoke City	94,482	19,970	16,345	1,648	5,877	3,328	1,800	29,021	6,653	18,382
Salem City	25,462	5,058	4,367	417	1,607	912	489	7,926	1,817	2,240
Suffolk City	83,659	21,634	9,738	1,785	4,847	2,695	1,310	22,453	5,086	10,091
Virginia Beach City	433,575	106,502	46,020	8,789	25,574	13,775	6,376	112,294	25,128	28,889
Totals	4,739,213	1,164,328	492,599	96,085	279,154	151,429	70,071	1,234,927	276,888	380,910

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Alexandria City	14	0	0	4.7	F
Bristol City	DNC	DNC	DNC	DNC	DNC
Hampton City	INC	INC	INC	INC	INC
Lynchburg City	DNC	DNC	DNC	DNC	DNC
Newport News City	INC	INC	INC	INC	INC
Norfolk City	DNC	DNC	DNC	DNC	DNC
Roanoke City	DNC	DNC	DNC	DNC	DNC
Salem City	DNC	DNC	DNC	DNC	DNC
Suffolk City	14	0	0	4.7	F
Virginia Beach City	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	11.2	PASS
2	0	0	0.7	B	INC	INC
1	0	0	0.3	B	10.5	PASS
INC	INC	INC	INC	INC	INC	INC
6	2	0	3.0	D	11.5	PASS
3	0	0	1.0	C	11.5	PASS
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
8	3	0	4.2	F	10.7	PASS

WASHINGTON

American Lung Association in Washington

2625 Third Avenue
 Seattle, WA 98121-1213
 (206) 441-5100
www.lungusa.org/washington

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Asotin	21,432	4,738	4,102	324	1,478	780	446	6,988	1,513	3,189
Chelan	72,372	18,049	11,387	1,234	4,801	2,481	1,340	21,656	4,663	9,309
Clallam	71,413	13,256	16,751	906	5,185	2,846	1,739	26,334	5,744	9,986
Clark	432,002	113,146	48,530	7,737	28,008	13,816	6,653	114,652	24,397	50,559
King	1,916,441	408,363	205,002	27,923	131,958	63,737	29,348	518,698	109,820	184,782
Kittitas	39,532	7,124	4,893	487	2,815	1,334	618	10,856	2,296	7,545
Pierce	796,836	196,488	86,174	13,435	52,578	25,569	11,993	209,703	44,485	95,421
Skagit	119,534	28,477	18,438	1,947	8,035	4,118	2,190	35,692	7,673	13,060
Snohomish	694,571	171,462	68,364	11,724	45,931	22,398	10,328	182,585	38,690	66,458
Spokane	468,684	108,969	60,952	7,451	31,580	15,675	7,781	131,711	28,105	67,264
Thurston	250,979	56,937	31,719	3,893	17,068	8,503	4,198	71,325	15,217	27,352
Whatcom	200,434	41,941	25,982	2,868	13,875	6,804	3,315	56,676	12,066	30,351
Yakima	239,054	74,412	28,027	5,088	14,428	7,119	3,520	59,689	12,727	51,725
Totals	5,323,284	1,243,362	610,321	85,019	357,740	175,180	83,469	1,446,565	307,397	617,001

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Asotin	DNC	DNC	DNC	DNC	DNC
Chelan	DNC	DNC	DNC	DNC	DNC
Clallam	0	0	0	0.0	A
Clark	1	0	0	0.3	B
King	9	0	0	3.0	D
Kittitas	DNC	DNC	DNC	DNC	DNC
Pierce	4	0	0	1.3	C
Skagit	1	0	0	0.3	B
Snohomish	DNC	DNC	DNC	DNC	DNC
Spokane	0	0	0	0.0	A
Thurston	1	0	0	0.3	B
Whatcom	INC	INC	INC	INC	INC
Yakima	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
16	0	0	5.3	F	INC	INC
1	0	0	0.3	B	9.3	PASS
INC	INC	INC	INC	INC	INC	INC
16	0	0	5.3	F	9.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
24	1	0	8.5	F	8.9	PASS
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
12	0	0	4.0	F	9.7	PASS

WEST VIRGINIA

American Lung Association in West Virginia

415 Dickinson Street
 P.O. Box 3980
 Charleston, West Virginia 25339-3980
 (304) 342-6600
www.lungusa.org/westvirginia

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Berkeley	103,854	25,871	11,828	2,194	6,925	3,363	1,613	27,848	8,781	10,866
Brooke	23,509	4,577	4,557	388	1,659	885	503	7,912	2,504	3,075
Cabell	95,214	19,062	15,496	1,617	6,717	3,341	1,750	28,712	9,053	19,182
Greenbrier	34,527	7,163	6,403	607	2,401	1,279	721	11,387	3,605	6,361
Hancock	29,729	5,994	5,591	508	2,081	1,121	635	10,010	3,171	4,262
Harrison	68,911	15,401	11,099	1,306	4,713	2,432	1,306	21,169	6,692	12,049
Kanawha	191,663	40,727	31,882	3,454	13,286	6,903	3,738	60,336	19,080	27,060
Marion	56,706	11,268	9,665	956	4,001	2,039	1,096	17,741	5,602	9,461
Marshall	32,556	6,584	5,466	558	2,286	1,203	655	10,552	3,340	5,586
Monongalia	90,080	14,970	9,607	1,269	6,702	2,982	1,284	23,527	7,369	18,083
Ohio	44,015	8,797	8,541	746	3,086	1,642	934	14,674	4,643	5,813
Raleigh	79,187	16,530	12,442	1,402	5,526	2,829	1,495	24,454	7,729	14,258
Wood	86,888	18,768	14,966	1,592	5,990	3,124	1,712	27,448	8,680	14,110
Totals	936,839	195,712	147,543	16,597	65,373	33,143	17,442	285,770	90,248	150,166

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Berkeley	3	0	0	1.0	C
Brooke	DNC	DNC	DNC	DNC	DNC
Cabell	28	0	0	9.3	F
Greenbrier	3	0	0	1.0	C
Hancock	14	0	0	4.7	F
Harrison	DNC	DNC	DNC	DNC	DNC
Kanawha	17	0	0	5.7	F
Marion	DNC	DNC	DNC	DNC	DNC
Marshall	DNC	DNC	DNC	DNC	DNC
Monongalia	6	0	0	2.0	C
Ohio	13	0	0	4.3	F
Raleigh	DNC	DNC	DNC	DNC	DNC
Wood	15	0	0	5.0	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	14.0	PASS
12	0	0	4.0	F	14.4	PASS
5	0	0	1.7	C	14.3	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
9	0	0	3.0	D	13.4	PASS
1	0	0	0.3	B	12.5	PASS
12	0	0	4.0	F	14.4	PASS
2	0	0	0.7	B	13.6	PASS
16	0	0	5.3	F	13.4	PASS
4	0	0	1.3	C	12.7	PASS
5	0	0	1.7	C	13.2	PASS
1	0	0	0.3	B	11.0	PASS
5	0	0	1.7	C	13.7	PASS

American Lung Association in Wisconsin

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

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Ashland	16,181	3,764	2,518	261	1,202	561	298	4,862	1,094	2,788
Brown	247,319	59,726	28,167	4,136	18,540	8,045	3,834	66,432	14,436	25,782
Columbia	55,170	12,461	8,289	863	4,110	1,944	1,026	16,800	3,785	4,907
Dane	491,357	102,412	48,449	7,091	39,130	16,007	7,071	127,929	27,017	62,188
Dodge	87,335	18,868	12,335	1,306	6,666	3,042	1,553	25,896	5,760	7,342
Door	27,815	5,023	6,142	348	2,111	1,124	675	10,329	2,425	2,110
Eau Claire	99,409	20,526	12,733	1,421	7,901	3,311	1,582	27,319	5,889	14,672
Florence	4,554	767	919	53	349	187	109	1,698	397	636
Fond Du Lac	100,070	22,607	14,679	1,565	7,522	3,467	1,801	29,740	6,648	9,103
Forest	9,605	2,060	2,078	143	715	360	215	3,290	765	1,505
Grant	48,965	10,352	7,945	717	3,777	1,715	907	14,807	3,310	6,261
Jefferson	80,833	18,566	10,594	1,286	6,098	2,731	1,363	23,005	5,076	8,104
Kenosha	165,382	42,098	18,362	2,915	12,174	5,293	2,519	43,693	9,497	20,693
Kewaunee	20,315	4,635	3,239	321	1,503	720	389	6,289	1,426	1,544
La Crosse	113,679	23,781	14,621	1,647	8,945	3,822	1,846	31,699	6,879	13,864
Manitowoc	80,583	17,834	13,062	1,235	6,003	2,895	1,568	25,322	5,751	7,338
Marathon	131,612	31,686	18,545	2,194	9,689	4,479	2,316	38,347	8,570	13,394
Milwaukee	959,521	241,292	109,505	16,708	71,568	30,360	14,368	249,703	53,900	192,170
Oneida	35,930	6,492	7,968	450	2,743	1,440	863	13,209	3,094	3,808

AT-RISK GROUPS

County	Total Population	Under 18	65 & Over	Lung Diseases				Cardio-vascular Disease	Diabetes	Poverty
				Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema			
Outagamie	177,155	43,368	21,675	3,003	13,157	5,810	2,845	48,540	10,641	15,099
Ozaukee	86,311	20,137	12,866	1,394	6,290	3,074	1,641	26,738	6,074	4,361
Racine	200,601	49,688	25,585	3,441	14,673	6,702	3,368	56,677	12,574	24,279
Rock	160,155	39,195	21,606	2,714	11,813	5,344	2,713	45,360	10,060	20,278
St. Croix	83,351	21,576	8,336	1,494	6,096	2,645	1,228	21,617	4,676	5,223
Sauk	58,922	13,751	8,910	952	4,362	2,046	1,081	17,687	3,979	5,050
Sheboygan	114,560	26,893	16,332	1,862	8,489	3,939	2,042	33,766	7,556	10,055
Taylor	19,222	4,503	3,106	312	1,408	680	370	5,955	1,354	2,412
Vernon	29,324	7,650	4,831	530	2,063	1,012	562	8,958	2,049	4,509
Vilas	21,496	3,697	5,598	256	1,641	894	566	8,420	2,000	2,512
Walworth	100,593	22,823	13,446	1,580	7,618	3,412	1,710	28,795	6,358	12,777
Washington	130,681	31,063	17,309	2,151	9,621	4,481	2,283	38,147	8,518	7,355
Waukesha	383,154	89,803	55,072	6,218	28,064	13,458	7,074	116,215	26,237	18,548
Totals	4,341,160	1,019,097	554,822	70,565	326,041	145,000	71,786	1,217,244	267,795	530,667

WISCONSIN

American Lung Association in Wisconsin

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

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Ashland	0	0	0	0.0	A
Brown	6	0	0	2.0	C
Columbia	5	0	0	1.7	C
Dane	5	0	0	1.7	C
Dodge	3	0	0	1.0	C
Door	23	0	0	7.7	F
Eau Claire	DNC	DNC	DNC	DNC	DNC
Florence	2	0	0	0.7	B
Fond Du Lac	2	0	0	0.7	B
Forest	1	0	0	0.3	B
Grant	DNC	DNC	DNC	DNC	DNC
Jefferson	5	0	0	1.7	C
Kenosha	14	0	0	4.7	F
Kewaunee	16	0	0	5.3	F
La Crosse	INC	INC	INC	INC	INC
Manitowoc	19	0	0	6.3	F
Marathon	2	0	0	0.7	B
Milwaukee	11	0	0	3.7	F

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
1	0	0	0.3	B	6.0	PASS
17	0	0	5.7	F	11.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
16	0	0	5.3	F	12.4	PASS
2	0	0	0.7	B	10.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
INC	INC	INC	INC	INC	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	6.7	PASS
7	0	0	2.3	D	12.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	12.2	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
6	0	0	2.0	C	11.4	PASS
2	0	0	0.7	B	10.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
12	1	0	4.5	F	13.1	PASS

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Oneida	1	0	0	0.3	B
Outagamie	3	0	0	1.0	C
Ozaukee	13	0	0	4.3	F
Racine	10	0	0	3.3	F
Rock	7	0	0	2.3	D
St. Croix	3	0	0	1.0	C
Sauk	2	0	0	0.7	B
Sheboygan	24	0	0	8.0	F
Taylor	DNC	DNC	DNC	DNC	DNC
Vernon	2	0	0	0.7	B
Vilas	1	0	0	0.3	B
Walworth	4	0	0	1.3	C
Washington	0	0	0	0.0	A
Waukesha	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
DNC	DNC	DNC	DNC	DNC	DNC	DNC
9	0	0	3.0	D	11.0	PASS
4	0	0	1.3	C	11.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
4	0	0	1.3	C	10.3	PASS
5	0	0	1.7	C	10.4	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	8.8	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
1	0	0	0.3	B	6.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
DNC	DNC	DNC	DNC	DNC	DNC	DNC
5	0	0	1.7	C	13.2	PASS

American Lung Association in Wyoming

825 Helena Avenue
 Helena, MT 59601-3459
 (406) 442-6556
www.lungusa.org/wyoming

AT-RISK GROUPS

County	Total Population			Lung Diseases				Cardio-vascular Disease		
	Total	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	Chronic Bronchitis	Emphysema	Diabetes	Poverty	
Albany	33,979	5,576	2,899	334	2,600	1,073	417	8,116	1,439	5,881
Campbell	43,967	12,348	2,446	740	2,858	1,293	519	9,976	1,861	2,817
Carbon	15,720	3,788	1,985	227	1,056	532	267	4,493	854	1,754
Converse	13,578	3,359	1,656	201	903	458	229	3,866	737	1,195
Crook	6,653	1,518	1,175	91	447	244	137	2,171	418	544
Fremont	38,719	10,026	5,633	601	2,528	1,296	683	11,191	2,125	5,551
Laramie	88,854	21,562	11,294	1,293	5,984	2,925	1,446	24,534	4,610	8,927
Natrona	74,508	18,175	9,071	1,090	5,014	2,441	1,192	20,366	3,828	6,905
Park	27,976	5,879	4,798	352	1,933	1,027	565	9,044	1,730	2,803
Sheridan	29,163	6,523	4,501	391	1,989	1,036	552	9,000	1,718	2,673
Sublette	8,792	2,255	771	135	583	284	130	2,311	440	504
Sweetwater	41,226	11,501	3,432	690	2,666	1,253	556	10,054	1,886	2,939
Teton	20,710	3,935	1,838	236	1,515	684	291	5,386	995	1,199
Uinta	20,927	6,431	1,707	386	1,296	621	280	5,019	948	1,853
Totals	464,772	112,876	53,206	6,767	31,372	15,167	7,264	125,527	23,587	45,545

HIGH OZONE DAYS 2007-2009

County	Orange	Red	Purple	Wgt. Avg	Grade
Albany	DNC	DNC	DNC	DNC	DNC
Campbell	4	0	0	1.3	C
Carbon	INC	INC	INC	INC	INC
Converse	DNC	DNC	DNC	DNC	DNC
Crook	INC	INC	INC	INC	INC
Fremont	1	0	0	0.3	B
Laramie	DNC	DNC	DNC	DNC	DNC
Natrona	DNC	DNC	DNC	DNC	DNC
Park	DNC	DNC	DNC	DNC	DNC
Sheridan	DNC	DNC	DNC	DNC	DNC
Sublette	9	4	1	5.7	F
Sweetwater	0	0	0	0.0	A
Teton	1	0	0	0.3	B
Uinta	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2007-2009

24 Hour					Annual	
Orange	Red	Purple	Wgt. Avg	Grade	Design Value	Pass/Fail
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	5.6	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
0	0	0	0.0	A	3.7	PASS
DNC	DNC	DNC	DNC	DNC	DNC	DNC
2	0	0	0.7	B	7.8	PASS
0	0	0	0.0	A	4.2	PASS
INC	INC	INC	INC	INC	INC	INC
INC	INC	INC	INC	INC	INC	INC
1	0	0	0.3	B	8.6	PASS
1	0	0	0.3	B	INC	INC
INC	INC	INC	INC	INC	INC	INC
0	0	0	0.0	A	INC	INC
DNC	DNC	DNC	DNC	DNC	DNC	DNC

About the American Lung Association

Now in its second century, the American Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease. With your generous support, the American Lung Association is “Fighting for Air” through research, education and advocacy. For more information about the American Lung Association, a Charity Navigator Four Star Charity and holder of the Better Business Bureau Wise Giving Guide Seal, or to support the work it does, call 1-800-LUNG-USA (1-800-586-4872) or visit www.LungUSA.org.

