

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.

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.

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