California Section

with Introduction

# 2012

# The States View of the Air Quality

Keith Baugues,

Assistant Commissioner

Office of Air Quality, IDEM

State of Indiana

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# THE STATE VIEW OF THE AIR – 2012

Every year the American Lung Association (ALA) produces a report called "The State of the Air." The report focuses on a recent three year period of data for ozone and fine particles (PM-2.5) to determine how states and cities compare. While we appreciate the effort, the grading system that ALA uses to rate counties and cities is not consistent with the form of the national ambient air quality standards (NAAQS) for ozone and PM-2.5.

This report starts with the same data used by the ALA. For this report it includes data for the period 2008 – 2010. The review of data in this report differs from ALA in a few significant ways. First, the design values used for both ozone and PM-2.5 are based on average values for each county. This is an important distinction. While EPA's guidance for attainment/nonattainment designation purposes focuses on the worst design value for a county, this is not consistent with what people are breathing. For example, if a county has ten monitors and nine are below the standard and one is slightly above the standard, EPA and ALA would assume that everyone in the county were breathing air at levels above the standard. That is obviously not correct. If you combine counties into metropolitan statistical areas (cities) consisting of several counties, the entire area would be assumed to be above the standard based on the one monitor described above. This report averages design values for all monitors in a county to determine the average level that is breathed by the residents of that county.

A second difference is that when design values for a number of counties are being grouped to determine the overall value for a state or a metropolitan statistical area, the individual design values for each county are weighted by the population of each county to determine a population weighted average. This value is more consistent with what the population is being exposed to.
A new grading system has been established for ozone and PM-2.5 in this report. Any grading system is arbitrary in nature. The key to this grading system is that any area meeting the national ambient air quality standards should not be rated lower than a "C". In essence, we have set the standard as a "C". Any level between 90 and 100% of the standard is rated as "C". Any level between 80 and 90% of the standard is rated a "B". Any level below 80% is set as an "A". Any level between 101 and 110% is set as a "D". Any level above 110% of the standard is rated as an "F". This translates into the following ranges:

| Grade | Ozone (ppm) | 24-hr PM-2.5 (µg/m3) | Annual PM-2.5 (µg/m3) |
|---|---|---|---|
| **A** | < 0.060 | < 28.0 | <12.0 |
| **B** | 0.060 – 0.067 | 28.0 – 31.4 | 12.0 – 13.4 |
| **C** | 0.068 – 0.075 | 31.5 – 35.0 | 13.5 – 15.0 |
| **D** | 0.076 – 0.082 | 35.1 – 38.5 | 15.1 – 16.5 |
| **F** | ➢ 0.082 | ➢ 38.5 | ➢ 16.5 |

One other difference than the ALA report are the county, city and state totals for population groups (under 18, 65 and over, etc.). We do not have access to the data used by ALA. To estimate values for this report we have scaled up the values based on total county populations for 2010 versus those used in the previous ALA report. This provides an estimate of these values that while not totally accurate, will at least be within reason.

The remainder of this report provides similar tables to those contained in the ALA reports.

## People at Risk from Short-Term Particle Pollution (24-Hour PM-2.5)

| | Chronic Diseases | | | | | | | Age Groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Counties Grade | Adult Asthma | Pediatric Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty | Under 18 | 65 and Over | Total Population | No. of Counties |
| A | 9,798,058 | 3,212,025 | 4,994,646 | 2,483,890 | 41,733,500 | 10,254,790 | 20,578,475 | 37,003,246 | 19,019,771 | 152,377,980 | 505 |
| B | 3,157,148 | 979,404 | 1,605,306 | 751,929 | 12,647,775 | 3,148,875 | 7,229,176 | 11,665,963 | 5,748,640 | 47,871,967 | 80 |
| C | 299,982 | 84,237 | 150,209 | 82,127 | 1,269,466 | 288,807 | 514,743 | 1,035,677 | 605,595 | 4,422,808 | 19 |
| D | 280,611 | 87,417 | 145,584 | 68,500 | 1,194,673 | 265,207 | 633,125 | 1,257,021 | 513,463 | 4,702,274 | 13 |
| F | 304,752 | 109,996 | 159,265 | 72,621 | 1,289,218 | 312,461 | 957,154 | 1,623,364 | 529,960 | 5,457,247 | 15 |
| Subtotals | 13,840,551 | 4,473,079 | 7,055,010 | 3,459,067 | 58,134,532 | 14,270,140 | 29,912,673 | 52,585,271 | 26,417,249 | 214,832,276 | 632 |
| Not Monitored | 5,796,658 | 1,957,587 | 3,022,435 | 1,809,788 | 25,340,244 | 6,340,454 | 12,138,789 | 22,418,015 | 11,456,284 | 92,933,152 | 2511 |
| Totals | **19,637,209** | **6,430,666** | **10,077,445** | **5,268,855** | **83,474,776** | **20,610,594** | **42,051,462** | **75,003,286** | **37,873,713** | **307,765,428** | **3143** |

## People at Risk from Year-Round Particle Pollution (Annual PM-2.5)

| | Chronic Diseases | | | | | | | Age Groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Counties Grade | Adult Asthma | Pediatric Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty | Under 18 | 65 and Over | Total Population | No. of Counties |
| A | 11,292,718 | 3,644,843 | 5,751,012 | 2,827,082 | 48,309,482 | 11,525,650 | 23,771,951 | 42,753,385 | 21,554,899 | 174,585,715 | 551 |
| B | 2,347,225 | 759,276 | 1,204,123 | 585,472 | 9,009,323 | 2,533,382 | 5,506,129 | 8,871,717 | 4,516,513 | 36,908,911 | 74 |
| C | 163,813 | 55,278 | 80,703 | 37,748 | 660,475 | 171,856 | 499,650 | 754,461 | 281,257 | 2,670,036 | 4 |
| D | 36,795 | 13,682 | 19,172 | 8,765 | 155,352 | 39,252 | 134,943 | 205,708 | 64,760 | 667,614 | 3 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotals | 13,840,551 | 4,473,079 | 7,055,010 | 3,459,067 | 58,134,632 | 14,270,140 | 29,912,673 | 52,585,271 | 26,417,429 | 214,832,276 | 632 |
| Not Monitored | 5,796,658 | 1,957,587 | 3,032,435 | 1,809,788 | 25,340,244 | 6,340,454 | 12,138,789 | 22,418,015 | 11,456,284 | 92,933,152 | 2511 |
| Totals | **19,637,209** | **6,430,666** | **10,077,445** | **5,268,855** | **83,474,776** | **20,610,594** | **42,051,462** | **75,003,226** | **37,873,713** | **307,765,428** | **3143** |

## People at Risk from Ozone

| | Chronic Diseases | | | | | | | Age Groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Counties Grade | Adult Asthma | Pediatric Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty | Under 18 | 65 and Over | Total Population | No. of Counties |
| A | 1,077,164 | 237,613 | 521,287 | 251,726 | 4,187,906 | 954,741 | 1,809,956 | 3,462,483 | 1,846,532 | 15,225,948 | 66 |
| B | 3,318,589 | 1,038,125 | 1,729,038 | 868,700 | 14,272,823 | 3,506,578 | 7,414,134 | 12,202,079 | 7,051,967 | 51,515,674 | 244 |
| C | 6,917,558 | 2,276,969 | 3,415,392 | 1,680,074 | 28,446,571 | 7,007,141 | 14,360,609 | 25,534,355 | 12,829,210 | 104,026,444 | 359 |
| D | 2,704,652 | 978,740 | 1,426,567 | 690,960 | 11,997,856 | 3,016,513 | 5,547,106 | 11,346,714 | 5,151,453 | 45,277,509 | 77 |
| F | 496,653 | 176,933 | 264,002 | 124,293 | 2,167,205 | 560,749 | 1,384,287 | 2,550,474 | 925,985 | 8,775,283 | 13 |
| Subtotals | 14,514,616 | 4,708,380 | 7,356,286 | 3,615,753 | 61,072,361 | 15,045,722 | 30,516,092 | 55,096,105 | 27,805,147 | 224,820,858 | 759 |
| Not Monitored | 5,192,208 | 1,749,204 | 2,769,594 | 1,680,255 | 22,768,048 | 5,588,603 | 11,706,248 | 20,180,458 | 10,181,968 | 82,944,570 | 2384 |
| Totals | **19,706,824** | **6,457,584** | **10,125,860** | **5,296,008** | **83,840,409** | **20,634,325** | **42,222,340** | **75,276,563** | **37,987,115** | **307,762,428** | **3143** |

**Footnote – The totals for these three tables should agree. However, due to the methodology used in estimating values there are small differences.**

## People at Risk in 25 U.S. Cities Most Polluted by Year-Round Particle Pollution (Annual PM-2.5)

| Rank | MSA | PW DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Visalia, CA | 16.49 | D | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **2** | Hanford, CA | 15.19 | D | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **3** | Bakersfield, CA | 15.01 | C | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **4** | Fresno, CA | 14.49 | C | 930,450 | 280,483 | 91,013 | 18,666 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **5** | Fairbanks, AK | 13.58 | C | 97,581 | 25,360 | 6,103 | 1,756 | 6,411 | 2,868 | 1,133 | 21,942 | 3,781 | 7,339 |
| **6** | Indianapolis, IN | 13.38 | B | 1,756,241 | 455,802 | 189,748 | 44,818 | 118,388 | 55,311 | 26,078 | 454,598 | 114,917 | 239,821 |
| **7** | Canton, OH | 13.28 | B | 404,422 | 92,335 | 64,121 | 8,657 | 30,507 | 14,202 | 7,612 | 123,557 | 33,218 | 58,385 |
| **8** | Merced, CA | 13.21 | B | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **9** | Modesto, CA | 13.19 | B | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **10** | Parkersburg, WV | 13.08 | B | 166,056 | 34,509 | 27,715 | 3,042 | 11,672 | 5,850 | 3,201 | 51,337 | 15,297 | 24,560 |
| **11** | Louisville, KY | 12.99 | B | 1,284,068 | 305,015 | 164,651 | 29,059 | 97,357 | 42,845 | 21,804 | 348,896 | 108,876 | 181,647 |
| **12** | Dayton, OH | 12.87 | B | 841,502 | 191,195 | 124,245 | 17,828 | 64,083 | 28,970 | 15,043 | 248,328 | 66,777 | 118,836 |
| **13** | Steubenville, OH | 12.82 | B | 124,454 | 24,957 | 23,558 | 2,241 | 9,214 | 4,668 | 2,643 | 41,663 | 12,087 | 19,414 |
| **14** | Springfield, OH | 12.76 | B | 138,333 | 32,404 | 22,450 | 3,039 | 10,343 | 4,823 | 2,609 | 42,122 | 11,330 | 21,918 |
| **15** | Lancaster, PA | 12.61 | B | 519,445 | 128,836 | 77,697 | 3,272 | 35,389 | 17,473 | 9,195 | 150,651 | 35,196 | 47,468 |
| **16** | Johnstown, PA | 12.56 | B | 143,679 | 28,333 | 27,050 | 2,919 | 10,247 | 5,350 | 3,004 | 47,536 | 11,207 | 20,944 |
| **17** | Charleston, WV | 12.51 | B | 304,284 | 64,242 | 49,625 | 5,448 | 21,146 | 10,888 | 5,870 | 94,698 | 29,932 | 45,098 |
| **18** | Columbus, GA | 12.50 | B | 294,865 | 76,858 | 34,736 | 7,412 | 15,273 | 9,288 | 4,475 | 79,561 | 22,004 | 50,307 |
| **19** | Akron, OH | 12.46 | B | 703,200 | 157,482 | 97,773 | 14,766 | 53,927 | 24,242 | 12,356 | 206,194 | 55,422 | 100,565 |
| **19** | Rome, GA | 12.46 | B | 96,317 | 24,227 | 13,793 | 2,390 | 4,939 | 3,166 | 1,631 | 27,025 | 7,705 | 18,183 |
| **21** | Pittsburgh, PA | 12.36 | B | 2,356,285 | 478,197 | 403,062 | 48,967 | 167,754 | 85,721 | 46,570 | 750,529 | 176,069 | 279,645 |
| **22** | Evansville, IN | 12.34 | B | 358,676 | 82,760 | 51,134 | 8,042 | 25,463 | 12,286 | 6,373 | 104,843 | 28,142 | 46,444 |
| **23** | Albany, GA | 12.30 | B | 157,308 | 41,882 | 17,746 | 4,132 | 7,880 | 4,900 | 2,338 | 17,412 | 11,287 | 34,994 |
| **24** | Bloomington, IN | 12.28 | B | 192,714 | 35,845 | 22,327 | 3,504 | 14,267 | 6,355 | 2,859 | 51,066 | 12,476 | 35,557 |
| **25** | Atlanta, GA | 12.27 | B | 5,268,860 | 1,415,305 | 443,741 | 139,603 | 257,034 | 157,220 | 69,493 | 1,258,335 | 347,098 | 738,114 |

MSA – Metropolitan Statistical Area

PW DV – Population Weighted Design Value

## People at Risk in 25 U.S. Cities Most Polluted by Short-term Particle Pollution (24-hour PM-2.5)

| Rank | MSA | PW DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Fairbanks, AK | 62.7 | F | 97,581 | 25,360 | 6,103 | 1,756 | 6,411 | 2,868 | 1,133 | 21,942 | 3,781 | 7,339 |
| **2** | Visalia, CA | 50.8 | F | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **3** | Hanford, CA | 49.3 | F | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **4** | Fresno, CA | 47.5 | F | 930,450 | 280,483 | 91,013 | 18,666 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **5** | Modesto, CA | 46.3 | F | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **6** | Stockton, CA | 45.5 | F | 685,306 | 205,264 | 69,235 | 13,617 | 37,672 | 20,291 | 9,474 | 166,020 | 42,527 | 105,383 |
| **7** | Merced, CA | 44.9 | F | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **8** | Logan, UT | 42.9 | F | 125,442 | 38,143 | 10,171 | 2,682 | 6,954 | 3,405 | 1,410 | 26,437 | 4,961 | 20,064 |
| **9** | Bakersfield, CA | 42.4 | F | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **10** | Salt Lake City, UT | 41.0 | F | 1,124,197 | 331,402 | 97,066 | 24,110 | 62,882 | 32,141 | 13,958 | 254,901 | 48,071 | 116,632 |
| **11** | Ogden, UT | 37.5 | D | 547,184 | 174,314 | 49,900 | 12,681 | 29,595 | 15,326 | 6,877 | 123,198 | 23,506 | 50,984 |
| **12** | Provo, UT | 37.2 | D | 526,810 | 182,673 | 34,227 | 13,290 | 27,241 | 13,041 | 5,054 | 98,627 | 17,744 | 73,157 |
| **13** | Reno, NV | 36.8 | D | 425,417 | 103,923 | 51,882 | 7,183 | 28,680 | 13,968 | 6,836 | 116,689 | 25,810 | 55,215 |
| **14** | Yuba City, CA | 36.4 | D | 166,892 | 44,658 | 20,336 | 2,961 | 9,610 | 5,257 | 2,575 | 43,874 | 11,539 | 23,917 |
| **15** | Green Bay, WI | 35.4 | D | 306,241 | 73,431 | 36,347 | 5,085 | 22,944 | 10,055 | 4,863 | 85,584 | 18,247 | 32,007 |
| **16** | Lima, OH | 35.2 | D | 106,331 | 25,394 | 15,738 | 2,431 | 7,903 | 3,606 | 1,892 | 31,062 | 8,353 | 19,106 |
| **17** | Grand Junction, CO | 34.5 | C | 146,723 | 35,209 | 21,020 | 3,894 | 9,054 | 4,956 | 2,561 | 42,398 | 7,143 | 16,982 |
| **18** | Appleton, WI | 33.5 | C | 225,666 | 55,492 | 28,257 | 3,842 | 17,026 | 7,530 | 3,697 | 65,618 | 13,819 | 21,282 |
| **19** | Sacramento, CA | 32.8 | C | 2,149,127 | 538,541 | 256,140 | 35,724 | 126,211 | 69,480 | 33,713 | 578,075 | 152,514 | 282,463 |
| **20** | Lancaster, PA | 32.7 | C | 519,445 | 128,836 | 77,697 | 3,272 | 35,389 | 17,473 | 9,195 | 150,651 | 35,196 | 47,468 |
| **20** | Minneapolis, MN | 32.7 | C | 3,278,833 | 798,729 | 351,455 | 55,564 | 156,235 | 159,765 | 49,736 | 872,233 | 151,267 | 327,826 |
| **22** | Harrisburg, PA | 32.5 | C | 549,475 | 119,962 | 80,180 | 12,358 | 38,962 | 19,174 | 9,907 | 164,056 | 38,251 | 51,942 |
| **23** | Milwaukee, WI | 32.4 | C | 1,555,908 | 381,215 | 194,547 | 26,396 | 115,251 | 51,281 | 25,336 | 430,154 | 94,612 | 220,480 |
| **24** | Canton, OH | 31.7 | C | 404,422 | 92,335 | 64,121 | 8,657 | 30,507 | 14,202 | 7,612 | 123,557 | 33,218 | 58,385 |
| **25** | Waterloo, IA | 31.5 | C | 167,819 | 36,865 | 24,421 | 1,757 | 8,884 | 5,683 | 2,886 | 52,041 | 9,531 | 24,935 |

MSA – Metropolitan Statistical Area
PW DV – Population Weighted Design Value

## People at Risk in 25 Most Ozone-Polluted Cities

| Rank | MSA | PW DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Hanford, CA | 0.095 | F | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **2** | Visalia, CA | 0.094 | F | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **3** | Merced, CA | 0.092 | F | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **4** | Fresno, CA | 0.091 | F | 930,450 | 280,483 | 91,013 | 18,666 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **5** | Bakersfield, CA | 0.090 | F | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **5** | Riverside, CA | 0.090 | F | 4,224,851 | 1,250,542 | 427,278 | 82,292 | 234,115 | 125,263 | 58,069 | 1,021,421 | 266,893 | 636,999 |
| **7** | Madera, CA | 0.088 | F | 150,865 | 44,301 | 15,651 | 2,938 | 8,357 | 4,498 | 2,107 | 36,843 | 9,646 | 29,141 |
| **8** | Modesto, CA | 0.087 | F | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **9** | Sacramento, CA | 0.081 | D | 2,149,127 | 538,541 | 256,140 | 35,724 | 126,211 | 69,480 | 33,713 | 578,075 | 152,514 | 282,463 |
| **10** | Bridgeport, CT | 0.079 | D | 916,809 | 227,599 | 114,237 | 27,288 | 64,598 | 30,616 | 15,536 | 259,942 | 45,593 | 73,544 |
| **10** | Trenton, NJ | 0.079 | D | 366,513 | 84,052 | 45,785 | 7,647 | 21,797 | 12,021 | 5,953 | 101,743 | 23,624 | 37,390 |
| **12** | Sheboygan, WI | 0.078 | D | 115,507 | 27,115 | 16,467 | 1,877 | 8,559 | 3,975 | 2,059 | 34,045 | 7,618 | 10,138 |
| **13** | Atlanta, GA | 0.077 | D | 5,268,860 | 1,415,305 | 443,741 | 139,603 | 257,034 | 157,220 | 69,493 | 1,258,335 | 347,098 | 738,114 |
| **13** | Dallas, TX | 0.077 | D | 6,371,803 | 1,788,298 | 545,339 | 146,138 | 295,248 | 188,693 | 82,443 | 1,501,838 | 408,262 | 894,433 |
| **13** | Houston, TX | 0.077 | D | 5,946,800 | 1,697,131 | 511,409 | 138,688 | 273,697 | 175,704 | 77,329 | 1,402,897 | 381,376 | 950,838 |
| **13** | Philadelphia, PA | 0.077 | D | 5,965,343 | 1,401,102 | 790,322 | 145,071 | 381,265 | 199,853 | 100,074 | 1,685,896 | 390,104 | 701,153 |
| **13** | Reading, PA | 0.077 | D | 411,442 | 98,134 | 59,112 | 10,110 | 28,464 | 13,944 | 7,213 | 119,333 | 27,821 | 48,287 |
| **13** | Stockton, CA | 0.077 | D | 685,306 | 205,264 | 69,235 | 13,617 | 37,672 | 20,291 | 9,474 | 166,020 | 42,527 | 105,383 |
| **19** | Greensboro, NC | 0.076 | D | 723,801 | 172,159 | 91,959 | 14,821 | 43,079 | 23,333 | 11,759 | 199,950 | 52,986 | 116,061 |
| **19** | Lancaster, PA | 0.076 | D | 519,445 | 128,836 | 77,697 | 3,272 | 35,389 | 17,473 | 9,195 | 150,651 | 35,196 | 47,468 |
| **19** | Los Angeles, CA | 0.076 | D | 12,828,837 | 3,244,796 | 1,385,675 | 215,243 | 751,647 | 402,312 | 186,928 | 3,283,448 | 857,664 | 1,863,994 |
| **19** | Norwich, CT | 0.076 | D | 274,055 | 59,691 | 38,403 | 7,155 | 20,083 | 9,541 | 4,867 | 81,194 | 14,263 | 20,664 |
| **19** | Richmond, VA | 0.076 | D | 1,258,251 | 312,992 | 133,828 | 25,830 | 73,777 | 40,679 | 19,155 | 334,409 | 75,414 | 97,713 |
| **19** | Spartanburg, SC | 0.076 | D | 284,307 | 69,281 | 39,179 | 5,941 | 16,872 | 9,474 | 4,826 | 80,515 | 22,459 | 41,116 |
| **19** | Vineland, NJ | 0.076 | D | 156,898 | 38,997 | 19,763 | 3,548 | 9,095 | 5,067 | 2,485 | 42,317 | 9,860 | 23,673 |

MSA – Metropolitan Statistical Area
PW DV – Population Weighted Design Value

## People at Risk in 25 Counties Most Polluted by Short-term Particle Pollution (24-hour PM-2.5)

| Rank | County/State | DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Fairbanks, AK | 62.7 | F | 97,581 | 25,360 | 6,103 | 1,756 | 6,411 | 2,868 | 1,133 | 21,942 | 3,781 | 7,339 |
| **2** | Santa Cruz, AZ | 61.7 | F | 47,420 | 15,030 | 6,580 | 1,226 | 3,454 | 1,470 | 784 | 12,758 | 3,000 | 11,812 |
| **3** | Butte, CA | 50.9 | F | 220,000 | 46,080 | 32,915 | 3,057 | 13,558 | 7,623 | 3,910 | 64,936 | 17,126 | 39,613 |
| **4** | Tulare, CA | 50.8 | F | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **5** | Kings, CA | 49.3 | F | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **6** | Fresno, CA | 47.5 | F | 930,450 | 280,483 | 91,013 | 18,606 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **7** | Stanislaus, CA | 46.3 | F | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **8** | Franklin, ID | 45.6 | F | 12,786 | 4,408 | 1,563 | 203 | 695 | 366 | 187 | 3,112 | 693 | 1,349 |
| **9** | San Joaquin, CA | 45.5 | F | 685,306 | 205,264 | 69,235 | 13,617 | 37,672 | 20,291 | 9,474 | 166,020 | 42,527 | 105,383 |
| **10** | Klamath, OR | 45.0 | F | 66,380 | 15,362 | 10,876 | 863 | 5,588 | 2,339 | 1,271 | 20,472 | 4,507 | 13,124 |
| **11** | Merced, CA | 44.9 | F | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **12** | Cache, UT | 42.6 | F | 112,656 | 34,686 | 8,703 | 2,523 | 6,177 | 3,005 | 1,218 | 23,125 | 4,230 | 18,319 |
| **13** | Box Elder, UT | 42.5 | F | 49,975 | 16,672 | 5,384 | 1,213 | 2,649 | 1,427 | 692 | 11,864 | 2,329 | 4,755 |
| **14** | Kern, CA | 42.4 | F | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **15** | Salt Lake, UT | 41.9 | F | 1,029,655 | 299,595 | 89,498 | 21,796 | 57,907 | 29,618 | 12,874 | 234,984 | 44,332 | 108,432 |
| **16** | Pierce, WA | 37.9 | D | 795,225 | 196,091 | 86,000 | 13,408 | 52,472 | 25,517 | 11,969 | 209,279 | 44,395 | 95,228 |
| **17** | Silver Bow, MT | 37.8 | D | 34,200 | 7,502 | 5,841 | 480 | 2,163 | 1,223 | 668 | 10,731 | 1,911 | 4,817 |
| **18** | Davis, UT | 37.7 | D | 306,479 | 103,382 | 24,983 | 7,521 | 16,110 | 8,267 | 3,608 | 65,708 | 12,418 | 21,396 |
| **18** | Lake, OR | 37.7 | D | 7,895 | 1,628 | 1,650 | 91 | 676 | 304 | 180 | 2778 | 606 | 1448 |
| **20** | Utah, UT | 37.2 | D | 516,564 | 179,470 | 33,325 | 13,057 | 26,682 | 12,757 | 4,930 | 96,370 | 17,318 | 71,988 |
| **20** | Weber, UT | 37.2 | D | 231,236 | 67,972 | 24,083 | 4,945 | 12,969 | 6,796 | 3,154 | 55,404 | 10,694 | 28,508 |
| **22** | Washoe, NV | 36.8 | D | 421,407 | 102,884 | 51,432 | 7,111 | 28,416 | 13,842 | 6,776 | 115,647 | 25,595 | 54,720 |
| **23** | Sacramento, CA | 36.7 | D | 1,418,788 | 366,156 | 159,625 | 24,289 | 82,531 | 44,845 | 21,317 | 369,720 | 97,125 | 213,470 |
| **24** | Sutter, CA | 36.4 | D | 94,737 | 26,197 | 12,243 | 1,738 | 5,351 | 2,977 | 1,496 | 25,125 | 6,616 | 13,923 |
| **25** | Shoshone, ID | 35.6 | D | 12,765 | 2,628 | 2,451 | 121 | 836 | 484 | 277 | 4,349 | 993 | 1,851 |

## People at Risk in 25 Counties Most Polluted by Year-round Particle Pollution (Annual PM-2.5)

| Rank | County/State | DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Tulare, CA | 16.49 | D | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **2** | Kings, CA | 15.19 | D | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **3** | Chelan, WA | 15.07 | C | 72,453 | 18,069 | 11,400 | 1,235 | 4,806 | 2,484 | 1,341 | 21,680 | 4,668 | 9,319 |
| **4** | Kern, CA | 15.01 | C | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **5** | Fresno, CA | 14.49 | C | 930,450 | 280,483 | 91,013 | 18,606 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **6** | Hamilton, OH | 13.72 | C | 802,374 | 188,057 | 108,575 | 17,632 | 60,932 | 26,919 | 13,557 | 227,608 | 61,195 | 119,054 |
| **7** | Fairbanks, AK | 13.58 | C | 97,581 | 25,360 | 6,103 | 1,756 | 6,411 | 2,868 | 1,133 | 21,942 | 3,781 | 7,339 |
| **8** | Butler, OH | 13.38 | B | 368,130 | 90,968 | 42,170 | 8,530 | 27,748 | 11,892 | 5,686 | 98,332 | 26,422 | 46,981 |
| **9** | Brooks, WV | 13.36 | B | 24,069 | 4,686 | 4,666 | 397 | 1,699 | 906 | 515 | 8,100 | 2,564 | 3,148 |
| **10** | Stark, OH | 13.28 | B | 375,586 | 85,597 | 60,191 | 8,025 | 28,322 | 13,229 | 7,119 | 115,304 | 31,009 | 54,056 |
| **11** | Merced, CA | 13.21 | B | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **12** | Montgomery, OH | 13.20 | B | 535,153 | 122,142 | 81,178 | 11,452 | 40,653 | 18,411 | 9,638 | 158,355 | 42,593 | 84,002 |
| **12** | Clark, IN | 13.20 | B | 110,232 | 25,920 | 14,267 | 2,532 | 7,655 | 3,689 | 1,836 | 31,036 | 7,968 | 12,930 |
| **14** | Stanislaus, CA | 13.19 | B | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **15** | Marshall, WV | 13.14 | B | 33,107 | 6,695 | 5,559 | 567 | 2,325 | 1,223 | 666 | 10,731 | 3,397 | 5,681 |
| **16** | Cabell, WV | 13.12 | B | 96,319 | 19,283 | 15,676 | 1,636 | 6,795 | 3,380 | 1,770 | 29,045 | 9,158 | 19,405 |
| **17** | Marion, IN | 13.10 | B | 903,393 | 230,857 | 98,023 | 26,548 | 61,314 | 28,320 | 13,218 | 231,601 | 58,089 | 174,274 |
| **18** | Beaver, PA | 13.09 | B | 170,539 | 34,678 | 31,185 | 3,572 | 12,026 | 6,346 | 3,554 | 56,348 | 13,287 | 19,158 |
| **19** | Wood, WV | 13.08 | B | 86,956 | 18,783 | 14,978 | 1,593 | 5,995 | 3,126 | 1,713 | 27,470 | 8,687 | 14,121 |
| **20** | Okanogan, WA | 13.07 | B | 41,120 | 9,604 | 4,714 | 657 | 2,763 | 1,353 | 645 | 11,174 | 2,375 | 4,766 |
| **21** | Jefferson, KY | 13.03 | B | 741,096 | 174,429 | 99,305 | ,16,510 | 57,518 | 24,871 | 12,510 | 210,220 | 65,739 | 114,737 |
| **22** | Dubois, IN | 13.00 | B | 41,889 | 10,644 | 5,964 | 1,040 | 2,826 | 1,414 | 740 | 12,175 | 3,183 | 2,951 |
| **23** | Wilkinson, GA | 12.99 | B | 9,563 | 2,526 | 1,450 | 249 | 482 | 321 | 173 | 2,795 | 806 | 1,968 |
| **23** | Chester, GA | 12.99 | B | 498,886 | 122,828 | 63,062 | 12,654 | 14,241 | 16,678 | 8,352 | 140,874 | 32,716 | 30,546 |
| **25** | Marion, WV | 12.91 | B | 56,418 | 11,211 | 9,616 | 951 | 3,981 | 2,029 | 1,090 | 17,651 | 5,574 | 9,413 |

## People at Risk in 25 Most Ozone-Polluted Counties

| Rank | County/State | DV | Grade | Total Population | Under 18 | 65 & Over | Pediatric Asthma | Adult Asthma | Chronic Bronchitis | Emphysema | CV Disease | Diabetes | Poverty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | Kings, PA | 0.095 | F | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **1** | San Bernardino, CA | 0.095 | F | 2,035,210 | 616,326 | 174,408 | 40,221 | 112,462 | 59,055 | 26,065 | 472,015 | 123,068 | 338,236 |
| **3** | Tulare, CA | 0.094 | F | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **4** | Merced, CA | 0.092 | F | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **5** | Fresno, CA | 0.091 | F | 930,450 | 280,483 | 91,013 | 18,606 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **6** | Kern, CA | 0.090 | F | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **7** | Madera, CA | 0.088 | F | 150,865 | 44,301 | 15,651 | 2,938 | 8,357 | 4,498 | 2,107 | 36,843 | 9,646 | 29,141 |
| **8** | Stanislaus, CA | 0.087 | F | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **9** | Riverside, CA | 0.086 | F | 2,189,641 | 634,216 | 254,870 | 42,071 | 121,653 | 66,208 | 32,004 | 549,406 | 143,825 | 298,763 |
| **9** | Harford, MD | 0.086 | F | 244,826 | 60,346 | 30,187 | 7,203 | 16,649 | 8,172 | 4,065 | 68,820 | 17,685 | 15,091 |
| **11** | Placer, CA | 0.085 | F | 348,432 | 83,579 | 54,743 | 5,544 | 20,633 | 12,016 | 6,440 | 104,506 | 27,891 | 25,044 |
| **12** | Calaveras, CA | 0.084 | F | 45,572 | 8,725 | 8,701 | 578 | 2,871 | 1,791 | 1,029 | 16,122 | 4,401 | 5,113 |
| **13** | Bucks, PA | 0.083 | F | 625,249 | 142,074 | 90,322 | 14,636 | 43,387 | 22,004 | 11,505 | 189,488 | 44,297 | 25,871 |
| **14** | Tuolumne, CA | 0.082 | F | 55,365 | 9,581 | 11,133 | 635 | 3,552 | 2,164 | 1,239 | 19,420 | 5,231 | 7,221 |
| **14** | Camden, NJ | 0.082 | D | 513,657 | 124,734 | 65,695 | 11,349 | 29,963 | 17,007 | 8,455 | 143,032 | 33,332 | 56,937 |
| **14** | Tarrant, TX | 0.082 | D | 1,809,034 | 512,814 | 157,664 | 41,907 | 83,473 | 53,600 | 23,650 | 428,387 | 116,562 | 257,303 |
| **17** | Amador, CA | 0.081 | D | 38,091 | 6,416 | 7,415 | 425 | 2,463 | 1,500 | 851 | 13,404 | 3,621 | 3,783 |
| **17** | El Dorado, CA | 0.081 | D | 181,058 | 42,430 | 22,035 | 2,815 | 10,926 | 6,373 | 3,223 | 54,188 | 14,728 | 13,689 |
| **17** | Sacramento, CA | 0.081 | D | 1,418,788 | 366,156 | 159,625 | 26,289 | ,82,531 | 44,845 | 21,317 | 369,720 | 97,125 | 213,470 |
| **17** | Cecil, MD | 0.081 | D | 101,108 | 25,004 | 12,015 | 2,984 | 6,902 | 3,333 | 1,631 | 27,863 | 7,134 | 9,934 |
| **17** | Gloucester, NJ | 0.081 | D | 288,288 | 68,316 | 35,001 | 6,216 | 16,968 | 9,620 | 4,712 | 80,429 | 18,636 | 21,755 |
| **17** | Morris, NJ | 0.081 | D | 492,276 | 117,559 | 66,665 | 10,696 | 28,777 | 16,887 | 8,666 | 144,197 | 33,739 | 18,204 |
| **17** | Ocean, NJ | 0.081 | D | 576,567 | 132,828 | 121,638 | 12,085 | 33,546 | 20,916 | 12,407 | 190,525 | 46,605 | 46,423 |

## Cleanest U.S. Cities for Short-term Particle Pollution (24-hour PM-2.5)

| Rank | MSA | PW DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Santa Fe, NM | 7.6 | A | 44,170 |
| **2** | Cheyenne, WY | 9.2 | A | 91,738 |
| **3** | Casper, WY | 10.3 | A | 75,450 |
| **4** | Prescott, AZ | 10.8 | A | 211,033 |
| **5** | Tucson, AZ | 11.3 | A | 980,263 |
| **6** | Santa Cruz, CA | 12.4 | A | 262,382 |
| **7** | Lake Havasu, AZ | 12.5 | A | 200,186 |
| **8** | Flagstaff, AZ | 12.7 | A | 134,421 |
| **9** | Farmington, NM | 13.6 | A | 130,044 |
| **10** | Cape Coral, FL | 13.7 | A | 618,754 |
| **10** | Great Falls, MT | 13.7 | A | 81,327 |
| **12** | Albuquerque, NM | 14.0 | A | 887,077 |
| **13** | Honolulu, HI | 14.1 | A | 953,207 |
| **13** | Pueblo, CO | 14.1 | A | 159,063 |
| **15** | Miami, FL | 14.4 | A | 5,564,635 |
| **16** | Amarillo, TX | 15.0 | A | 249,881 |
| **17** | Lakeland, FL | 15.1 | A | 602,095 |
| **18** | Orlando, FL | 15.4 | A | 2,134,411 |
| **19** | Billings, MT | 15.7 | A | 158,050 |
| **19** | Palm Bay, FL | 15.7 | A | 543,326 |
| **19** | Santa Barbara, CA | 15.7 | A | 423,895 |
| **22** | Bismarck, ND | 15.8 | A | 108,779 |
| **23** | North Park, FL | 15.9 | A | 702,281 |
| **23** | Odessa, TX | 15.9 | A | 137,130 |
| **23** | Yuma, AZ | 15.9 | A | 195,751 |

MSA – Metropolitan Statistical Area
PW DV – Population Weighted Design Value

## Top 25 Cleanest U.S. Cities for Year-round Particle Pollution (Annual PM-2.5)

| Rank | MSA | PW DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Santa Fe, NM | 4.10 | A | 44,170 |
| **2** | Cheyenne, WY | 4.18 | A | 91,738 |
| **3** | Casper, WY | 4.48 | A | 75,450 |
| **4** | Pocatello, ID | 4.84 | A | 90,656 |
| **5** | Honolulu, HI | 4.85 | A | 953,207 |
| **6** | Prescott, AZ | 4.96 | A | 211,033 |
| **7** | Bend, OR | 5.11 | A | 157,733 |
| **8** | Great Falls, MT | 5.17 | A | 81,327 |
| **9** | Albuquerque, NM | 5.24 | A | 887,077 |
| **9** | Farmington, NM | 5.24 | A | 130,044 |
| **11** | Lake Havasu, AZ | 5.46 | A | 200,186 |
| **12** | Tucson, AZ | 5.84 | A | 980,263 |
| **13** | Altoona, PA | 5.91 | A | 127,089 |
| **14** | Redding, CA | 5.94 | A | 177,223 |
| **15** | Amarillo, TX | 5.98 | A | 249,881 |
| **16** | Anchorage, AK | 6.05 | A | 380,841 |
| **17** | Flagstaff, AZ | 6.13 | A | 134,421 |
| **18** | Duluth, MN | 6.28 | A | 279,771 |
| **19** | Burlington, VT | 6.31 | A | 211,261 |
| **20** | Santa Cruz, CA | 6.33 | A | 262,382 |
| **21** | Pueblo, CO | 6.51 | A | 159,063 |
| **22** | Billings, MT | 6.54 | A | 158,050 |
| **23** | Fort Collins, CO | 6.65 | A | 299,630 |
| **24** | Miami, FL | 6.75 | A | 5,564,635 |
| **25** | Boise City, ID | 6.76 | A | 616,561 |

MSA – Metropolitan Statistical Area
PW DV – Population Weighted Design Value

## Cleanest U.S. Cities for Ozone Air Pollution

| Rank | MSA | PW DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Honolulu, HI | 0.045 | A | 953,207 |
| **2** | Bellingham, WA | 0.047 | A | 201,140 |
| **3** | Santa Rosa, CA | 0.050 | A | 483,878 |
| **4** | Lincoln, NE | 0.051 | A | 302,157 |
| **5** | Missoula, MT | 0.054 | A | 109,299 |
| **6** | Omaha, NE | 0.056 | A | 865,350 |
| **6** | St. Cloud, MN | 0.056 | A | 189,093 |
| **8** | Bend, OR | 0.057 | A | 157,733 |
| **8** | Coeur d Alene, ID | 0.057 | A | 138,494 |
| **8** | Des Moines, IA | 0.057 | A | 599,633 |
| **8** | Laredo, TX | 0.057 | A | 250,304 |
| **8** | Santa Cruz, CA | 0.057 | A | 262,382 |
| **8** | Spokane, WA | 0.057 | A | 471,221 |
| **14** | Bismarck, ND | 0.058 | A | 108,779 |
| **14** | Duluth, MN | 0.058 | A | 279,771 |
| **14** | Fargo, ND | 0.058 | A | 208,776 |
| **14** | Olympia, WA | 0.058 | A | 252,264 |
| **14** | Rapid City, SD | 0.058 | A | 126,382 |
| **14** | Salinas, CA | 0.058 | A | 415,057 |
| **14** | San Francisco, CA | 0.058 | A | 4,335,391 |
| **14** | Seattle, WA | 0.058 | A | 3,439,809 |
| **22** | Ames, IA | 0.059 | A | 89,542 |
| **22** | Bangor, ME | 0.059 | A | 153,923 |
| **22** | Florence, AL | 0.059 | A | 147,137 |

MSA – Metropolitan Statistical Area
PW DV – Population Weighted Design Value

## Cleanest Counties for Short-term Particle Pollution (24-hour PM-2.5)

| Rank | City/State | DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Rio Blanco, CO | 5.8 | A | 6,666 |
| **2** | Santa Fe, NM | 7.6 | A | 144,170 |
| **3** | Sandoval, NM | 8.6 | A | 131,561 |
| **4** | Laramie, WY | 9.2 | A | 91,738 |
| **5** | Converse, WY | 9.8 | A | 13,833 |
| **6** | Elbert, CO | 9.9 | A | 23,086 |
| **6** | La Plata, CO | 9.9 | A | 51,334 |
| **8** | Natrona, WY | 10.3 | A | 75,450 |
| **9** | Grant, NM | 10.5 | A | 29,514 |
| **10** | Yavapai, AZ | 10.8 | A | 211,033 |
| **11** | Billings, ND | 10.9 | A | 783 |
| **11** | Custer, SD | 10.9 | A | 8,216 |
| **13** | Teton, WY | 11.0 | A | 21,294 |
| **14** | Pima, AZ | 11.3 | A | 980,263 |
| **15** | Lea, NM | 11.8 | A | 64,727 |
| **16** | Essex, NY | 12.3 | A | 39,370 |
| **16** | Jackson, SD | 12.3 | A | 3,031 |
| **18** | Monterey, CA | 12.4 | A | 415,057 |
| **18** | Santa Cruz, CA | 12.4 | A | 262,382 |
| **20** | Mohave, AZ | 12.5 | A | 201,186 |
| **21** | Chaves, NM | 12.7 | A | 65,645 |
| **21** | Coconino, AZ | 12.7 | A | 134,421 |
| **23** | Campbell, WY | 12.8 | A | 46,133 |
| **24** | Siskiyou, CA | 13.1 | A | 44,920 |
| **25** | Cochise, AZ | 13.5 | A | 131,346 |

DV – design value

## Top 25 Cleanest Counties for Year-round Particle Pollution (Annual PM-2.5)

| Rank | City/State | DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Rio Blanco, CO | 2.47 | A | 6,666 |
| **2** | Converse, WY | 3.28 | A | 13,833 |
| **3** | Sandoval, NM | 4.02 | A | 131,561 |
| **4** | Santa Fe, NM | 4.10 | A | 144,170 |
| **5** | La Plata, CO | 4.12 | A | 51,334 |
| **6** | Maui, HI | 4.15 | A | 154,834 |
| **7** | Laramie, WY | 4.18 | A | 91,738 |
| **8** | Jackson, SD | 4.35 | A | 3,031 |
| **9** | Essex, NY | 4.38 | A | 39,370 |
| **10** | Hancock, ME | 4.41 | A | 44,418 |
| **11** | Billings, ND | 4.46 | A | 783 |
| **12** | Natrona, WY | 4.48 | A | 75,450 |
| **13** | Lake, CA | 4.62 | A | 64,665 |
| **14** | Teton, WY | 4.72 | A | 21,294 |
| **15** | Cass, MN | 4.74 | A | 28,567 |
| **16** | Custer, SD | 4.75 | A | 8,216 |
| **17** | Bannock, ID | 4.84 | A | 80,839 |
| **17** | Park, WY | 4.84 | A | 28,205 |
| **17** | Grant, NM | 4.84 | A | 24,514 |
| **17** | Elbert, CO | 4.84 | A | 23,086 |
| **21** | Honolulu, HI | 4.85 | A | 953,207 |
| **22** | Yavapai, AZ | 4.96 | A | 211,033 |
| **23** | Deschutes, OR | 5.11 | A | 157,733 |
| **24** | Cascades, MT | 5.17 | A | 81,327 |
| **25** | Campbell, WY | 5.19 | A | 46,133 |

DV – design value

## Cleanest Counties for Ozone Air Pollution

| Rank | City/State | DV | Grade | 2010 Population |
|---|---|---|---|---|
| **1** | Anchorage, AK | 0.044 | A | 291,826 |
| **2** | Honolulu, HI | 0.045 | A | 953,207 |
| **3** | Humboldt, CA | 0.047 | A | 134,623 |
| **3** | Whatcom, WA | 0.047 | A | 201,140 |
| **5** | San Francisco, CA | 0.048 | A | 805,235 |
| **6** | Becker, MN | 0.049 | A | 32,504 |
| **7** | Mendocino, CA | 0.050 | A | 87,841 |
| **7** | Sonoma, CA | 0.050 | A | 483,878 |
| **9** | Lancaster, NE | 0.051 | A | 285,407 |
| **10** | Aroostook, ME | 0.053 | A | 71,870 |
| **10** | Chippewa, MI | 0.053 | A | 38,520 |
| **10** | Goodhue, MN | 0.053 | A | 46,183 |
| **13** | Marin, CA | 0.054 | A | 252,409 |
| **13** | Missoula, MT | 0.054 | A | 109,299 |
| **15** | Jackson, SD | 0.055 | A | 3,031 |
| **15** | Big Horn, WY | 0.055 | A | 11,668 |
| **17** | Carlton, MN | 0.056 | A | 35,386 |
| **17** | Stearns, MN | 0.056 | A | 150,642 |
| **17** | Flathead, MT | 0.056 | A | 90,928 |
| **17** | Powder River, MT | 0.056 | A | 1,743 |
| **17** | Douglas, NE | 0.056 | A | 517,110 |
| **17** | Franklin, NY | 0.056 | A | 51,599 |
| **17** | Columbia, OR | 0.056 | A | 49,351 |
| **17** | Clallam, WA | 0.056 | A | 71,404 |

DV – design value

# CALIFORNIA

| | AT RISK GROUPS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **County** | **Total Population** | **Under 18** | **65 & Over** | **Pediatric Asthma** | **Adult Asthma** | **Chronic Bronchitis** | **Emphysema** | **Cardio vascular Disease** | **Diabetes** | **Poverty** |
| **Alameda** | 1,510,271 | 349,021 | 164,569 | 23,152 | 91,199 | 49,191 | 22,909 | 402,149 | 105,629 | 160,528 |
| **Amador** | 38,091 | 6,416 | 7,415 | 425 | 2,463 | 1,500 | 851 | 13,404 | 3,621 | 3,783 |
| **Butte** | 220,000 | 46,080 | 32,915 | 3,057 | 13,558 | 7,623 | 3,910 | 64,936 | 17,126 | 39,613 |
| **Calaveras** | 45,572 | 8,725 | 8,701 | 578 | 2,871 | 1,791 | 1,029 | 16,122 | 4,401 | 5,113 |
| **Colusa** | 21,419 | 6,585 | 2,578 | 437 | 1,159 | 645 | 321 | 5,431 | 1,433 | 2,816 |
| **Contra Costa** | 1,049,025 | 261,011 | 127,772 | 17,314 | 61,824 | 34,720 | 17,170 | 291,563 | 77,657 | 98,236 |
| **El Dorado** | 181,058 | 42,430 | 22,035 | 2,815 | 10,926 | 6,373 | 3,223 | 54,188 | 14,728 | 13,689 |
| **Fresno** | 930,450 | 280,483 | 91,013 | 18,606 | 50,977 | 26,986 | 12,338 | 218,584 | 56,858 | 195,834 |
| **Glenn** | 28,122 | 8,116 | 3,526 | 539 | 1,564 | 875 | 440 | 7,399 | 1,957 | 4,384 |
| **Humboldt** | 134,623 | 27,158 | 17,481 | 1,802 | 8,420 | 4,666 | 2,287 | 39,004 | 10,314 | 24,904 |
| **Imperial** | 174,528 | 53,692 | 18,384 | 3,561 | 9,457 | 5,043 | 2,363 | 41,272 | 10,724 | 36,990 |
| **Inyo** | 18,546 | 4,092 | 2,959 | 271 | 1,130 | 681 | 371 | 5,988 | 1,626 | 2,294 |
| **Kern** | 839,631 | 260,561 | 75,566 | 17,284 | 45,493 | 23,930 | 10,720 | 192,341 | 50,022 | 177,423 |
| **Kings** | 152,982 | 42,246 | 11,791 | 2,802 | 8,708 | 4,341 | 1,770 | 33,540 | 8,521 | 25,242 |
| **Lake** | 64,665 | 14,277 | 10,826 | 947 | 3,931 | 2,362 | 1,301 | 20,827 | 5,628 | 14,052 |
| **Los Angeles** | 9,818,605 | 2,493,378 | 1,039,875 | 165,397 | 574,589 | 306,075 | 141,101 | 2,489,478 | 649,147 | 1,547,561 |
| **Madera** | 150,865 | 44,301 | 15,651 | 2,938 | 8,357 | 4,498 | 2,107 | 36,843 | 9,646 | 29,141 |
| **Marin** | 252,409 | 51,416 | 40,963 | 3,410 | 15,706 | 9,363 | 5,068 | 81,933 | 24,142 | 17,764 |
| **Mariposa** | 18,251 | 3,269 | 3,586 | 216 | 1,164 | 718 | 411 | 6,447 | 1,748 | 2,425 |
| **Mendocino** | 87,841 | 19,666 | 13,568 | 1,305 | 5,326 | 3,133 | 1,673 | 27,241 | 7,327 | 15,175 |
| **Merced** | 255,793 | 81,810 | 25,199 | 5,427 | 13,634 | 7,245 | 3,347 | 58,954 | 15,332 | 61,882 |
| **Monterey** | 415,057 | 113,992 | 42,769 | 7,561 | 23,615 | 12,581 | 5,802 | 102,338 | 26,686 | 68,057 |
| **Napa** | 136,484 | 31,883 | 20,213 | 2,115 | 8,165 | 4,695 | 2,456 | 40,397 | 10,766 | 11,339 |
| **Nevada** | 98,764 | 18,794 | 18,358 | 1,247 | 6,234 | 3,849 | 2,185 | 34,455 | 9,382 | 9,921 |
| **Orange** | 3,010,232 | 751,418 | 345,800 | 49,846 | 177,058 | 96,237 | 45,827 | 793,970 | 208,517 | 316,433 |
| **Placer** | 348,432 | 83,579 | 54,743 | 5,544 | 20,633 | 12,016 | 6,440 | 104,506 | 27,891 | 25,044 |
| **Plumas** | 20,007 | 3,594 | 4,265 | 239 | 1,274 | 809 | 480 | 740 | 2,020 | 2,439 |
| **Riverside** | 2,189,641 | 634,216 | 252,870 | 42,071 | 121,653 | 66,208 | 32,004 | 549,406 | 143,825 | 298,763 |
| **Sacramento** | 1,418,788 | 366,156 | 159,635 | 24,289 | 82,531 | 44,845 | 21,317 | 369,720 | 97,125 | 213,470 |
| **San Benito** | 55,269 | 15,967 | 5,130 | 1,059 | 3,095 | 1,669 | 765 | 13,565 | 3,580 | 7,602 |
| **San Bernardino** | **2,035,210** | **616,326** | **174,408** | **40,221** | **112,462** | **59,055** | **26,065** | **472,015** | **123,068** | **338,236** |

# CALIFORNIA

**(Continued)**

| | AT RISK GROUPS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **County** | **Total Population** | **Under 18** | **65 & Over** | **Pediatric Asthma** | **Adult Asthma** | **Chronic Bronchitis** | **Emphysema** | **Cardio vascular Disease** | **Diabetes** | **Poverty** |
| **San Diego** | 3,095,313 | 749,681 | 352,589 | 49,730 | 183,851 | 99,239 | 46,832 | 815,377 | 213,512 | 377,850 |
| **San Francisco** | 805,235 | 116,234 | 112,875 | 7,710 | 53,810 | 28,919 | 13,870 | 238,951 | 62,073 | 92,965 |
| **San Joaquin** | 685,306 | 205,264 | 69,235 | 13,617 | 37,672 | 20,291 | 9,474 | 166,020 | 42,527 | 105,383 |
| **San Luis Obispo** | 267,637 | 49,949 | 39,735 | 3,313 | 17,004 | 9,596 | 4,892 | 81,576 | 21,614 | 33,881 |
| **san Mateo** | 718,451 | 160,308 | 94,184 | 10,634 | 43,705 | 24,457 | 12,171 | 205,802 | 54,572 | 54,227 |
| **Santa Barbara** | 423,895 | 100,815 | 55,768 | 6,688 | 25,221 | 13,798 | 6,791 | 115,353 | 30,166 | 61,128 |
| **Santa Clara** | 1,781,642 | 435,488 | 194,667 | 28,888 | 105,598 | 56,674 | 26,397 | 463,096 | 121,149 | 159,409 |
| **Santa Cruz** | 262,382 | 57,122 | 29,110 | 3,789 | 16,142 | 8,840 | 4,169 | 72,718 | 19,260 | 35,092 |
| **Shasta** | 177,223 | 40,767 | 27,927 | 2,704 | 10,645 | 6,256 | 3,362 | 54,517 | 14,626 | 27,023 |
| **Siskiyou** | 44,920 | 9,425 | 8,702 | ,625 | 27,586 | 1,719 | 996 | 15,531 | 4,224 | 7,128 |
| **Solano** | 413,344 | 103,880 | 47,506 | 6,891 | 24,289 | 13,412 | 6,473 | 111,396 | 29,502 | 42,767 |
| **Sonoma** | 483,878 | 107,244 | 66,090 | 7,114 | 29,500 | 16,825 | 8,559 | 143,065 | 38,218 | 45,193 |
| **Stanislaus** | 514,453 | 150,414 | 53,965 | 9,978 | 28,548 | 15,409 | 7,249 | 126,454 | 33,140 | 86,265 |
| **Sutter** | 94,737 | 26,197 | 12,243 | 1,738 | 5,351 | 2,977 | 1,496 | 25,125 | 6,616 | 13,923 |
| **Tehama** | 63,463 | 15,882 | 9,662 | 1,054 | 3,710 | 2,160 | 1,152 | 18,755 | 5,012 | 11,792 |
| **Tulare** | 442,179 | 145,393 | 41,569 | 9,645 | 23,281 | 12,347 | 5,654 | 100,132 | 26,063 | 100,382 |
| **Tuolumne** | 55,365 | 9,581 | 11,133 | 635 | 3,552 | 2,164 | 1,239 | 19,420 | 5,231 | 7,221 |
| **Ventura** | 823,318 | 214,635 | 97,052 | 14,238 | 47,738 | 26,542 | 12,982 | 221,720 | 58,801 | 85,433 |
| **Yolo** | 200,849 | 46,376 | 19,727 | 3,075 | 12,121 | 6,246 | 2,733 | 49,661 | 12,770 | 30,260 |
| | | | | | | | | | | |
| **Subtotals** | 37,074,221 | 9,485,313 | 4,158,303 | 628,542 | 2,188,500 | 1,171,594 | 554,542 | 9,633,425 | 2,529,523 | 5,147,475 |
| **Not Monitored** | 182,735 | 46,752 | 20,496 | 3,098 | 10,787 | 5,775 | 2,733 | 47,482 | 12,468 | 25,371 |
| **Totals** | **37,256,956** | **9,532,065** | **4,178,799** | **631,640** | **2,199,287** | **1,177,369** | **557,275** | **9,680,907** | **2,541,991** | **5,172,846** |

# CALIFORNIA
# 2008 – 2010

| | Ozone | | Particle Pollution (PM-2.5) | | | |
|---|---|---|---|---|---|---|
| **County** | **Avg. DV** | **Grade** | **Avg. 24-hr DV** | **Grade** | **Avg. Ann DV** | **Grade** |
| **Alameda** | 0.057 | A | 26.2 | A | 8.84 | A |
| **Amador** | 0.081 | D | ND | --- | ND | --- |
| **Butte** | 0.076 | D | 50.9 | F | 11.50 | A |
| **Calaveras** | 0.084 | F | 23.3 | B | 6.54 | A |
| **Colusa** | 0.066 | B | 22.3 | A | 7.53 | A |
| **Contra Costa** | 0.067 | B | 30.4 | B | 8.29 | A |
| **El Dorado** | 0.081 | D | ND | --- | ND | --- |
| **Fresno** | 0.091 | F | 47.5 | F | 14.49 | C |
| **Glenn** | 0.067 | B | ND | --- | ND | --- |
| **Humboldt** | 0.047 | A | 21.0 | A | 6.67 | A |
| **Imperial** | 0.073 | C | 22.3 | A | 9.32 | A |
| **Inyo** | 0.072 | C | 28.7 | B | 6.23 | A |
| **Kern** | 0.090 | F | 42.4 | F | 15.01 | C |
| **Kings** | 0.095 | F | 49.3 | F | 15.19 | D |
| **Lake** | 0.062 | B | 24.2 | A | 4.62 | A |
| **Los Angeles** | 0.077 | D | 30.9 | B | 12.36 | B |
| **Madera** | 0.088 | F | ND | --- | ND | --- |
| **Marin** | 0.054 | A | ND | --- | ND | --- |
| **Mariposa** | 0.071 | C | ND | --- | ND | --- |
| **Mendocino** | 0.050 | A | 21.0 | A | 7.37 | A |
| **Merced** | 0.092 | F | 44.9 | F | 13.21 | B |
| **Monterey** | 0.058 | A | 12.4 | A | 5.84 | A |
| **Napa** | 0.066 | B | ND | --- | ND | --- |
| **Nevada** | 0.074 | C | 27.5 | A | 6.56 | A |
| **Orange** | 0.073 | C | 26.1 | A | 10.47 | A |
| **Placer** | 0.085 | F | 22.7 | A | 8.42 | A |
| **Plumas** | ND | --- | 34.7 | C | 10.04 | A |
| **Riverside** | 0.086 | F | 26.5 | A | 11.20 | A |
| **Sacramento** | 0.081 | D | 36.7 | D | 10.09 | A |
| **San Benito** | 0.073 | C | 15.0 | A | 6.06 | A |
| **San Bernardino** | 0.095 | F | 31.0 | B | 11.62 | A |
| **San Diego** | 0.066 | B | 21.1 | A | 9.99 | A |
| **San Francisco** | 0.048 | A | 26.3 | A | 9.15 | A |
| **San Joaquin** | 0.077 | D | 45.5 | F | 11.57 | A |
| **San Luis Obispo** | 0.068 | C | 16.5 | A | 6.90 | A |
| **San Mateo** | 0.058 | A | 27.1 | A | 8.41 | A |
| **Santa Barbara** | 0.060 | B | 15.7 | A | 8.01 | A |
| **Santa Clara** | 0.069 | C | 24.5 | A | 8.97 | A |
| **Santa Cruz** | 0.057 | A | 12.4 | A | 6.33 | A |
| **Shasta** | 0.072 | C | 18.6 | A | 5.94 | A |
| **Siskiyou** | 0.061 | B | 13.1 | A | 5.71 | A |
| **Solano** | 0.070 | C | 30.9 | B | 9.14 | A |
| **Sonoma** | 0.050 | A | 24.7 | A | 7.50 | A |
| **Stanislaus** | 0.087 | F | 46.3 | F | 13.19 | B |
| **Sutter** | 0.072 | C | 36.4 | D | 8.19 | A |
| **Tehama** | 0.077 | D | ND | --- | ND | --- |
| **Tulare** | 0.094 | F | 50.8 | F | 16.49 | D |
| **Tuolumne** | 0.082 | D | ND | --- | ND | --- |
| **Ventura** | 0.075 | C | 19.5 | A | 9.66 | A |
| **Yolo** | 0.073 | C | 23.2 | A | 7.64 | A |

DV – design value
ND – no data