Indiana Department of Environmental Management

# The States' View of the Air

## State of Indiana

### Delaware Section with Introduction

2014

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*Office of Air Quality*
April 8, 2014

# EXECUTIVE SUMMARY

**Air quality across the nation has improved over the past ten years or more. The publication of misleading reports can unfortunately lead the public to believe otherwise. This analysis demonstrates the progress made from 2000 through 2012 for ozone and fine particles (PM-2.5). The national ambient air quality standards in place in 2012 were applied to all time periods in this analysis to demonstrate the progress made.**

**Figures 1 through 3 show the progress made for ozone, 24-hour PM-2.5 and annual PM-2.5. The bars represent the population of each period (based on the last year in the period). The portion that is green represents the number of people living in counties that measure air quality better than the standard. The portion of the bar that is red represents the number of people living in counties that measure air quality at levels above the standard. The blue portion of the bar represents the number of people that live in counties where air quality is not measured.**

**Compliance with standards is determined on a three year basis. In 2000 – 2002 approximately 49 million people lived in counties that measured ozone air quality levels better than the standard. By 2010 – 2012 this had increased to over 128 million people.**

**The situation for fine particles (PM-2.5) is very similar. In 2000 – 2002, 99 million people lived in counties where 24-hour PM-2.5 levels were measured below the standard. By 2010 – 2012 this had increased to 198 million people. Of note, is that monitoring for PM-2.5 is only conducted in counties with a total of 201 million people.**

**In the 2000 – 2002 period, 124 million people lived in counties where annual PM-2.5 levels were measured below the standard. By 2010 – 2012 this had increased to 201 million people. Approximately 150,000 people lived in counties where annual PM-2.5 levels were measured above the standard.**

**Even with the improvements made in air quality, there are still areas of the country that need further improvement. Figure 4 shows states that have 8 hour ozone nonattainment areas based on 2010 – 2012 data using the average air quality method described in this document. Thirty states, including the District of Columbia, would be included. Figure 5 shows the states that would be nonattainment based upon U.S. EPA methods. Only Arizona is added.**

**Figure 6 shows those states that violate the 24-hour PM-2.5 standard based on 2010 – 2012 data using average air quality data. Only five states are included. The U.S. EPA method adds Oregon. This is shown in Figure 7.**

**Figure 8 shows those states that violate the annual PM-2.5 standard based on 2010 – 2012 data using average air quality data. Only California is included. Figure 9 shows the results for the same period using U.S. EPA's method and includes only California.**

**The bottom line is that most areas of the country were meeting the PM-2.5 standard at the 2010 – 2012 review. There are still several areas of the country that violate the current ozone standard. Many areas have made considerable progress in lowering ozone levels, but further work remains to be done. During 2012, U.S. EPA lowered the annual PM-2.5 standard. Future analyses will focus on how areas are dealing with meeting this new standard.**

Figure 1

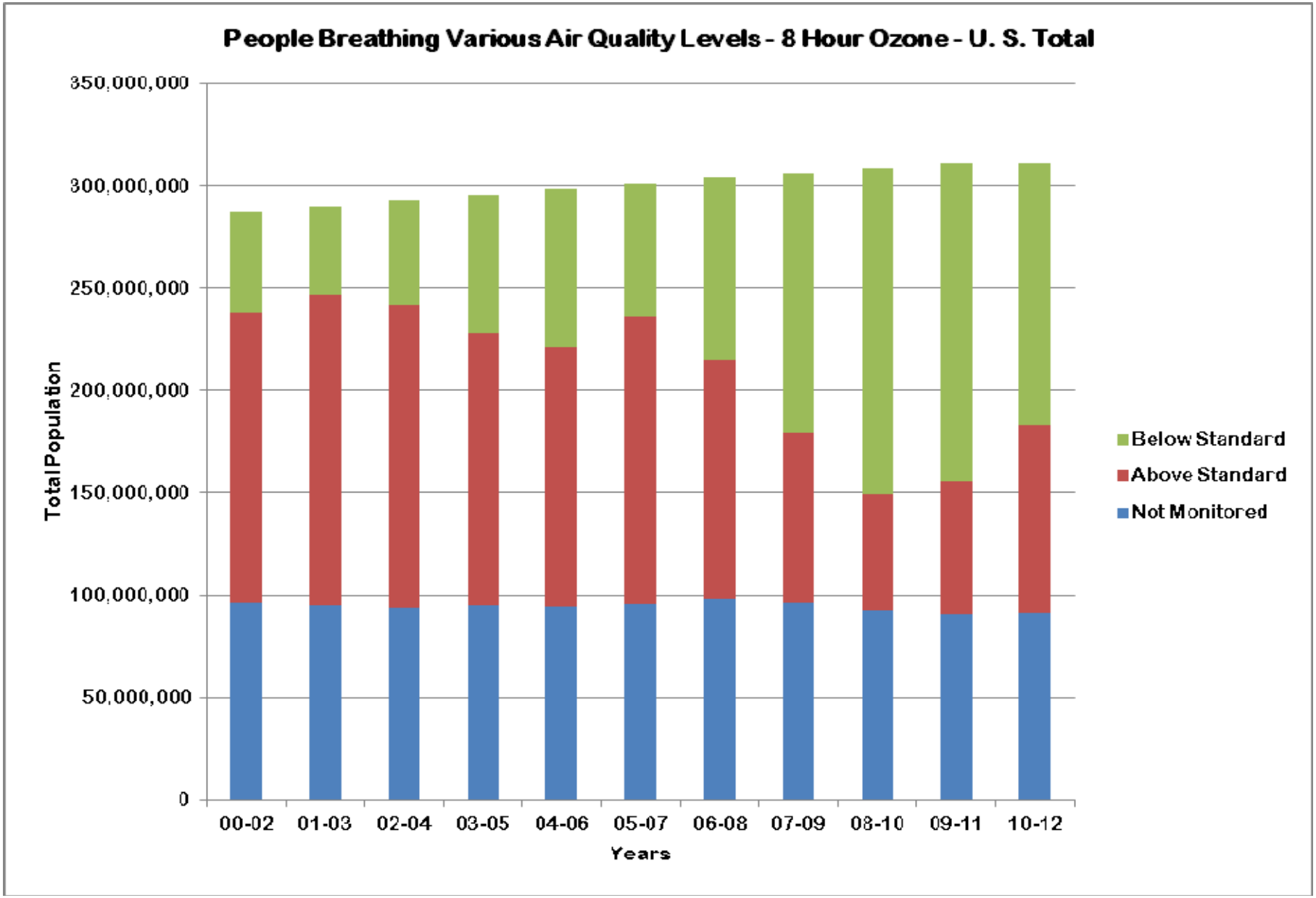

People Breathing Various Air Quality Levels - 8 Hour Ozone - U. S. Total
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored

Figure 2

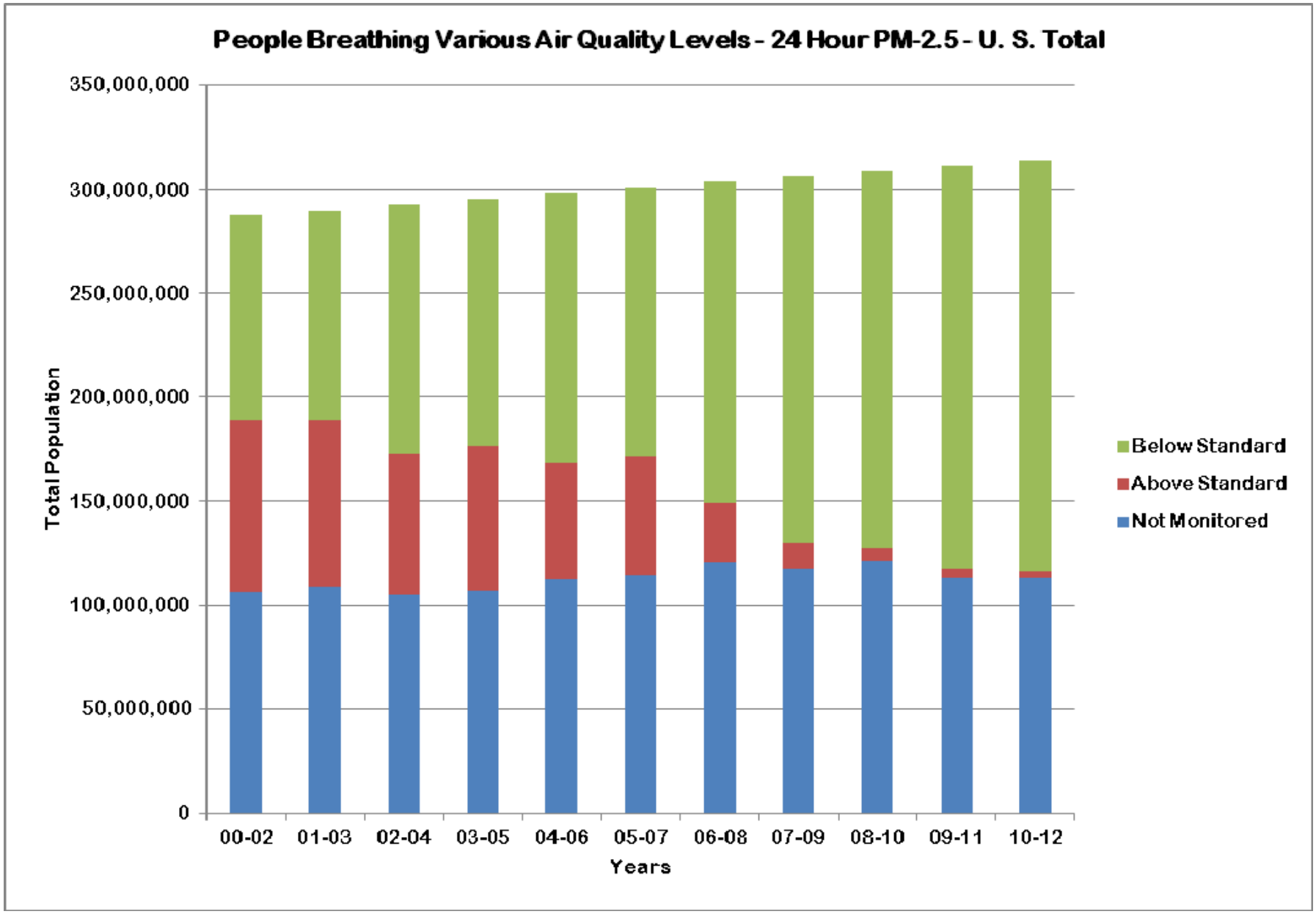

People Breathing Various Air Quality Levels - 24 Hour PM-2.5 - U. S. Total
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored

Figure 3

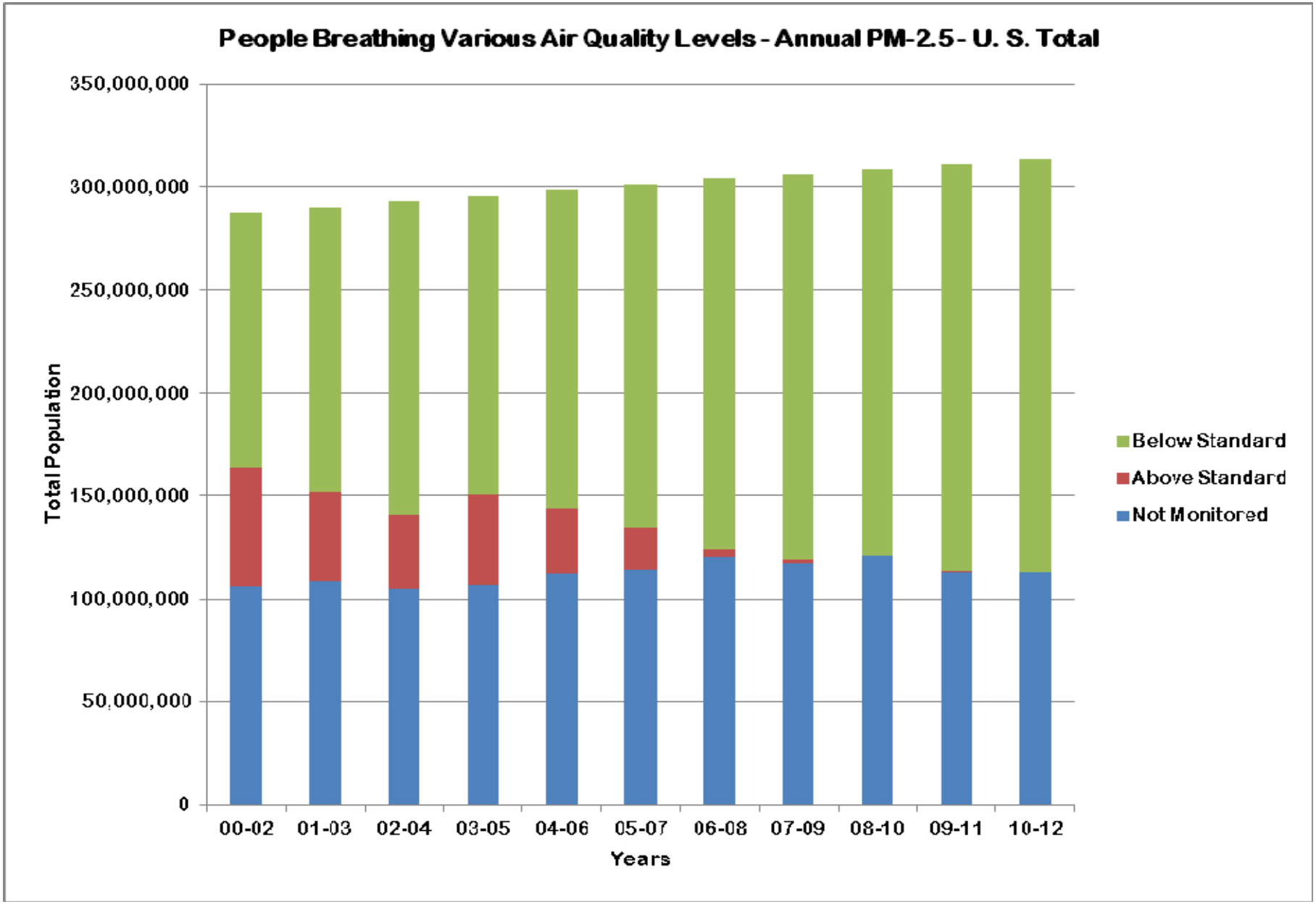

People Breathing Various Air Quality Levels - Annual PM-2.5 - U. S. Total
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored

Figure 4

# Non-Attainment States Based on Average Data - 8 Hour Ozone (Map 1)

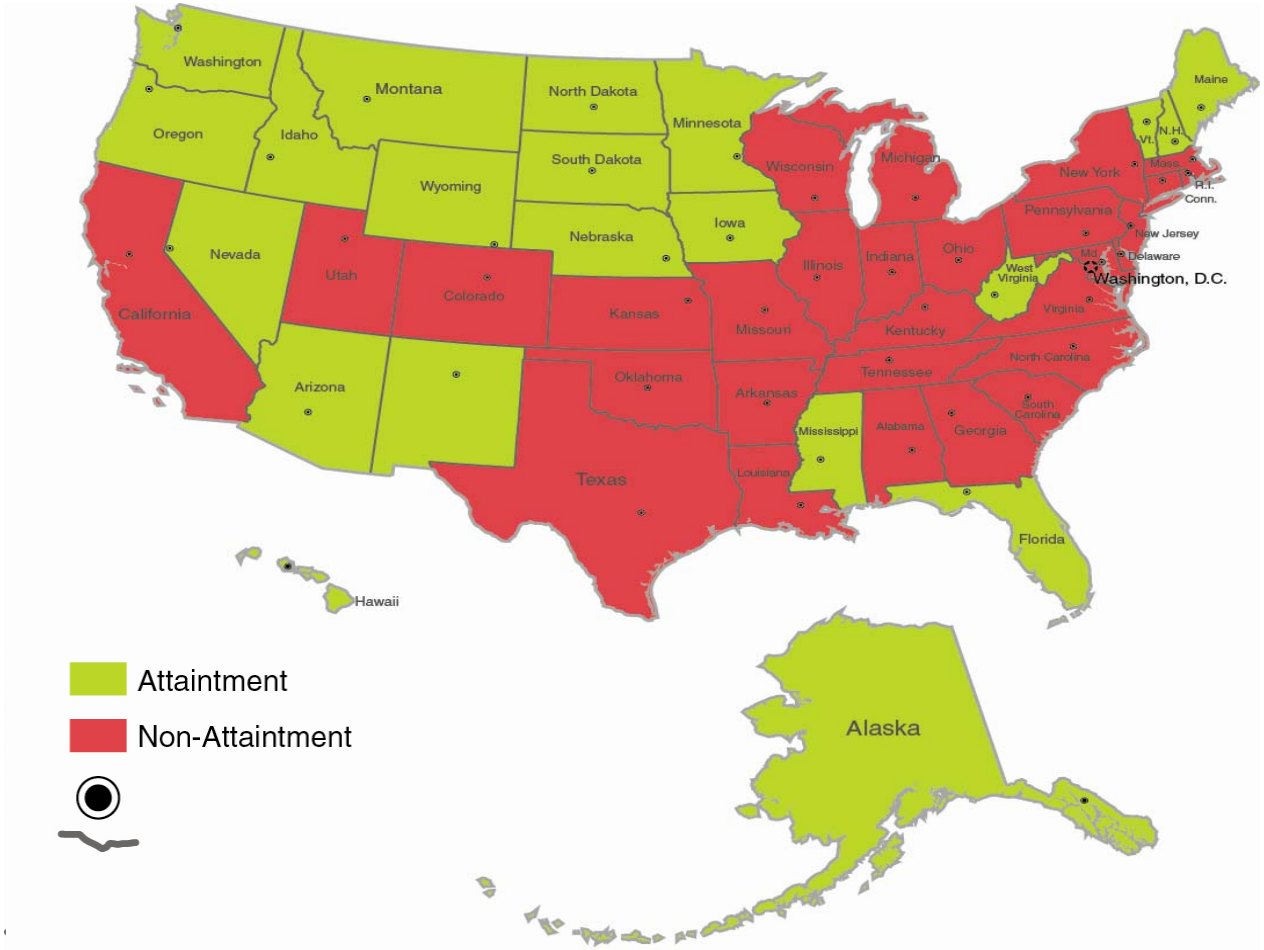


Figure 5

## Non-Attainment States Based on U.S. EPA Method - 8 Hour Ozone (Map 2)

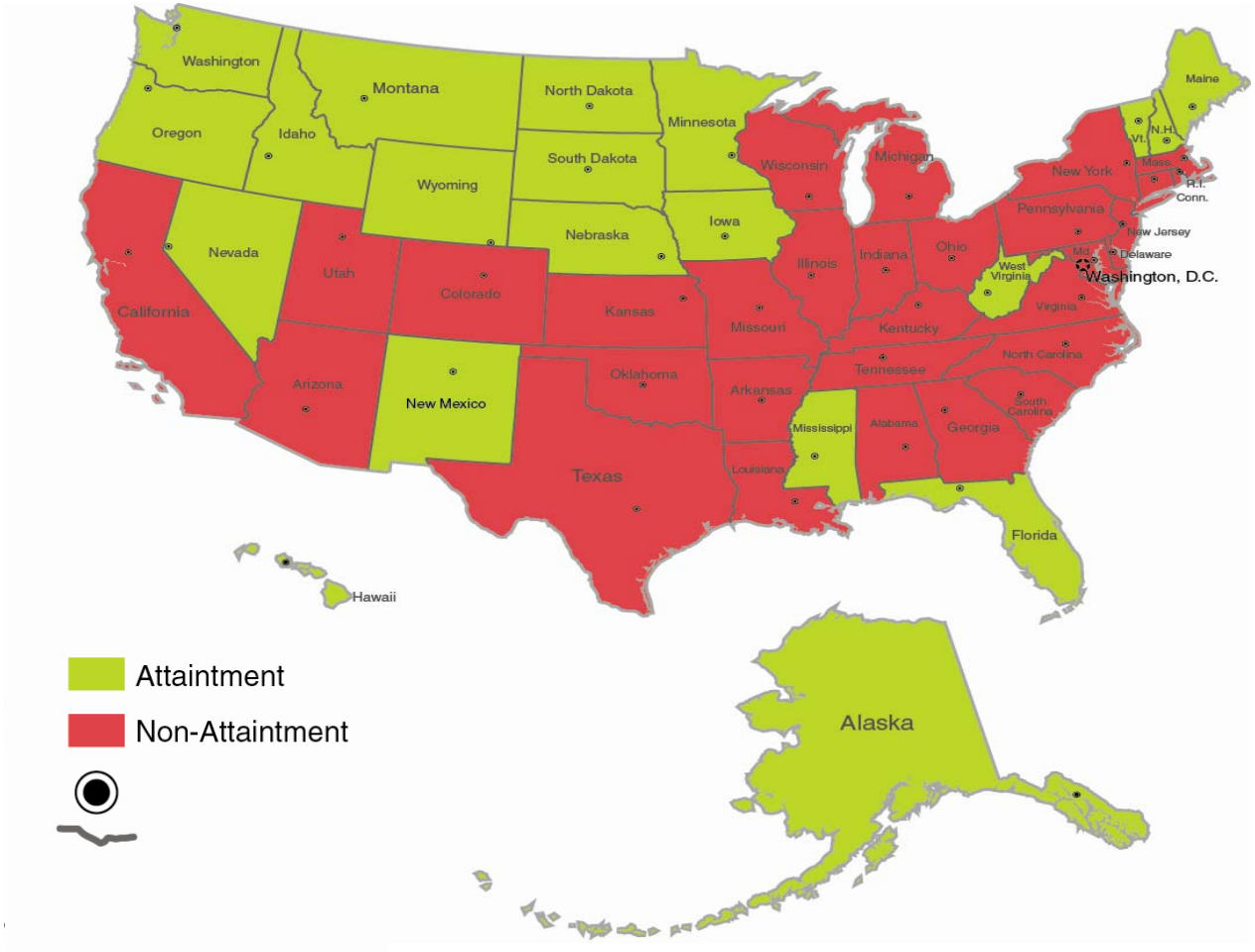


Figure 6

# Non-Attainment States Based on Average Data - 24 Hour PM-2.5 (Map 3)

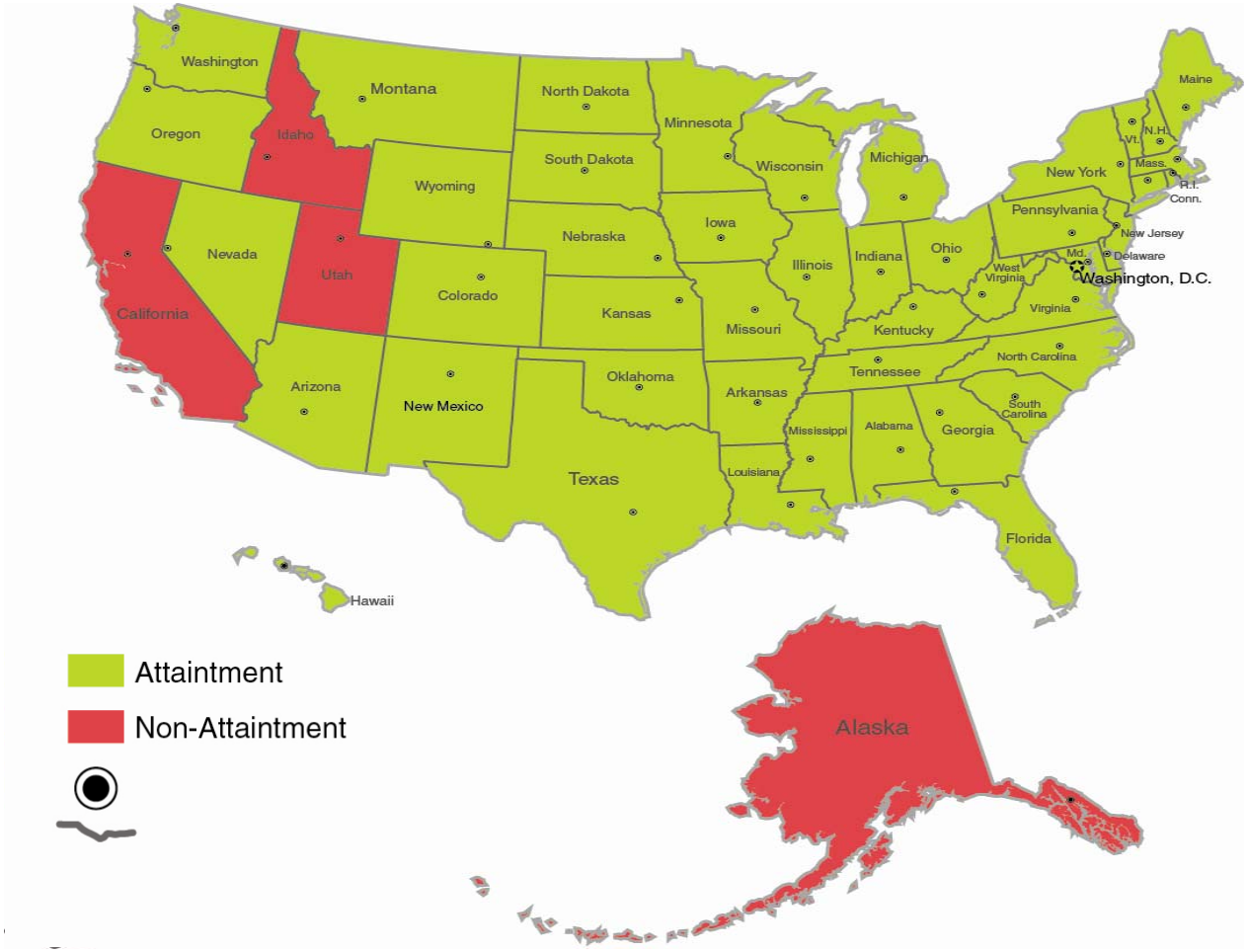


Figure 7

## Non-Attainment States Based on U.S. EPA Method - 24 Hour PM-2.5 (Map 5)

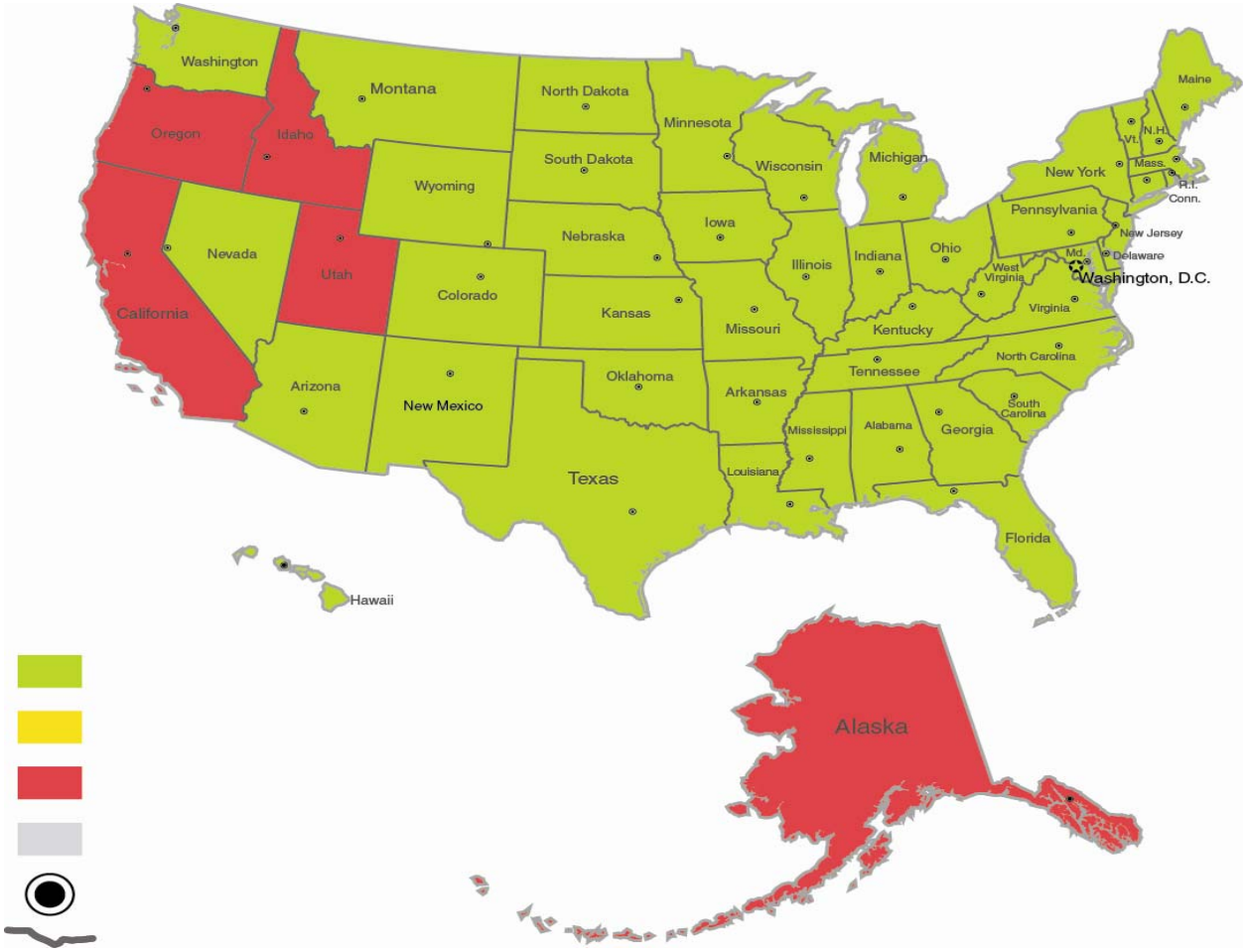


Figure 8

# Non-Attainment States Based on Average Data - Annual PM-2.5 (Map 4)

Figure 9

## Non-Attainment States Based on U.S. EPA Method - Annual PM-2.5 (Map 6)

# The States' View of the Air – 2014

This is the third year for this report. It was originally intended as a complimentary document to the American Lung Association's (ALA) annual report called "The State of the Air."

This report starts with the same air quality data used by the ALA. For this report, it includes data for the period of 2000 – 2012. The review of data in this report differs from the 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 U.S. 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 have design values below the standard and one is slightly above the standard, U.S. 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. This is not to say that some individuals could be exposed to higher levels. However, not all residents in a county are exposed to levels associated with the highest monitor.

A second difference is that when design values for a number of counties are being grouped to determine the overall value for a metropolitan statistical area, the individual design values for each county are weighted by the population of that county to determine a population weighted average value. This value is more consistent with what the population is being exposed to and is in line with what health research professionals use in their analyses.

A 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 a "C". Any level between 80 and 90% of the standard is rated as "B". Any level below 80% is set as an "A". Any level between 101 and 110% of the standard is set as a "D". Any level above 110% of the standard is rated as an "F". This translates into the following ranges.

Table 1
Grading Scheme

| 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 |

This grading scale will need to be revised in the future as the national ambient air quality standards for PM-2.5 and ozone are revised. However, these are the appropriate levels for the standards that were in place during the time period (2010 – 2012).

This report will not report population groups by county or state (those less than 18 or 65 and older, diabetics, etc.). It is very difficult to obtain this data for each state. Also, the methodology which apportions state totals to individual counties is questionable. It is based solely upon a comparison of age distribution of the state versus the county. In many cases other variables, may be important in making these allocations more accurately.

**Information on health effects is not included in this report. Instead we provide links to U.S. EPA websites that contain this information.**

Ozone: **http://epa.gov/airquality/ozonepollution/health.html**

PM-2.5: **http://epa.gov/airquality/particlepollution/health.html**

**The remainder of this report contains tables that are similar to those that are in the ALA report. The ALA report focuses solely on a three year block of data and does not provide any perspective. Our report will look at three year blocks of data from 2000 through 2012 so that the reader can see how the air quality is changing over time.**

## Ozone

**In the 2000 – 2002 period approximately 49 million people (17.2% of the U.S. population) lived in counties that met the ozone standard. During the same time period approximately 96 million people (33.4%) lived in counties where ozone was not monitored. By the 2010 – 2012 period over 128 million people (40.8%) lived in counties that met the ozone standard. During the same time period over 96 million people (29.2%) lived in counties where ozone was not monitored. Figure 1 shows the distribution of people by year.**

## 24 – Hour PM-2.5

**In the 2000 – 2002 period approximately 99 million people (34.4% of the U.S. population) lived in counties that met the 24-hour PM-2.5 standard. During this same time period approximately 106 million people (37.0%) lived in counties where PM-2.5 was not monitored. By the 2010 – 2012 period over 198 million people (62.9%) lived in counties that met the 24-hour PM-2.5 standard. During the same time period nearly 113 million people (36.0%) lived in counties where PM-2.5 was not monitored. Figure 2 shows the distribution of people by year.**

## Annual PM-2.5

**In the 2000 – 2002 period approximately 124 million people (43.2% of the U.S. population) lived in counties that met the annual PM-2.5 standard. During the same time period approximately 106 million people (37.0%) lived in counties where PM-2.5 was not monitored. By the 2010 - 2012 period nearly 200 million people (63.9%) lived in counties that met the annual PM-2.5 standard. During the same time period nearly 113 million people (36.0%) lived in counties where PM-2.5 was not monitored. Figure 3 shows the distribution of people by year.**

## Note:

**For the state summaries, the first table shows monitoring totals at the bottom that include county totals for areas that measure either Ozone or PM-2.5. The second set of tables includes totals monitored by pollutant.**

Table 2

People Breathing Ozone

| Grades | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 9,755,126 | 4,694,728 | 4,003,383 | 5,745,195 | 5,389,555 | 7,818,727 | 5,175,867 | 7,878,534 | 11,945,133 | 15,045,046 | 16,724,008 |
| B | 14,260,282 | 13,717,670 | 14,239,076 | 15,907,608 | 16,103,666 | 15,411,681 | 21,792,692 | 28,041,086 | 47,031,734 | 41,619,970 | 33,864,897 |
| C | 25,437,918 | 24,794,393 | 32,618,323 | 45,331,300 | 55,700,223 | 41,564,050 | 61,603,127 | 91,695,178 | 100,095,637 | 99,445,465 | 77,410,705 |
| D | 37,975,358 | 40,709,552 | 58,260,198 | 67,837,033 | 66,640,317 | 69,991,995 | 69,875,747 | 58,665,292 | 50,253,319 | 54,558,315 | 70,510,160 |
| F | 103,587,551 | 110,959,278 | 89,650,559 | 65,470,859 | 60,114,243 | 70,673,505 | 47,217,432 | 24,029,669 | 6,771,151 | 10,136,744 | 21,083,781 |
| Subtotals | 191,016,235 | 194,875,621 | 198,771,639 | 200,291,995 | 203,948,004 | 205,357,958 | 205,664,865 | 210,109,759 | 216,096,974 | 220,805,540 | 219,693,551 |
| Not Monitored | 96,608,958 | 95,232,312 | 94,833,659 | 95,224,604 | 94,431,908 | 95,873,249 | 98,429,101 | 96,661,870 | 92,648,564 | 90,786,377 | 91,722,257 |
| Totals | 287,625,193 | 290,107,933 | 292,805,298 | 295,516,599 | 298,379,912 | 301,231,207 | 304,093,966 | 306,771,529 | 308,745,538 | 311,591,917 | 314,004,040 |

Table 3

People Breathing Short-term Particle Pollution (24-hour PM-2.5)

| Grades | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 35,071,374 | 42,179,887 | 47,987,105 | 38,859,132 | 51,528,084 | 56,939,943 | 68,136,521 | 102,193,083 | 129,250,050 | 151,875,673 | 163,015,549 |
| B | 33,921,410 | 25,781,038 | 34,167,227 | 38,423,718 | 36,478,624 | 36,276,741 | 47,155,529 | 41,508,829 | 44,699,084 | 22,316,651 | 32,498,178 |
| C | 30,006,231 | 33,645,250 | 37,783,393 | 41,572,116 | 41,820,903 | 36,628,468 | 39,248,888 | 33,240,113 | 7,321,166 | 19,930,676 | 2,074,996 |
| D | 35,391,648 | 31,751,170 | 31,741,258 | 26,928,939 | 27,526,257 | 30,095,048 | 21,438,609 | 6,011,530 | 2,941,847 | 36,546 | 184,186 |
| F | 46,872,140 | 47,775,569 | 36,918,678 | 42,898,526 | 28,657,056 | 27,274,244 | 7,577,282 | 6,510,203 | 3,738,532 | 4,300,575 | 3,042,948 |
| Subtotals | 181,262,803 | 181,112,924 | 187,597,671 | 188,682,431 | 186,010,924 | 187,214,434 | 183,557,829 | 189,463,257 | 187,950,679 | 198,785,021 | 200,815,857 |
| Not Monitored | 106,382,390 | 108,995,009 | 105,207,827 | 106,824,168 | 112,368,988 | 114,016,773 | 120,536,137 | 117,308,272 | 120,794,859 | 112,806,896 | 113,590,425 |
| Totals | 287,625,193 | 290,107,933 | 292,805,298 | 295,516,599 | 298,379,912 | 301,231,207 | 304,093,966 | 306,771,529 | 308,746,538 | 311,591,917 | 314,004,040 |

Table 4

People Breathing Year Round Particle Pollution (Annual PM-2.5)

| Grades | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 56,836,194 | 61,489,443 | 71,607,095 | 70,701,800 | 78,176,385 | 83,106,618 | 92,885,878 | 122,487,530 | 170,370,433 | 171,038,744 | 187,795,282 |
| B | 34,560,157 | 36,925,364 | 39,692,401 | 38,788,817 | 38,827,535 | 36,294,350 | 46,112,538 | 47,329,098 | 13,296,633 | 13,927,988 | 10,897,521 |
| C | 32,860,806 | 39,864,699 | 40,884,495 | 35,514,269 | 37,400,045 | 47,480,532 | 40,727,883 | 17,797,628 | 3,851,434 | 12,850,514 | 1,978,594 |
| D | 28,087,112 | 24,632,741 | 18,873,078 | 24,657,312 | 26,418,093 | 17,360,943 | 2,492,617 | 921,478 | 442,179 | 967,775 | 0 |
| F | 28,918,534 | 18,227,667 | 16,540,592 | 19,020,433 | 5,185,566 | 2,971,991 | 1,338,913 | 948,523 | 0 | 0 | 152,218 |
| Subtotals | 181,252,803 | 181,112,924 | 187,597,671 | 188,682,431 | 186,010,924 | 187,214,434 | 183,557,829 | 189,463,257 | 187,950,679 | 198,785,021 | 200,815,857 |
| Not Monitored | 106,382,390 | 108,995,009 | 105,207,827 | 106,824,168 | 112,368,988 | 114,016,773 | 120,536,137 | 117,308,272 | 120,794,859 | 112,806,896 | 113,590,425 |
| Totals | 287,625,193 | 290,107,933 | 292,805,298 | 295,516,599 | 298,379,912 | 301,231,207 | 304,093,966 | 306,771,529 | 308,746,538 | 311,591,917 | 314,004,040 |

Table 5
High Cities - Year Round Particle Pollution (Annual PM-2.5)
(2010 -2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| **1** | **Madera, CA** | **18.9** | **F** | **152,218** |
| 2 | Modesto, CA | 14.9 | C | 521,726 |
| 3 | Bakersfield, CA | 14.8 | C | 656,158 |
| 3 | Visalia-Porterville, CA | 14.8 | C | 451,977 |
| 5 | Johnstown, PA | 12.9 | B | 141,584 |
| 5 | Terre Haute, IN | 12.9 | B | 172,493 |
| 7 | Hagerstown-Martinsburg, MD-WV | 12.6 | B | 256,278 |
| 8 | Canton-Massilon, OH | 12.4 | B | 403,455 |
| 9 | Cincinnati, OH-KY-IN | 12.3 | B | 2,128,603 |
| 10 | Indianapolis-Carmel-Anderson, IN | 12.2 | B | 1,948,982 |
| 11 | South Bend-Mishawaka, IN-MI | 12.1 | B | 318,586 |
| 11 | Lancaster, PA | 12.1 | B | 526,823 |
| 11 | Louisville-Jefferson County, KY-IN | 12.1 | B | 1,251,351 |
| 11 | Dayton, OH | 12.1 | B | 800,972 |
| 11 | Wheeling, WV-OH | 12.1 | B | 146,420 |
| 16 | Evansville, IN-KY | 12.0 | B | 313,433 |
| 17 | Springfield, OH | 11.9 | A | 137,206 |
| 17 | Owensboro, KY | 11.9 | A | 116,030 |
| 17 | Rome, GA | 11.9 | A | 96,177 |
| 17 | Riverside-San Bernardino-Ontario, CA | 11.9 | A | 4,350,096 |
| 21 | Weirton-Steubenville, WV-OH | 11.8 | A | 122,547 |
| 21 | Macon, GA | 11.8 | A | 232,723 |
| 21 | Lafayette, LA | 11.8 | A | 474,415 |
| 21 | Parkersburg-Vienna, WV | 11.8 | A | 92,548 |

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

Of the top 24 cities, only one has air quality that exceeds the national ambient air quality standard. Three cities are rated as C. Twelve cities are rated as B and eight are rated as A.

Table 6
Highest Cities – Short Term Particle Pollution (24-hour PM-2.5)
(2010 -2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| **1** | **Madera, CA** | **51** | **F** | **152,218** |
| **2** | **Bakersfield, CA** | **50** | **F** | **656,158** |
| **3** | **Modesto, CA** | **49** | **F** | **521,726** |
| **4** | **Visalia-Porterville, CA** | **47** | **F** | **451,977** |
| **5** | **Fairbanks, AK** | **46** | **F** | **100,272** |
| **6** | **Fresno, CA** | **41** | **F** | **947,895** |
| **7** | **Logan, UT-ID** | **36** | **D** | **128,306** |
| 8 | Ogden-Clearfield, UT | 35 | C | 612,441 |
| 9 | Salt Lake City, UT | 33 | C | 1,123,712 |
| 9 | South Bend-Mishawaka, IN-MI | 33 | C | 318,586 |
| 11 | Yakima, WA | 31 | B | 246,977 |
| 11 | Lancaster, PA | 31 | B | 526,823 |
| 11 | Hagerstown-Martinsburg, MD-WV | 31 | B | 256,278 |
| 11 | Johnstown, PA | 31 | B | 141,584 |
| 11 | Elkhart-Goshen, IN | 31 | B | 199,619 |
| 16 | Gettysburg, PA | 30 | B | 101,482 |
| 16 | Harrisburg-Carlisle, PA | 30 | B | 553,980 |
| 16 | Terre Haute, IN | 30 | B | 172,493 |
| 19 | Allentown-Nethlehem-Easton, PA-NJ | 29 | B | 827,171 |
| 19 | York-Hanover, PA | 29 | B | 437,846 |
| 19 | State College, PA | 29 | B | 155,171 |
| 19 | Provo-Orem, UT | 29 | B | 550,845 |
| 19 | Green Bay, WI | 29 | B | 311,098 |
| 19 | Riverside-San Bernardino-Ontario, CA | 29 | B | 4,350,096 |
| 19 | Los Angeles-Long Beach-Anaheim, CA | 29 | B | 13,052,921 |
| 19 | Indianapolis-Carmel-Anderson, CA | 29 | B | 1,948,982 |

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

Of the 26 highest cities, 6 have ratings of F, 1 is a D, 3 are C and 16 are B.

Table 7
Highest 8-Hour Ozone Cities
(2010 -2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Riverside-San Bernardino-Ontario, CA | 0.093 | F | 4,350,096 |
| 2 | Fresno, CA | 0.089 | F | 947,895 |
| 2 | Visalia-Porterville, CA | 0.089 | F | 451,977 |
| 4 | Bakersfield, CA | 0.088 | F | 656,158 |
| 5 | Sheboygan, WI | 0.087 | F | 115,009 |
| 6 | Bridgeport-Stamford-Norwalk, CT | 0.085 | F | 933,835 |
| 7 | Baltimore-Columbia-Towson, MD | 0.082 | D | 2,752,149 |
| 7 | Dallas-Fort Worth-Arlington, TX | 0.082 | D | 6,700,991 |
| 7 | Hanford-Corcoran, CA | 0.082 | D | 151,364 |
| 7 | Merced, CA | 0.082 | D | 262,305 |
| 7 | Modesto, CA | 0.082 | D | 521,726 |
| 7 | Muskegon, MI | 0.082 | D | 170,182 |
| 7 | Niles-Benton Harbor, MI | 0.082 | D | 156,067 |
| 7 | Louisville-Jefferson County, KY-IN | 0.082 | D | 1,251,351 |
| 15 | Washington-Arlington-Alexandria, DC | 0.081 | D | 5,860,340 |
| 15 | Lancaster, PA | 0.081 | D | 526,823 |
| 15 | Norwich-New London, CT | 0.081 | D | 274,170 |
| 15 | Racine, WI | 0.081 | D | 194,797 |
| 15 | Salisbury, MD-DE | 0.081 | D | 381,868 |
| 15 | Philadelphia-Camden, PA | 0.081 | D | 6,018,800 |
| 21 | Houston, TX | 0.080 | D | 6,177,035 |
| 21 | Owensboro, KY | 0.080 | D | 116,030 |
| 23 | Atlanta-Sandy Springs-Roswell, GA | 0.079 | D | 5,457,831 |
| 23 | New York-Newark, NY-NJ | 0.079 | D | 19,831,858 |
| 23 | Dover, DE | 0.079 | D | 167,626 |
| 23 | Longview, WA | 0.079 | D | 318,675 |
| 23 | Tulsa, OK | 0.079 | D | 951,880 |
| 23 | St. Louis, MO-IL | 0.079 | D | 2,795,294 |
| 23 | Sacramento-Roseville, CA | 0.079 | D | 2,196,482 |

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

Of the 29 highest rated cities, six are rated F, while 23 are rated D.

Table 8

Highest Counties - Short Term Particle Pollution (24-hour PM-2.5)
(2010 -2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| **1** | **Madera, CA** | **51** | **F** | 152,218 |
| **2** | **Kern, CA** | **50** | **F** | 856,158 |
| **3** | **Stanislaus, CA** | **49** | **F** | 521,726 |
| **4** | **Tulare, CA** | **47** | **F** | 451,977 |
| **5** | **Fairbanks, AK** | **46** | **F** | 100,272 |
| **6** | **Shoshone, ID** | **42** | **F** | 12,702 |
| **7** | **Fresno, CA** | **41** | **F** | 947,895 |
| **8** | **Box Elder, UT** | **37** | **D** | 50,171 |
| **8** | **Lemhi, ID** | **37** | **D** | 8,758 |
| **10** | **Cache, UT** | **36** | **D** | 115,520 |
| **10** | **Inyo, CA** | **36** | **D** | 18,495 |
| 12 | Weber, UT | 35 | C | 236,640 |
| 12 | Davis, UT | 35 | C | 315,809 |
| 14 | Salt Lake, UT | 34 | C | 1,063,842 |
| 14 | Silver Bow, MT | 34 | C | 34,403 |
| 16 | Lake, OR | 33 | C | 7,771 |
| 16 | Lewis & Clark, MT | 33 | C | 64,776 |
| 16 | St. Joseph, IN | 33 | C | 266,344 |
| 16 | Spencer, IN | 33 | C | 20,837 |
| 20 | Klamath, OR | 32 | C | 65,912 |
| 20 | Plumas, CA | 32 | C | 19,399 |
| 22 | Berkeley, WV | 31 | B | 107,048 |
| 22 | Yakima, WA | 31 | B | 246,977 |
| 22 | Northampton, PA | 31 | B | 299,267 |
| 22 | Lancaster, PA | 31 | B | 526,823 |
| 22 | Delaware, PA | 31 | B | 561,098 |
| 22 | Cambria, PA | 31 | B | 141,584 |
| 22 | Elkhart, IN | 31 | B | 199,619 |
| 22 | Sacramento, CA | 31 | B | 1,450,121 |

DV – Design Value

Of the 29 highest counties, seven are rated F, four are D, ten are C and eight are rated B.

Table 9
Highest Counties Year Round Particle Pollution (Annual PM-2.5)
(2010-2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| **1** | **Madera, CA** | **18.9** | **F** | **152,218** |
| **2** | **Stanislaus, CA** | **14.9** | **C** | **521,726** |
| **3** | **Tulare, CA** | **14.8** | **C** | **451,977** |
| **3** | **Kern, CA** | **14.8** | **C** | **856,158** |
| **5** | **Berkeley, WV** | **13.6** | **C** | **107,098** |
| **6** | **St. Bernard, LA** | **13.5** | **C** | **41,635** |
| **7** | **Delaware, PA** | **13.2** | **B** | **561,098** |
| **8** | **Shoshone, ID** | **13.2** | **B** | **12,702** |
| **9** | **Cambria, PA** | **12.9** | **B** | **141,584** |
| **10** | **Marshall, WV** | **12.8** | **B** | **32,674** |
| **11** | **Madison, WI** | **12.7** | **B** | **267,883** |
| **12** | **Brooke, WV** | **12.6** | **B** | **23,353** |
| **13** | **Hamilton, OH** | **12.5** | **B** | **802,038** |
| **14** | **Stark, OH** | **12.4** | **B** | **374,868** |
| **14** | **Butler, OH** | **12.4** | **B** | **370,589** |
| **14** | **Porter, IN** | **12.4** | **B** | **165,682** |
| **14** | **Marion, IN** | **12.4** | **B** | **919,977** |
| **14** | **Riverside, CA** | **12.4** | **B** | **2,267,783** |
| **19** | **Beaver, PA** | **12.3** | **B** | **170,245** |
| **19** | **Montgomery, OH** | **12.3** | **B** | **534,325** |
| **19** | **Dubois, IN** | **12.3** | **B** | **42,07144** |
| **19** | **Clayton, GA** | **12.3** | **B** | **265,888** |
| **19** | **Russell, AL** | **12.3** | **B** | **57,820** |

DV – Design Value

Of the 23 highest counties, only one is rated a F. All others meet the National Ambient Air Quality Standards with five being rated as C, and 17 rated as B.

Table 10
Highest Ozone Counties
(2010 -2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | San Bernardino, CA | 0.096 | F | 2,081,313 |
| 2 | Riverside, CA | 0.090 | F | 2,268,783 |
| 3 | Tulare, CA | 0.089 | F | 451,977 |
| 3 | Fresno, CA | 0.089 | F | 947,895 |
| 5 | Camden, NJ | 0.088 | F | 513,539 |
| 5 | Harford, MD | 0.088 | F | 248,622 |
| 5 | Kern, CA | 0.088 | F | 856,158 |
| 8 | Sheboygan, WI | 0.087 | F | 115,009 |
| 8 | Fairfax, VA | 0.087 | F | 1,118,602 |
| 8 | Gloucester, NJ | 0.087 | F | 289,586 |
| 8 | Anne Arundel, MD | 0.087 | F | 550,488 |
| 8 | Oldham, KY | 0.087 | F | 61,412 |
| 13 | Arlington, VA | 0.086 | F | 221,045 |
| 13 | Ocean, NJ | 0.086 | F | 580,470 |
| 13 | Cecil, MD | 0.086 | F | 101,696 |
| 16 | Kenosha, WI | 0.085 | F | 187,536 |
| 16 | Middlesex, NJ | 0.085 | F | 823,041 |
| 16 | Prince Georges, MD | 0.085 | F | 885,138 |
| 16 | Fairfield, CT | 0.085 | F | 933,835 |
| 20 | Tarrant, TX | 0.084 | F | 1,880,153 |
| 20 | Allegan, MI | 0.084 | F | 112,039 |
| 20 | Charles, MD | 0.084 | F | 150,592 |
| 20 | Calvert, MD | 0.084 | F | 89,628 |
| 20 | Fulton, GA | 0.084 | F | 977,773 |

DV – Design Value

Of the top 24 counties, all are rated as F.

Table 11
Cleanest U.S. Cities for Short-term Particle Pollution (24-hr PM-2.5)
(2010 -2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Prescott, AZ | 9 | A | 212,637 |
| 1 | Santa Fe, NM | 9 | A | 146,375 |
| 3 | Tucson, AZ | 11 | A | 992,394 |
| 4 | Flagstaff, AZ | 12 | A | 132,088 |
| 4 | Cheyenne, WY | 12 | A | 94,483 |
| 6 | Sierra Vista-Douglas, AZ | 13 | A | 132,088 |
| 6 | Santa Cruz-Watsonville, CA | 13 | A | 266,776 |
| 6 | Urban Honolulu, HI | 13 | A | 976,372 |
| 9 | Casper, WY | 14 | A | 78,621 |
| 9 | Kahului-Wailuku-Lahaina, HI | 14 | A | 158,316 |
| 9 | Farmington, NM | 14 | A | 128,529 |
| 9 | Redding, CA | 14 | A | 178,586 |
| 9 | Palm Bay-Melbourne-Titusville, FL | 14 | A | 547,307 |
| 9 | Cape Coral-Fort Myers, FL | 14 | A | 645,293 |
| 9 | Salinas, CA | 14 | A | 426,762 |
| 16 | Miami-Fort Lauderdale, FL | 15 | A | 4,058,826 |
| 16 | Rapid City, SD | 15 | A | 138,738 |
| 16 | Pueblo, CO | 15 | A | 160,852 |
| 16 | Yuma, AZ | 15 | A | 200,022 |
| 16 | Las Vegas-Henderson, NV | 15 | A | 2,000,759 |
| 16 | North Port-Sarasota, FL | 15 | A | 720,042 |
| 16 | Bismarck, ND | 15 | A | 120,060 |
| 23 | Orlando-Kissimmee, FL | 16 | A | 2,223,674 |
| 23 | Colorado Springs, CO | 16 | A | 668,353 |
| 23 | Lakeland-Winter Haven, FL | 16 | A | 616,158 |
| 23 | Tampa-St. Petersburg, FL | 16 | A | 2,842,878 |

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

Of the 26 cleanest cities, all are rated as A.

Table 12
Cleanest U.S. Cities for Year Round Particle Pollution (Annual PM-2.5)
(2010 -2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Prescott, AZ | 4.0 | A | 212,637 |
| 2 | Santa Fe, NM | 4.5 | A | 146,375 |
| 3 | Farmington, NM | 4.7 | A | 128,529 |
| 4 | Casper, WY | 4.8 | A | 78,621 |
| 4 | Cheyenne, WY | 4.8 | A | 94,483 |
| 6 | Pocatello, ID | 5.1 | A | 83,800 |
| 7 | Flagstaff, AZ | 5.2 | A | 132,088 |
| 8 | Anchorage, AK | 5.3 | A | 392,535 |
| 8 | Redding, CA | 5.3 | A | 178,586 |
| 10 | Tucson, AZ | 5.4 | A | 992,394 |
| 11 | Duluth, MN-WI | 5.5 | A | 279,452 |
| 11 | Rapid City, SD | 5.5 | A | 138,738 |
| 13 | Kahului-Wailuku-Lahaina, HI | 5.7 | A | 158,316 |
| 14 | Las Vegas-Henderson, NV | 5.8 | A | 2,000,759 |
| 15 | Urban Honolulu, HI | 5.9 | A | 976,372 |
| 16 | Burlington-South Burlington, VT | 6.1 | A | 213,701 |
| 16 | Reno, NV | 6.1 | A | 433,843 |
| 16 | Salinas, CA | 6.1 | A | 426,762 |
| 19 | Pueblo, CO | 6.2 | A | 160,852 |
| 20 | Seattle-Tacoma-Bellevue, WA | 6.3 | A | 3,552,157 |
| 20 | Albuquerque, NM | 6.3 | A | 901,700 |
| 20 | Colorado Springs, CO | 6.3 | A | 668,353 |
| 20 | Santa Cruz-Watsonville, CA | 6.3 | A | 266,776 |
| 24 | Fort Collins, CO | 6.5 | A | 310,487 |
| 24 | Boulder, CO | 6.5 | A | 305,318 |
| 24 | Palm Bay-Melbourne-Titusville, FL | 6.5 | A | 547,307 |

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

Of the 26 cleanest cities all are rated as A.

Table 13
Cleanest U.S. Cities for Ozone Air Pollution
(2010 - 2012)

| Rank | MSA | PW DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Urban Honolulu, HI | 0.045 | A | 976,372 |
| 2 | Anchorage, AK | 0.046 | A | 392,535 |
| 2 | Bellingham, WA | 0.046 | A | 205,262 |
| 4 | Santa Rosa, CA | 0.047 | A | 491,829 |
| 5 | Lincoln, NE | 0.052 | A | 310,342 |
| 6 | Santa Cruz-Watsonville, CA | 0.053 | A | 266,776 |
| 7 | Seattle-Tacoma-Bellevue, WA | 0.056 | A | 3,552,157 |
| 7 | Olympia-Turnwater, WA | 0.056 | A | 258,332 |
| 9 | Duluth, MN-WI | 0.057 | A | 279,452 |
| 9 | Bangor, ME | 0.057 | A | 153,746 |
| 10 | Mount Vernon-Anacortes, WA | 0.057 | A | 118,222 |
| 10 | Salinas, CA | 0.057 | A | 426,762 |
| 12 | Bismarck, ND | 0.058 | A | 120,060 |
| 12 | Portland-Vancouver, OR-WA | 0.058 | A | 2,289,800 |
| 12 | San Francisco-Oakland, CA | 0.058 | A | 4,455,560 |
| 15 | Bend-Redmond, OR | 0.059 | A | 162,277 |
| 15 | Eugene, OR | 0.059 | A | 354,542 |
| 15 | Naples-Marco Island, FL | 0.059 | A | 332,427 |
| 15 | Salem, OR | 0.059 | A | 396,338 |
| 15 | Spokane, WA | 0.059 | A | 532,253 |
| 15 | Tuscaloosa, AL | 0.059 | A | 233,389 |
| 15 | Omaha-Council Bluffs, NE-IA | 0.059 | A | 885,624 |
| 22 | Santa Maria-Santa Barbara, CA | 0.060 | A | 431,249 |
| 23 | Fargo, ND-MN | 0.061 | B | 216,312 |
| 23 | Lewiston-Auburn, ME | 0.061 | B | 107,609 |
| 23 | Medford, OR | 0.061 | B | 206,412 |
| 23 | St. Cloud, MN | 0.061 | B | 190,471 |
| 23 | Des Moines, IA | 0.061 | B | 588,999 |
| 23 | Rapid City, SD | 0.061 | B | 138,738 |

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

Of the cleanest 28 cities, 22 are rated A, while 6 are rated B.

Table 14
Cleanest Counties – Short Term Particle Pollution (24-hour PM-2.5)
(2010 -2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Bannock, ID | 8 | A | 83,800 |
| 2 | Yavapai, AZ | 9 | A | 212,637 |
| 2 | Lake, CA | 9 | A | 63,983 |
| 2 | Santa Fe, NM | 9 | A | 146,375 |
| 5 | La Plata, CO | 10 | A | 52,401 |
| 5 | Pima, AZ | 11 | A | 992,394 |
| 5 | Billings, ND | 11 | A | 905 |
| 8 | Coconino, AZ | 12 | A | 136,011 |
| 8 | Hawaii, HI | 12 | A | 189,191 |
| 8 | Rosebud, MT | 12 | A | 9,396 |
| 8 | Jackson, SD | 12 | A | 3,191 |
| 8 | Laramie, WY | 12 | A | 94,483 |
| 13 | Cochise, AZ | 13 | A | 132,088 |
| 13 | Santa Cruz, AZ | 13 | A | 266,776 |
| 13 | Montezuma, CO | 13 | A | 25,431 |
| 13 | Honolulu, HI | 13 | A | 976,372 |
| 13 | Hancock, ME | 13 | A | 54,558 |
| 13 | Custer, ND | 13 | A | 8,339 |
| 13 | Park, WY | 13 | A | 28,702 |
| 13 | Teton, WY | 13 | A | 21,675 |
| 21 | Monterey, CA | 14 | A | 426,762 |
| 21 | Shasta, CA | 14 | A | 178,586 |
| 21 | Brevard, FL | 14 | A | 547,307 |
| 21 | Lee, FL | 14 | A | 645,293 |
| 21 | Miami-Dade, FL | 14 | A | 2,591,035 |
| 21 | Maui, HI | 14 | A | 158,226 |
| 21 | San Juan, NM | 14 | A | 128,529 |
| 21 | Mercer, ND | 14 | A | 8,486 |
| 21 | King, WA | 14 | A | 2,007,440 |
| 21 | Campbell, WY | 14 | A | 47,874 |
| 21 | Natrona, WY | 14 | A | 78,621 |
| 21 | Sweetwater, WY | 14 | A | 45,267 |

DV – Design Value

The cleanest 32 counties are all rated as A.

Table 15
Cleanest Counties - Year Round Particle Pollution (Annual PM-2.5)
(2010 -2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Lake, CA | 3.5 | A | 63,983 |
| 2 | Jackson, SD | 3.8 | A | 3,191 |
| 3 | Yavapai, AZ | 4.0 | A | 212,637 |
| 4 | La Plata, CO | 4.2 | A | 52,401 |
| 5 | Essex, NY | 4.3 | A | 38,961 |
| 5 | Custer, SD | 4.3 | A | 8,339 |
| 7 | Billings, ND | 4.4 | A | 905 |
| 8 | Santa Fe, NM | 4.5 | A | 146,375 |
| 9 | Hancock, ME | 4.7 | A | 54,558 |
| 9 | San Juan, NM | 4.7 | A | 128,529 |
| 9 | Park, WY | 4.7 | A | 28,702 |
| 12 | Laramie, WY | 4.8 | A | 94,483 |
| 12 | Natrona, WY | 4.8 | A | 78,621 |
| 14 | Rosebud, MT | 4.9 | A | 9,396 |
| 15 | Campbell, WY | 5.0 | A | 47,874 |
| 15 | Sublette, WY | 5.0 | A | 10,368 |
| 15 | Teton, WY | 5.0 | A | 21,675 |
| 18 | Bannock, ID | 5.1 | A | 83,800 |
| 19 | Anchorage, AK | 5.2 | A | 298,610 |
| 19 | Coconino, AZ | 5.2 | A | 136,011 |
| 19 | Siskiyou, CA | 5.2 | A | 44,154 |
| 22 | Shasta, CA | 5.3 | A | 78,586 |
| 22 | Ashland, WI | 5.3 | A | 15,992 |
| 24 | Pima, AZ | 5.4 | A | 992,394 |
| 25 | Matanuska, AK | 5.5 | A | 93,925 |
| 25 | St. Louis, MN | 5.5 | A | 200,319 |

DV – Design Value

The cleanest 26 counties are all rated as A.

Table 16
Cleanest Counties - Ozone Air Pollution
(2010 -2012)

| Rank | County/State | DV | Grade | 2012 Population |
|---|---|---|---|---|
| 1 | Franklin, NY | 0.038 | A | 51,795 |
| 2 | Anchorage, AK | 0.045 | A | 298,610 |
| 2 | Honolulu, HI | 0.045 | A | 976,372 |
| 4 | Humboldt, CA | 0.046 | A | 134,827 |
| 4 | Whatcom, CA | 0.046 | A | 205,262 |
| 6 | San Francisco, CA | 0.047 | A | 825,863 |
| 6 | Sonoma, CA | 0.047 | A | 491,829 |
| 8 | Arostook, ME | 0.051 | A | 70,868 |
| 8 | Columbia, OR | 0.051 | A | 49,286 |
| 10 | Denali, AK | 0.052 | A | 1,875 |
| 10 | Marin, CA | 0.052 | A | 256,069 |
| 10 | Lancaster, NE | 0.052 | A | 293,407 |
| 13 | San Mateo, CA | 0.053 | A | 739,311 |
| 13 | Santa Cruz, CA | 0.053 | A | 266,776 |
| 15 | Oxford, ME | 0.055 | A | 57,481 |
| 15 | Carlton, MN | 0.055 | A | 35,348 |
| 15 | Flathead, MT | 0.055 | A | 91,633 |
| 15 | Powder River, MT | 0.055 | A | 1,763 |
| 15 | Pierce, WA | 0.055 | A | 811,681 |
| 20 | Churchill, NV | 0.056 | A | 24,375 |
| 20 | Clark, WA | 0.056 | A | 438,287 |
| 20 | King, WA | 0.056 | A | 2,007,440 |
| 20 | Thurston, WA | 0.056 | A | 258,332 |
| 20 | Big Horn, WY | 0.056 | A | 11,794 |
| 25 | Monterey, CA | 0.057 | A | 426,762 |
| 25 | Penobscot, ME | 0.057 | A | 153,746 |
| 25 | St. Louis, MN | 0.057 | A | 200,319 |
| 25 | Rosebud, MT | 0.057 | A | 9,396 |
| 25 | Multnomah, OR | 0.057 | A | 759,256 |
| 25 | Skagit, WA | 0.057 | A | 118,222 |

DV – Design Value

Of the 30 cleanest counties, all are rated A.

# DELAWARE

## Ozone

**No progress has been made in ozone levels in Delaware. In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2010 – 2012 this was still the case. Figure DE-1 shows the distribution of people by year.**

## 24-Hour PM-2.5

**Significant progress has been made in 24-hour PM-2.5 levels in Delaware. In the 2000 – 2002 time period, approximately 0.1 million people (16.4%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2010 -2012 this was approximately 0.9 million people (100%). Figure DE-2 shows the distribution of people by year.**

## Annual PM-2.5

**Significant progress has been made in annual PM-2.5 levels in Delaware. In the 2000 – 2002 time period, approximately 0.6 million people (79.6%) lived in counties where annual PM-2.5 levels met the standard. By 2010 – 2012 this had increased to approximately 0.9 million people (100%). Figure DE-3 shows the distribution of people by year.**

Table DE-1

2010 – 2012

| | | OZONE | | | PARTICLE POLLUTION (PM-2.5) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| County | Population | Avg. DV | Grade | MM | Avg. 24-Hr DV | Grade | Avg. Ann DV | Grade | MM |
| **Kent** | **167,626** | **0.079** | **D** | **N** | 22 | A | 8.7 | A | Y |
| **New Castle** | **546,076** | **0.080** | **D** | **Y** | 24 | A | 9.8 | A | Y |
| **Sussex** | **203,390** | **0.081** | **D** | **Y** | 24 | A | 8.9 | A | N |
| | | | | | | | | | |
| **Subtotal** | **917,092** | | | | | | | | |
| **Not Monitored** | **0** | | | | | | | | |
| **Total** | **917,092** | | | | | | | | |

DV – Design Value ND - No Data MM – Multiple Monitors

# DELAWARE

## Table DE-2

### People Breathing Ozone

| Grade | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 696,979 | 700,789 | 164,834 | 0 |
| D | 0 | 0 | 0 | 667,928 | 859,268 | 871,749 | 883,874 | 194,751 | 197,145 | 742,301 | 917,092 |
| F | 806,169 | 818,003 | 830,803 | 177,222 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |
| NM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |

### People Breathing Short-term Particle Pollution (24-Hour PM-2.5)

| Grade | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 354,832 | 897,934 | 907,135 | 917,092 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 883,874 | 536,898 | 0 | 0 | 0 |
| C | 131,824 | 134,605 | 658,286 | 845,150 | 859,268 | 871,749 | 0 | 0 | 0 | 0 | 0 |
| D | 510,158 | 683,398 | 172,517 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | 164,187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |
| NM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |

### People Breathing Year Round Particle Pollution (Annual PM-2.5)

| Grade | 2000-2002 | 2001-2003 | 2002-2004 | 2003-2005 | 2004-2006 | 2005-2007 | 2006-2008 | 2007-2009 | 2008-2010 | 2009-2011 | 2010-2012 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 354,832 | 897,934 | 907,135 | 917,092 |
| B | 131,824 | 303,234 | 311,859 | 321,807 | 332,094 | 341,194 | 883,874 | 536,898 | 0 | 0 | 0 |
| C | 510,158 | 514,769 | 518,944 | 523,343 | 527,174 | 530,555 | 0 | 0 | 0 | 0 | 0 |
| D | 164,187 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |
| NM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 806,169 | 818,003 | 830,803 | 845,150 | 859,268 | 871,749 | 883,874 | 891,730 | 897,934 | 907,135 | 917,092 |

NM – Not Monitored

Figure DE-1

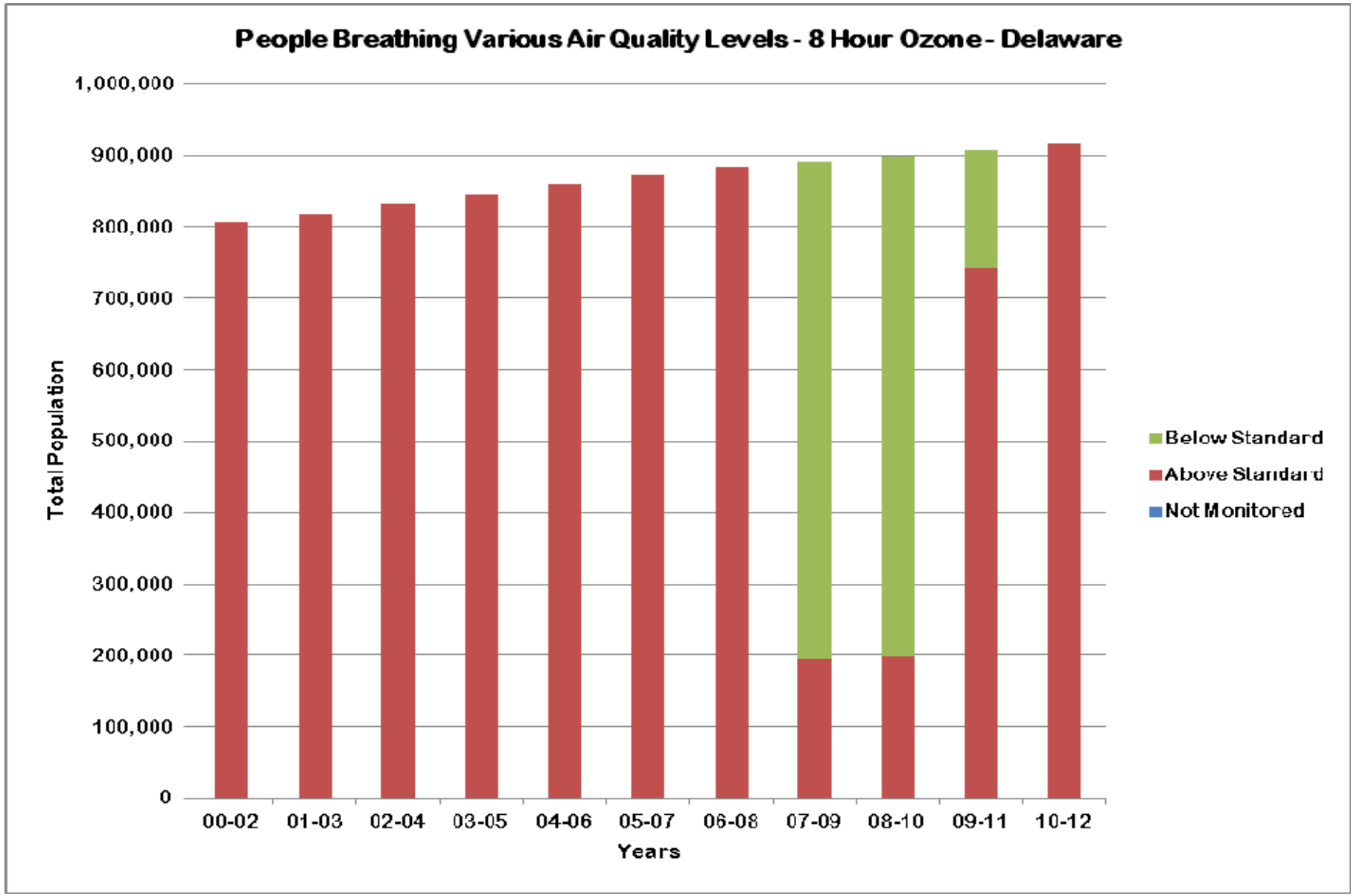
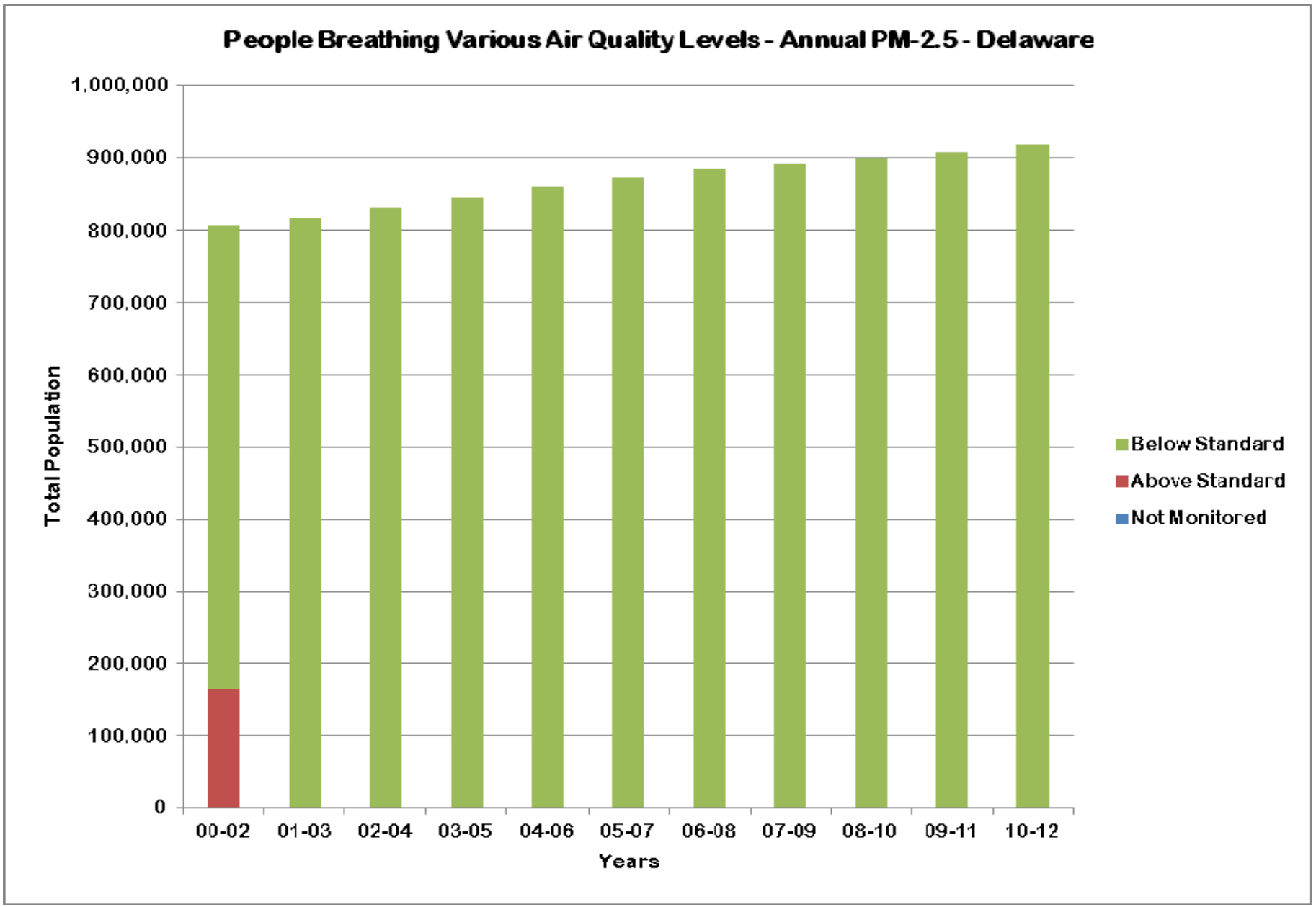

People Breathing Various Air Quality Levels - 8 Hour Ozone - Delaware
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored

Figure DE-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5 - Delaware
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored

Figure DE-3


People Breathing Various Air Quality Levels - Annual PM-2.5 - Delaware
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Total Population
00-02
01-03
02-04
03-05
04-06
05-07
06-08
07-09
08-10
09-11
10-12
Years
Below Standard
Above Standard
Not Monitored