



Indiana Department of Environmental Management

# The States' View of the Air



**2017**

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## **EXECUTIVE SUMMARY**

Air quality across the nation has improved over the past ten years or more. Unfortunately the message often found in the press, is that the air quality is terrible. This analysis demonstrates the progress made from 2000 through 2015 for ozone and fine particles (PM-2.5).

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.

These assessments have been based on results of individual monitors. For example, if a county has two ozone monitors and data for one is rated as a C and the other as a D, the population of the county is split in half and half is assigned to each category; meeting the standard and not meeting the standard.

Compliance with standards is determined on a three year basis. In 2000 – 2002 approximately 110 million people lived in counties that measured ozone air quality levels better than the standard. By 2013 – 2015 this had increased to 176 million people.

The situation for fine particles (PM-2.5) is very similar. In 2000 – 2002, 184 million people lived in counties where 24-hour PM-2.5 levels were measured below the standard. By 2013 – 2015 this had increased to 191 million people.

In the 2000 – 2002 period, 137 million people lived in counties where annual PM-2.5 levels were measured below the standard. By 2013 – 2015 this had increased to 189 million people. Approximately 7.6 million people lived in counties where annual PM-2.5 levels were measured above the standard. Much of this increase is due to the implementation of the new annual PM-2.5 standard.

Even with the improvements made in air quality, there are still areas of the country that need further improvement. Table 1 shows states that have 8 hour ozone nonattainment areas based on 2013 – 2015 data. Twenty-one states are included.

Table 1 shows those states that violate the 24-hour PM-2.5 standard based on 2013 – 2015 data. Only five states are included.

Table 1 shows those states that violate the annual PM-2.5 standard based on 2013 – 2015 data. Only five states are included.

The bottom line is that most areas of the country were meeting the PM-2.5 standard at the 2013 – 2015 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 2015, U.S. EPA lowered the 8-hour ozone standard. This analysis compares historical air quality levels with the appropriate standard for each time period.

**Table 1  
Non-Attainment States Based on 2013 – 2015 Data**

<b>Ozone</b>	<b>24-Hour PM-2.5</b>	<b>Annual PM-2.5</b>
<b>Arizona</b>	Alaska	Alaska
<b>California</b>	California	California
<b>Colorado</b>	Idaho	Idaho
<b>Connecticut</b>	<b>Oregon</b>	<b>Ohio</b>
<b>Georgia</b>	<b>Utah</b>	<b>Pennsylvania</b>
<b>Illinois</b>		
<b>Kentucky</b>		
<b>Louisiana</b>		
<b>Maryland</b>		
<b>Michigan</b>		
<b>Missouri</b>		
<b>Nevada</b>		
<b>New Jersey</b>		
<b>New Mexico</b>		
<b>New York</b>		
<b>Ohio</b>		
<b>Pennsylvania</b>		
<b>Rhode Island</b>		
<b>Texas</b>		
<b>Utah</b>		
<b>Wisconsin</b>		

Figure 1

**People Breathing Various Air Quality Levels - 8 Hour Ozone  
U. S. Total**

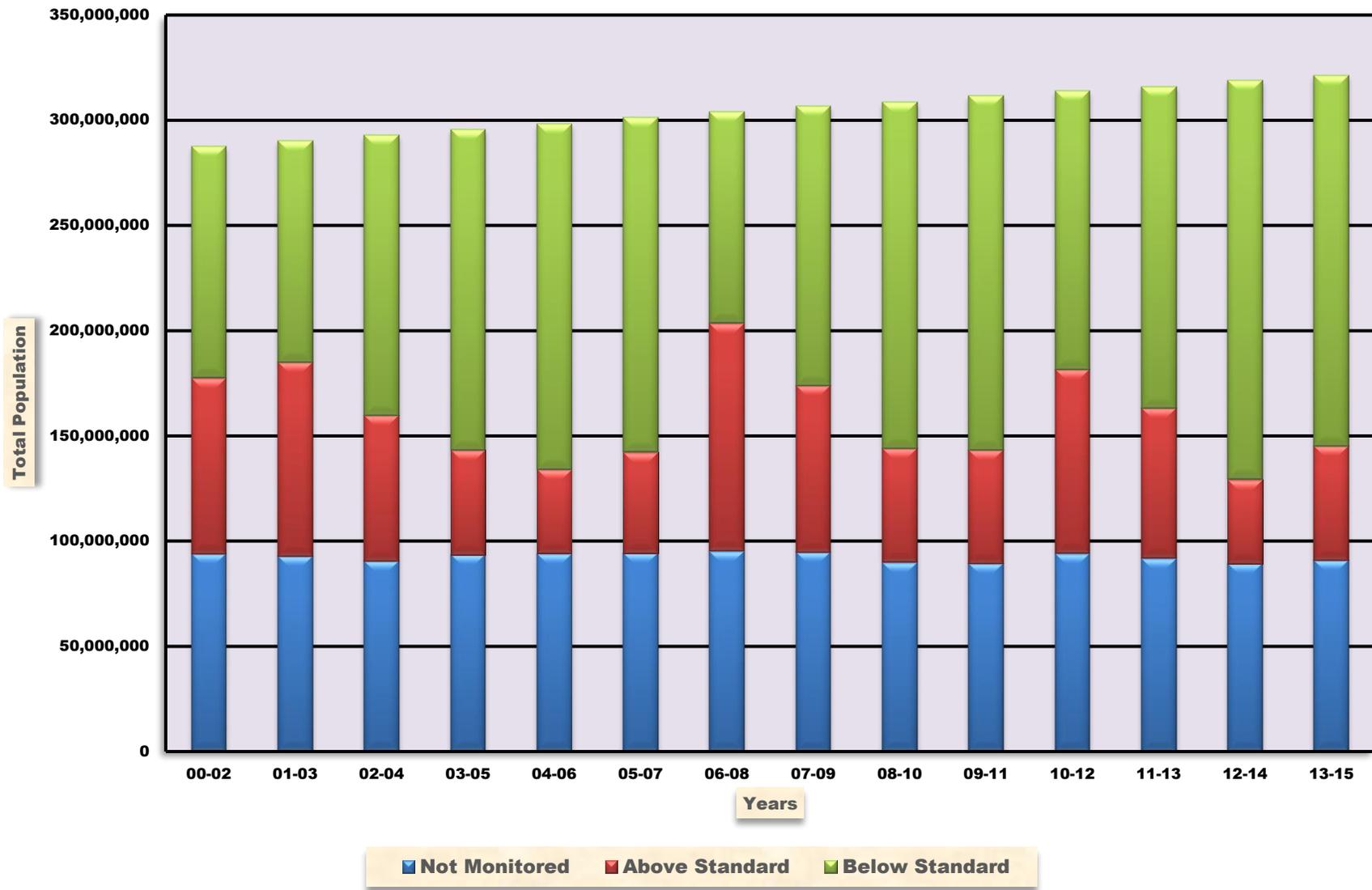


Figure 2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
U. S. Total**

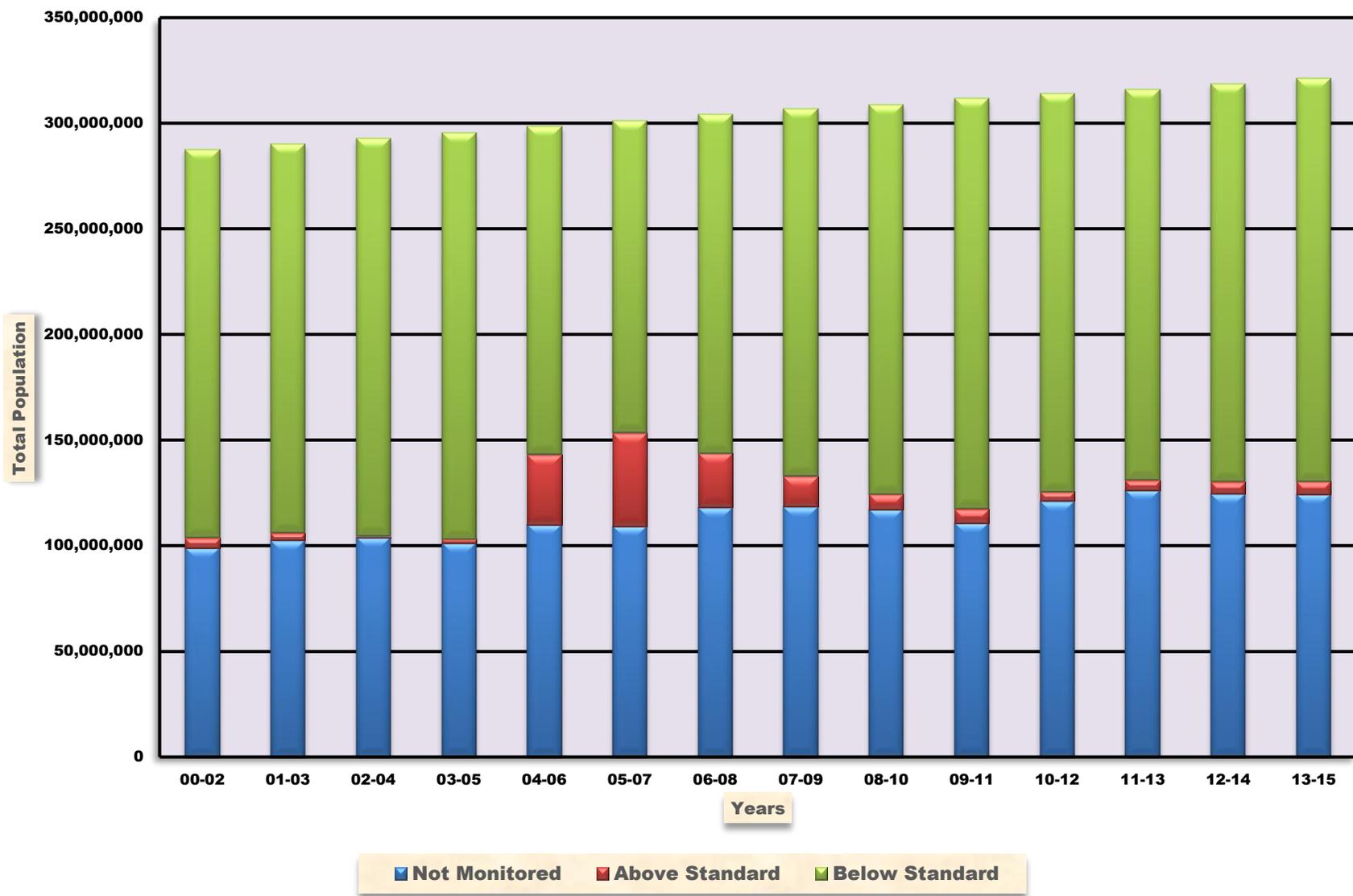
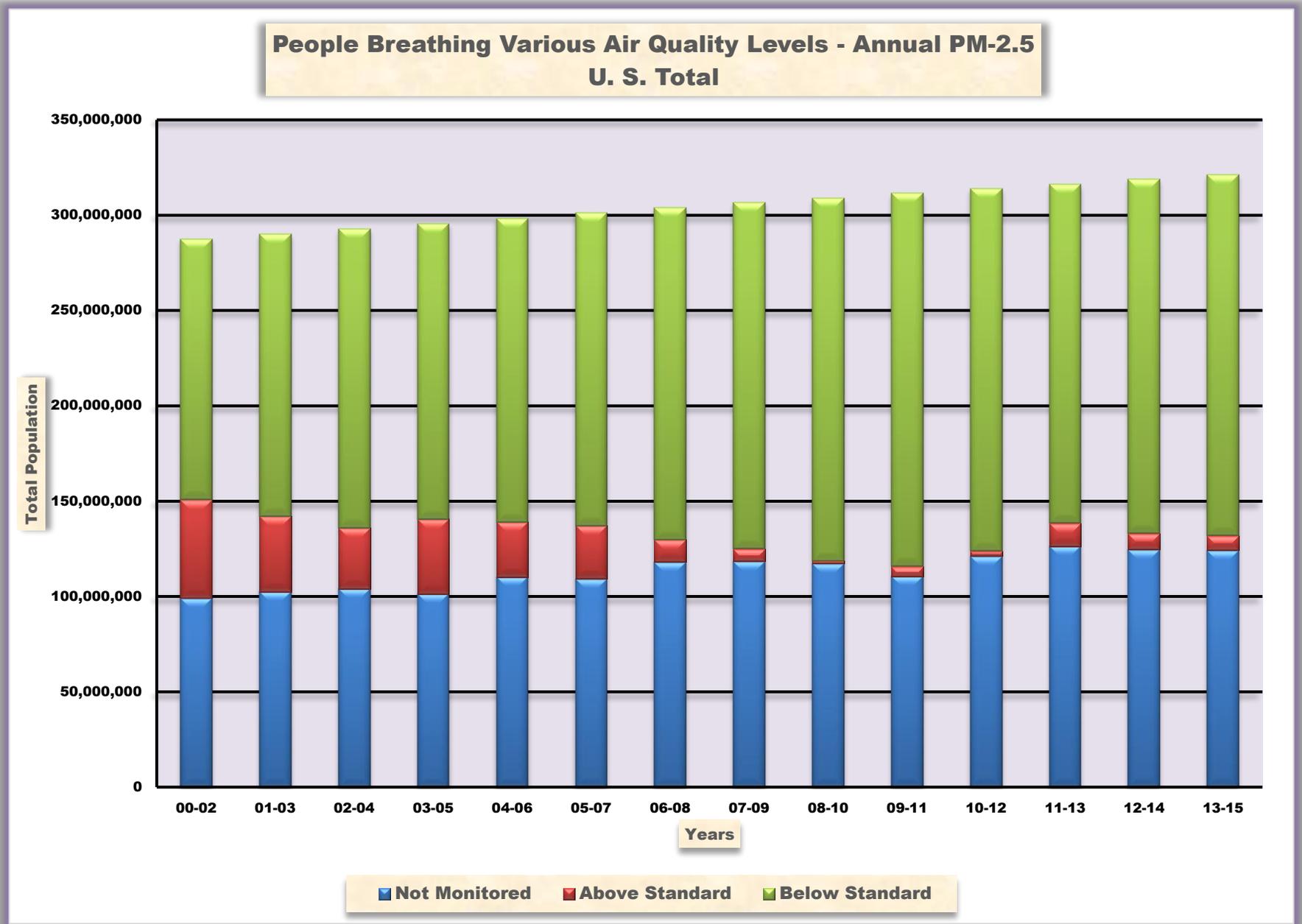


Figure 3



## The States' View of the Air – 2017

This is the sixth 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 – 2015.

### What's New?

This report contains several revisions from previous reports. First, U.S. EPA revised the ozone standard in 2015. Previous reports had assumed that the ozone standard was constant (0.075 ppm) during the entire period. This is no longer the case. Table 2 outlines the appropriate grading scales for each year for each pollutant based upon the standard that was in place for each period.

**Table 2**  
**Grading Scales by Year**  
**Ozone**

Standard	0.085 ppm	0.075 ppm	0.070 ppm
<b>Beginning Period</b>	2000 - 2002	2006 -2008	2013 – 2015
<b>Ending Period</b>	2005 - 2007	2012 – 2014	
<b>A</b>	< 0.068	< 0.060	< 0.056
<b>B</b>	0.068 – 0.076	0.060 – 0.067	0.056 – 0.062
<b>C</b>	0.077 – 0.085	0.068 – 0.075	0.063 – 0.070
<b>D</b>	0.086 – 0.093	0.076 – 0.082	0.071 – 0.077
<b>F</b>	> 0.093	> 0.082	> 0.077

### 24-Hour PM-2.5

Standard	65 µg/m3	35 µg/m3
<b>Beginning Period</b>	2000 - 2002	2004 - 2006
<b>Ending Period</b>	2003 – 2005	
<b>A</b>	< 52	< 28
<b>B</b>	52 – 58	
<b>C</b>	59 - 65	32 – 35
<b>D</b>	66 - 71	36 – 38
<b>F</b>	> 71	> 38

### Annual PM-2.5

Standard	15 µg/m3	12 µg/m3
<b>Beginning Period</b>	2000 - 2002	2011- 2013
<b>Ending Period</b>	2010 – 2012	
<b>A</b>	< 12.0	< 9.6
<b>B</b>	12.0 – 13.4	9.6 – 10.7
<b>C</b>	13.5 – 15.0	10.8 – 12.0
<b>D</b>	15.1 – 16.5	12.1 – 13.2
<b>F</b>	> 16.5	> 13.2

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. Average values are used to compare between cities or county ratings. However, when determining whether the population is exposed to air quality above or below the standard, the population is split based on values from individual monitors. 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 not be exposed to higher levels. However, not all residents in a county are exposed to levels associated with the highest monitor. This average design value is used only to compare between different states.

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 report does 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 looks at three year blocks of data from 2000 through 2015 so that the reader can see how the air quality is changing over time.

## **Ozone**

In the 2000 – 2002 period approximately 110 million people (38.3% of the U.S. population) lived in counties that met the ozone standard. During the same time period approximately 94 million people (32.7%) lived in counties where ozone was not monitored. By the 2013 – 2015 period 176 million people (54.8%) lived in counties that met the ozone standard. During the same time period over 91 million people (28.2%) 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 184 million people (63.9% of the U.S. population) lived in counties that met the 24-hour PM-2.5 standard. During this same time period approximately 99 million people (34.4%) lived in counties where PM-2.5 was not monitored. By the 2013 – 2015 period over 191

million people (59.4%) lived in counties that met the 24-hour PM-2.5 standard. During the same time period nearly 124 million people (38.7%) 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 137 million people (47.6% of the U.S. population) lived in counties that met the annual PM-2.5 standard. During the same time period approximately 99 million people (34.4%) lived in counties where PM-2.5 was not monitored. By the 2013 - 2015 period nearly 189 million people (58.5%) lived in counties that met the annual PM-2.5 standard. During the same time period nearly 124 million people (38.7%) 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 3  
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	2011-2013	2012-2014	2013-2015
<b>A</b>	20,471,429	21,007,029	21,818,673	22,054,399	24,838,855	27,800,382	9,232,373	12,298,238	13,558,151	18,015,730	16,866,614	18,303,246	19,368,512	8,980,475
<b>B</b>	35,747,877	35,773,901	47,966,735	60,146,368	69,565,432	53,778,279	28,580,829	35,553,429	50,138,920	51,177,850	35,393,276	47,106,155	66,240,740	49,241,374
<b>C</b>	53,889,773	48,408,476	63,348,381	70,013,754	69,898,005	77,271,433	62,704,468	84,940,137	100,995,130	99,114,492	80,226,719	87,476,137	103,841,894	118,071,931
<b>D</b>	47,420,248	54,359,287	44,209,736	38,124,239	28,441,509	37,071,016	63,627,132	55,063,493	39,064,537	39,270,993	63,098,032	54,529,792	28,505,820	38,209,707
<b>F</b>	36,113,846	37,687,723	24,983,253	11,548,882	11,560,305	11,027,077	44,674,719	24,151,562	15,005,562	14,715,347	24,372,196	16,951,020	11,605,706	16,165,633
<b>Subtotals</b>	193,643,173	197,236,416	202,326,778	201,887,642	204,304,106	206,948,187	208,819,521	212,006,859	218,762,300	222,294,412	219,956,837	224,366,350	229,562,172	230,669,120
<b>NM</b>	93,983,020	92,871,573	90,478,571	93,628,957	94,075,816	94,283,022	95,274,448	94,764,670	89,983,238	89,297,505	94,047,203	91,762,290	89,294,876	90,749,700
<b>Totals</b>	287,626,193	290,107,989	292,805,349	295,516,599	298,379,922	301,231,209	304,093,969	306,771,529	308,745,538	311,591,917	314,004,040	316,128,640	318,857,048	321,418,820

**Table 4  
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	2011-2013	2012-2014	2013-2015
<b>A</b>	169,108,273	173,519,735	173,403,112	181,532,314	72,518,745	62,111,129	74,200,491	101,754,808	128,242,741	149,785,435	161,215,778	161,978,674	172,722,788	165,483,980
<b>B</b>	7,530,636	5,959,760	10,295,816	6,213,603	38,502,559	38,675,362	54,061,231	50,984,562	43,725,167	33,827,066	23,690,673	17,737,378	10,254,436	15,939,160
<b>C</b>	7,178,534	4,531,674	4,611,123	4,435,827	44,218,230	47,028,810	32,125,829	21,174,669	12,236,695	10,508,511	3,494,256	5,301,992	5,636,932	9,589,819
<b>D</b>	2,629,580	3,058,385	349,670	1,809,126	21,475,576	24,966,612	12,781,119	4,567,924	4,102,958	690,758	1,205,709	443,326	1,134,946	460,719
<b>F</b>	2,141,065	478,332	139,259	139,866	11,544,108	19,216,123	12,716,115	9,765,558	3,172,492	6,092,520	3,122,751	4,387,046	4,509,547	5,611,560
<b>Subtotals</b>	188,588,088	187,547,886	188,798,980	194,130,736	188,259,218	191,998,036	185,884,785	188,247,521	191,480,053	200,904,290	192,729,167	189,848,417	194,258,649	197,085,238
<b>NM</b>	99,038,105	102,560,103	104,006,369	101,385,863	110,120,704	109,233,173	118,209,184	118,524,008	117,265,485	110,687,627	121,274,873	126,280,224	124,598,399	124,333,582
<b>Totals</b>	287,626,193	290,107,989	292,805,349	295,516,599	298,379,922	301,231,209	304,093,969	306,771,529	308,745,538	311,591,917	314,004,040	316,128,640	318,857,048	321,418,820

**Table 5  
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	2011-2013	2012-2014	2013-2015
<b>A</b>	66,662,352	71,085,260	85,102,824	81,951,850	79,877,728	86,319,471	99,566,055	126,214,063	159,917,270	173,114,587	171,873,326	106,652,246	126,495,698	137,088,639
<b>B</b>	33,699,590	35,880,541	34,165,126	37,412,681	44,068,553	36,635,664	44,713,857	42,173,210	22,491,224	18,287,999	15,926,224	48,841,463	37,421,140	32,856,467
<b>C</b>	36,472,438	41,055,648	37,608,751	35,592,430	35,436,747	41,176,111	30,049,147	13,365,491	7,635,978	4,349,455	2,391,571	22,208,353	21,911,492	19,515,709
<b>D</b>	24,175,664	19,998,245	14,825,460	21,753,042	15,420,277	17,651,505	6,595,531	3,864,237	489,623	1,986,357	1,932,071	6,845,156	5,441,356	4,633,342
<b>F</b>	27,578,044	19,528,192	17,096,819	17,420,733	13,455,913	10,215,285	4,960,195	2,630,520	945,958	3,165,892	605,975	5,301,199	2,988,963	2,991,081
<b>Subtotals</b>	188,588,088	187,547,886	188,798,980	194,130,736	198,259,218	191,998,036	185,884,785	188,247,521	191,480,053	200,904,290	192,729,167	189,848,417	194,258,649	197,085,238
<b>NM</b>	99,038,105	102,560,103	104,006,369	101,385,863	110,120,704	109,233,173	118,209,184	118,524,008	117,265,485	110,687,627	121,274,873	126,280,223	124,598,399	124,333,582
<b>Totals</b>	287,626,193	290,107,989	292,805,349	295,516,599	298,379,922	301,231,209	304,093,969	306,771,529	308,745,538	311,591,917	314,004,040	316,128,640	318,857,048	321,418,820

**NM = Not Monitored**

**Table 6**  
**High Cities - Year Round Particle Pollution (Annual PM-2.5)**  
**(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Fairbanks, AK	18.8	F	99,631
2	Visalia, CA	17.4	F	610,828
3	Fresno, CA	14.4	F	729,859
4	Modesto, CA	12.5	D	806,843
4	Bakersfield, CA	12.5	D	882,176
6	Johnstown, PA	11.7	C	211,933
7	Altoona, PA	11.4	C	125,593
8	Lancaster, PA	11.1	C	536,624
8	Houston, TX	11.1	C	4,855,069
10	Indianapolis, IN	11.0	C	2,369,426
11	Weirton, WV-OH	10.9	C	120,512
11	Harrisburg, PA	10.9	C	1,247,235
13	San Luis Obispo, CA	10.8	C	281,401
13	Erie, PA	10.8	C	364,529
15	Little Rock, AR	10.7	B	907,469
16	St. Louis, MO-IL	10.6	B	2,940,973
16	Dallas-Fort Worth, TX	10.6	B	7,538,055
18	Monroe, LA	10.5	B	253,407
18	Evansville, IN-KY	10.5	B	315,693
20	Wheeling, WV-OH	10.4	B	144,198
20	Medford, OR	10.4	B	297,312
22	Terre Haute, IN	10.3	B	171,019
22	Shreveport, LA	10.3	B	443,708
22	Pittsburgh, PA	10.3	B	2,648,605
22	Owensboro, KY	10.3	B	117,463
22	Cincinnati, OH-KY-IN	10.3	B	2,216,735

**MSA = Metropolitan Statistical Area    PW = Population Weighted    DV = Design Value**

**Of the top 26 cities, five have air quality that exceeds the revised national ambient air quality standard.**

**Nine cities are rated as C and twelve are rated as B.**

**Table 7  
Highest Cities – Short Term Particle Pollution (24-hour PM-2.5)  
(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Fairbanks, AK	80	F	99,631
2	Visalia, CA	62	F	610,828
3	Fresno, CA	51	F	729,859
4	Modesto, CA	46	F	806,843
4	Logan, UT	46	F	133,857
4	Bend, OR	46	F	196,898
7	Bakersfield, CA	44	F	882,176
8	Salt Lake City, UT	37	D	2,467,709
9	Medford, OR	36	D	297,312
10	Yakima, WA	33	C	248,830
11	Lancaster, PA	32	C	536,624
12	Portland, OR	30	B	3,110,906
13	Harrisburg, PA	29	B	1,247,235
13	Chico, CA	29	B	225,411
15	Johnstown, PA	28	B	211,933
15	Eugene, OR	28	B	362,895
15	Altoona, PA	28	B	125,593
18	Seattle, WA	27	A	4,602,591
18	San Jose, CA	27	A	8,713,914
18	Sacramento, CA	27	A	2,544,026
18	Philadelphia, PA	27	A	7,183,479
18	Los Angeles, CA	27	A	18,679,763

**MSA = Metropolitan Statistical Area      PW = Population Weighted      DV = Design Value**  
**Of the 22 highest cities, 7 have ratings of F, 2 are s a D, 2 are C, 6 are Band 5 are A.**

**Table 8  
Highest 8-Hour Ozone Cities  
(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Fresno, CA	0.087	F	729,859
2	Visalia, CA	0.084	F	610,828
3	Bakersfield, CA	0.083	F	882,176
4	Modesto, CA	0.080	F	806,843
5	Los Angeles, CA	0.078	F	18,679,763
6	Sheboygan, WI	0.077	D	115,569
7	Yuma, AZ	0.076	D	204,275
7	Hartford, CT	0.076	D	1,483,187
9	Norwich, CT	0.075	D	271,863
9	El Centro, CA	0.075	D	180,191
11	Muskegon, MI	0.071	D	172,790
12	San Antonio, TX	0.072	D	2,384,075
12	Salt Lake City, UT	0.072	D	2,467,709
12	Sacramento, CA	0.072	D	2,544,026
12	Phoenix, AZ	0.072	D	4,574,531
12	Fort Collins, CO	0.072	D	333,577
12	Dallas-Fort Worth, TX	0.072	D	7,538,055
18	Trenton, NJ	0.071	D	371,398
18	Las Vegas, NV	0.071	D	2,362,015
18	Houston, TX	0.071	D	6,855,069
18	Denver, CO	0.071	D	3,418,876
22	Providence, RI	0.070	C	1,613,070
22	New York, NY	0.070	C	23,723,696
22	Little Rock, AR	0.070	C	904,469

**MSA = Metropolitan Statistical Area    PW = Population Weighted    DV = Design Value**  
**Of the 24 highest rated cities, five are rated F, 16 are rated D and 3 are rated C.**

**Table 9**  
**Highest Counties - Short Term Particle Pollution (24-hour PM-2.5)**  
**(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Fairbanks, AK	80	F	99,631
2	Kings, CA	65	F	150,965
3	Tulare, CA	61	F	459,863
4	Lake, OR	56	F	7,829
5	Fresno, CA	51	F	974,861
6	Stanislaus, CA	48	F	538,388
6	Siskiyou, CA	48	F	43,554
8	Cache, UT	46	F	120,783
8	Crook, OR	46	F	21,630
10	Utah, UT	44	F	275,205
10	San Joaquin, CA	44	F	426,706
10	Kern, CA	44	F	882,176
13	Plumas, CA	42	F	18,409
13	Merced, CA	42	F	268,455
15	Salt Lake, UT	41	F	1,107,314
16	Jackson, OR	40	F	212,567
16	Lemhi, ID	40	F	7,735
18	Box Elder, UT	38	D	52,097
19	Davis, UT	36	D	336,043
20	Matanuska, AK	35	C	1,563
21	Weber, UT	34	C	243,645
21	Lebanon, PA	34	C	137,067
21	Klamath, OR	34	C	65,016

**DV = Design Value**

**Of the 23 highest counties, 17 are rated F, 2 are D, and 4 are C.**

**Table 10  
Highest Counties Year Round Particle Pollution (Annual PM-2.5)  
(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Fairbanks, AK	18.8	F	99,631
2	Tulare, CA	17.6	F	459,863
3	Kings, CA	16.8	F	150,965
4	Lemhi, ID	14.9	F	7,735
5	Fresno, CA	14.4	F	984,861
6	Stanislaus, CA	12.7	D	538,388
6	San Joaquin, CA	12.7	D	726,706
8	Kern, CA	12.5	D	882,176
9	Merced, CA	12.2	D	268,455
10	Plumas, CA	12.1	D	18,409
11	Cumberland, PA	12.0	C	246,338
12	Lebanon, PA	11.7	C	137,067
12	Cambria, PA	11.7	C	136,411
14	Delaware, PA	11.6	C	563,894
15	Bucks, PA	11.5	C	627,367
16	Blair, PA	11.4	C	236,593
16	Napa, CA	11.4	C	142,456
18	Marion, IN	11.3	C	939,020
19	Harris, TX	11.1	C	4,538,028
19	Lancaster, PA	11.1	C	536,624
19	Armstrong, PA	11.1	C	67,052
19	Stark, OH	11.1	C	375,165
19	Cuyahoga, OH	11.1	C	1,255,921
24	Dallas, TX	11.0	C	2,553,385
24	Jackson, OR	11.0	C	212,567

**DV = Design Value**

**Of the 25 highest counties, five are rated an F and five are D. All others meet the National Ambient Air Quality Standards with 15 being rated as C.**

**Table 11  
Highest Ozone Counties  
(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	San Bernardino, CA	0.090	F	2,128,133
2	Fresno, CA	0.087	F	974,861
3	Tulare, CA	0.084	F	459,863
3	Riverside, CA	0.084	F	2,361,026
5	Kern, CA	0.083	F	882,176
6	Merced, CA	0.082	F	268,455
7	Uintah, UT	0.081	F	37,928
7	Fairfield, CT	0.081	F	948,053
9	Middlesex, CT	0.080	F	164,063
9	El Dorado, CA	0.080	F	184,452
11	Douglas, CO	0.079	F	322,387
11	Stanislaus, CA	0.079	F	538,388
13	Los Angeles, CA	0.078	F	10,170,292
14	Sheboygan, WI	0.077	D	115,569
14	Denton, TX	0.077	D	780,612
14	New Haven, CT	0.077	D	859,470
17	Tolland, CT	0.076	D	151,420
17	Hartford, CT	0.076	D	895,841
17	Nevada, CA	0.076	D	98,877
17	Yuma, AZ	0.076	D	204,275

**DV = Design Value**

**Of the top 20 counties, 13 are rated as F and 7 are rated as D.**

**Table 12**  
**Cleanest U.S. Cities for Short-term Particle Pollution (24-hr PM-2.5)**  
**(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Farmington, NM	11	A	118,737
1	Honolulu, HI	11	A	998,714
3	St. George, UT	12	A	155,602
4	El Paso, TX	13	A	1,053,267
4	Salinas, CA	13	A	433,898
4	Tucson, AZ	13	A	1,056,486
7	Boston, MA	14	A	8,025,748
7	Cape Coral, FL	14	A	1,059,287
7	Cheyenne, WY	14	A	97,121
7	Homosassa Springs, FL	14	A	141,058
7	Kahului, HI	14	A	164,726
7	Lakeland, FL	14	A	650,092
7	Miami, FL	14	A	6,654,565
7	Wilmington, NC	14	A	277,969
15	Elmira, NY	15	A	184,702
15	Greenville, SC	15	A	223,493
15	Johnson City, TN	15	A	607,768
15	Manchester, NH	15	A	406,678
15	Orlando, FL	15	A	3,099,308
15	Rapid City, SD	15	A	168,961
15	Tampa, FL	15	A	2,975,225

**MSA= Metropolitan Statistical Area    PW = Population Weighted    DV = Design Value**  
**Of the 21 cleanest cities, all are rated as A.**

**Table 13**  
**Cleanest U.S. Cities for Year Round Particle Pollution (Annual PM-2.5)**  
**(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Cheyenne, WY	3.9	A	97,121
2	Farmington, NM	4.1	A	118,737
2	St. George, UT	4.1	A	155,602
4	Bismarck, ND	4.6	A	129,517
4	Casper, WY	4.6	A	82,178
6	Honolulu, HI	4.9	A	998,714
7	Boston, MA	5.3	A	8,025,748
8	El Paso, TX	5.5	A	1,053,267
8	Tucson, AZ	5.5	A	1,056,486
10	Palm Bay, FL	5.6	A	568,088
10	Salinas, CA	5.6	A	433,898
12	Colorado Springs, CO	5.7	A	697,856
12	Kahului, HI	5.7	A	164,726
14	Anchorage, AK	5.8	A	399,790
14	Grand Island, NE	5.8	A	85,066
14	Pueblo, CO	5.8	A	210,283
17	Cape Coral, FL	5.9	A	1,059,287
18	Elmira, NY	6.0	A	184,702
19	Fargo, ND-MN	6.1	A	256,634
19	Miami, FL	6.1	A	6,654,565
19	Sarasota, FL	6.1	A	977,491
19	Rapid City, SD	6.1	A	168,961
23	Homosassa Springs, FL	6.2	A	121,058
23	Orlando, FL	6.2	A	3,099,308
23	Redding, CA	6.2	A	242,841

**MSA = Metropolitan Statistical Area    PW = Population Weighted    DV = Design Value**  
**Of the 25 cleanest cities all are rated as A.**

**Table 14**  
**Cleanest U.S. Cities for Ozone Air Pollution**  
**(2013 - 2015)**

<b>Rank</b>	<b>MSA</b>	<b>PW DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Bellingham, WA	0.045	A	212,284
1	Fairbanks, AK	0.045	A	99,631
3	Honolulu, HI	0.051	A	998,714
4	Grand Junction, CO	0.054	A	148,513
5	Duluth, MN	0.055	A	279,601
5	Missoula, MT	0.055	A	114,181
7	Brunswick, GA	0.056	A	116,003
7	McAllen, TX	0.056	A	906,099
7	Seattle, WA	0.056	A	4,602,591
10	Charleston, SC	0.057	A	744,526
11	Fargo, ND	0.058	A	256,634
11	Florence, AL	0.058	A	146,950
11	Harrisonburg, VA	0.058	A	251,352
11	Jacksonville, FL	0.058	A	1,573,606
11	Lincoln, NE	0.058	A	345,478
11	Naples, FL	0.058	A	203,967
11	Portland, WA	0.058	A	3,110,906
11	Salinas, CA	0.058	A	433,898
11	Savannah, GA	0.058	A	532,048

**MSA = Metropolitan Statistical Area      PW = Population Weighted      DV = Design Value**  
**Of the cleanest 19 cities, all are rated A.**

**Table 15  
Cleanest Counties – Short Term Particle Pollution (24-hour PM-2.5)  
(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Lake, CA	10	A	64,891
1	Kauai, HI	10	A	71,735
1	Fergus, T	10	A	11,427
1	Phillips, MT	10	A	4,169
5	Honolulu, HI	11	A	998,714
5	Belknap, NH	11	A	60,641
5	San Juan, NM	11	A	118,737
5	Billings, ND	11	A	936
5	Sweetwater, WY	11	A	44,626
6	Teton, WY	11	A	23,125
11	Humboldt, CA	12	A	135,727
11	Santa Cruz, CA	12	A	274,146
11	Palm Beach, FL	12	A	1,422,789
11	Hawaii, HI	12	A	196,428
11	Rosebud, MT	12	A	9,398
11	Essex, NY	12	A	38,418
11	Custer, SD	12	A	8,446
11	Washington, UT	12	A	155,602

**DV = Design Value**

**The cleanest 18 counties are all rated as A.**

**Table 16**  
**Cleanest Counties - Year Round Particle Pollution (Annual PM-2.5)**  
**(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Custer, SD	3.1	A	8,446
2	McKenzie, ND	3.4	A	12,826
3	Lake, CA	3.7	A	64,791
4	Kauai, HI	3.8	A	71,735
4	Fergus, MT	3.8	A	11,427
6	Laramie, WY	3.9	A	97,121
7	Humboldt, CA	4.0	A	135,727
8	Phillips, MT	4.1	A	4,169
8	San Juan, NM	4.1	A	118,737
8	Essex, NY	4.1	A	38,478
8	Washington, UT	4.1	A	155,602
8	Campbell, WY	4.1	A	49,220
8	Park, WY	4.1	A	29,228
14	Billings, ND	4.4	A	936
14	Albany, WY	4.4	A	37,956
16	Teton, WY	4.5	A	23,125
17	Burleigh, ND	4.6	A	92,991
17	Jackson, SD	4.6	A	3,321
17	Natrona, WY	4.6	A	82,178
20	Rosebud, MT	4.7	A	9,798
20	Oliver, ND	4.7	A	1,846
20	Sweetwater, WY	4.7	A	44,626
23	Lake, MN	4.8	A	10,631
23	Kitsap, WA	4.8	A	260,131

**DV = Design Value**

**The cleanest 24 counties are all rated as A.**

**Table 17  
Cleanest Counties - Ozone Air Pollution  
(2013 - 2015)**

<b>Rank</b>	<b>County/State</b>	<b>DV</b>	<b>Grade</b>	<b>2015 Population</b>
1	Humboldt, CA	0.044	A	135,727
2	Fairbanks, AK	0.045	A	99,631
2	Skagit, WA	0.045	A	121,846
2	Whatcom, WA	0.045	A	212,284
5	San Francisco, CA	0.048	A	864,816
6	Honolulu, HI	0.051	A	998,714
7	Oxford, ME	0.052	A	57,202
7	Columbia, OR	0.052	A	49,600
7	Clallam, WA	0.052	A	73,486
10	Aroostook, ME	0.053	A	68,628
11	Denali, AK	0.054	A	1,919
11	St. Louis, MN	0.054	A	200,431
11	Flathead, MT	0.054	A	96,165
11	Bradford, PA	0.054	A	61,281
11	Colleton, SC	0.054	A	37,731
11	Edgefield, SC	0.054	A	26,514
11	Thurston, WA	0.054	A	269,536
18	Fergus, MT	0.055	A	11,427
18	Missoula, MT	0.055	A	114,181
18	Phillips, MT	0.055	A	4,169
18	Richland, MT	0.055	A	11,960
18	Rosebud, MT	0.055	A	9,398
18	Multnomah, OR	0.055	A	790,294
18	King, WA	0.055	A	2,117,125

**DV = Design Value of the 24 cleanest counties, all are rated A.**

**Table 18**  
**States Ranked by Population Weighted Ozone Design Values (2013 – 2015)**

<b>Rank</b>	<b>State</b>	<b>PW Ozone Design Value</b>
1	AK	0.045
2	HI	0.051
3	MT	0.055
4	WA	0.056
5	IA	0.059
5	MN	0.059
5	NE	0.059
5	ND	0.059
5	OR	0.059
10	SC	0.060
11	MI	0.061
12	FL	0.062
12	IN	0.062
12	ME	0.062
12	VT	0.062
16	NC	0.063
16	SD	0.063
16	WY	0.063
19	AL	0.064
19	AR	0.064
19	ID	0.064
19	KS	0.064
19	MA	0.064
19	MS	0.064
19	NH	0.064
19	TN	0.064
27	IL	0.065
27	KY	0.065
27	VA	0.065
27	WV	0.065
31	DE	0.066
31	MO	0.066
31	NM	0.066
31	OH	0.066
31	WI	0.066
36	GA	0.067
36	LA	0.067
36	OK	0.067
36	PA	0.067
40	DC	0.068
40	MD	0.068
40	NY	0.068
43	AZ	0.070
43	CO	0.070
43	NV	0.070
43	NJ	0.070
43	RI	0.070
43	TX	0.070
49	CA	0.072
50	UT	0.072
51	CT	0.077

**Table 19**  
**States Ranked by Population Weighted 24-Hour PM-2.5 Design Values (2013 – 2015)**

<b>Rank</b>	<b>State</b>	<b>PW Ozone Design Value</b>
1	HI	11
2	FL	15
2	WY	15
4	ME	16
4	MA	16
4	NH	16
4	NM	16
4	ND	16
9	VT	17
10	NC	18
10	RI	18
10	SC	18
13	AL	19
13	AZ	19
13	GA	19
13	LA	19
13	MN	19
13	TN	19
13	VA	19
20	KS	20
20	MS	20
20	NE	20
20	OK	20
20	SD	20
25	AR	21
25	CO	21
25	DC	21
25	KY	21
25	WV	21
30	CT	22
30	ID	22
30	IA	22
30	MD	22
30	NV	22
30	NY	22
36	DE	23
36	MI	23
36	MO	23
36	MT	23
36	NJ	23
36	OH	23
36	TX	23
36	WA	23
36	WI	23
45	IN	24
46	PA	27
47	CA	28
48	AK	31
48	OR	31
50	UT	39
51	IL	ND

**Table 20**  
**States Ranked by Population Weighted 24-Hour PM-2.5 Design Values (2013 – 2015)**

<b>Rank</b>	<b>State</b>	<b>PW Ozone Design Value</b>
1	WY	4.6
2	HI	5.2
3	ND	5.6
4	ME	6.1
5	MA	6.3
6	FL	6.4
6	NM	6.4
8	NH	6.5
9	CO	6.6
10	RI	6.7
10	VT	6.7
12	WA	6.8
13	AZ	7.4
13	MT	7.4
15	MN	7.6
16	CT	7.8
16	SD	7.8
18	KS	8.1
18	NE	8.1
18	OR	8.1
21	ID	8.2
21	VA	8.2
23	UT	8.3
24	NY	8.4
25	AK	8.6
25	LA	8.6
25	OK	8.6
25	SC	8.6
29	NV	8.7
29	NC	8.7
31	DE	8.8
31	NJ	8.8
31	WI	8.8
34	IA	8.9
35	DC	9.0
35	TN	9.0
37	MD	9.1
37	MI	9.1
39	AL	9.2
40	KY	9.4
40	MS	9.4
40	WV	9.4
43	AR	9.5
43	GA	9.5
45	CA	9.9
46	MO	10.1
46	OH	10.1
46	TX	10.1
49	IN	10.4
50	PA	10.5
51	IL	ND

**Table 21**  
**Overall Ranking Based on Population Weighted Design Values (2013 – 2015)**

State	PW Design Value			% of Standard			Average	Rank
	Ozone	24 Hr. PM2.5	Ann. PM2.5	Ozone	24 Hr. PM2.5	Ann PM2.5		
HI	0.051	11	5.2	72.86	31.43	43.33	49.21	1
WY	0.063	15	4.6	90.00	42.86	38.33	57.06	2
ND	0.059	16	5.6	84.29	45.71	46.67	58.89	3
FL	0.062	15	6.4	88.57	42.86	53.33	61.59	4
ME	0.062	16	6.1	88.57	45.71	50.83	61.71	5
MA	0.064	16	6.3	91.43	45.71	52.50	63.21	6
NH	0.064	16	6.5	91.43	45.71	54.17	63.77	7
VT	0.062	17	6.7	88.57	48.57	55.83	64.33	8
NM	0.066	16	6.4	94.29	45.71	53.33	64.44	9
MN	0.059	19	7.6	84.29	54.29	63.33	67.30	10
WA	0.056	23	6.8	80.00	65.71	56.67	67.46	11
MT	0.055	23	7.4	78.57	65.71	61.67	68.65	12
RI	0.070	18	6.7	100.00	51.43	55.83	69.09	13
SC	0.060	18	8.6	85.71	51.43	71.67	69.60	14
NE	0.059	20	8.1	84.29	57.17	67.50	69.64	15
SD	0.063	20	7.8	90.00	57.14	65.00	70.71	16
NC	0.063	18	8.7	90.00	51.43	72.50	71.31	17
CO	0.070	21	6.6	100.00	60.00	55.00	71.67	18
VA	0.065	19	8.2	92.86	54.29	68.33	71.83	19
AZ	0.070	19	7.4	100.00	54.29	61.67	71.98	20
KS	0.064	20	8.1	91.43	57.14	67.50	72.02	21
TN	0.064	19	9.0	91.43	54.29	75.00	73.57	22
IA	0.059	22	8.9	84.29	62.86	74.17	73.77	23
LA	0.067	19	8.6	95.71	54.29	71.67	73.89	24
AL	0.064	19	9.2	91.43	54.29	76.67	74.13	25
ID	0.064	22	8.2	91.43	62.86	68.33	74.21	26
AK	0.045	31	8.6	64.29	88.57	71.67	74.84	27
OK	0.067	20	8.6	95.71	57.14	71.67	74.84	27
MS	0.064	20	9.4	91.43	57.14	78.33	75.63	29
MI	0.061	23	9.1	87.14	65.71	75.83	76.23	30
GA	0.067	19	9.5	95.71	54.29	79.17	76.39	31
NY	0.068	22	8.4	97.14	62.86	70.00	76.67	32
AR	0.064	21	9.5	91.43	60.00	79.17	76.87	33
KY	0.065	21	9.4	92.86	60.00	78.33	77.06	34
WV	0.065	21	9.4	92.86	60.00	78.33	77.06	35
DC	0.068	21	9.0	97.14	60.00	75.00	77.38	36
DE	0.066	23	8.8	94.29	65.71	73.33	77.78	37
WI	0.066	23	8.8	94.29	65.71	73.33	77.78	37
NV	0.070	22	8.7	100.00	62.86	72.50	78.45	39
MD	0.068	22	9.1	97.14	62.86	75.86	78.61	40
CT	0.077	22	7.8	110.00	62.86	65.00	79.29	41
NJ	0.070	23	8.8	100.00	65.71	73.33	79.68	42
OR	0.059	31	8.1	84.29	88.57	67.50	80.12	43
IN	0.062	24	10.4	88.57	68.57	86.67	81.27	44
MO	0.066	23	10.1	94.29	65.71	84.17	81.39	45
OH	0.066	23	10.1	94.29	65.71	84.17	81.39	45
TX	0.070	23	10.1	100.00	65.71	84.17	83.29	47
PA	0.067	27	10.5	95.71	77.17	87.50	86.79	48
CA	0.072	28	9.9	102.86	80.00	82.50	88.45	49
IL	0.065	ND	ND	92.86			92.86	50
UT	0.072	39	8.3	102.86	111.43	69.17	94.48	51

# State By State Analyses

## ALABAMA

### Ozone

Significant progress has been made in ozone levels in Alabama. In the 2000 – 2002 time period, approximately 1.7 million people (38.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to 2.9 million people (59.2%), although the standard was lowered from 0.085 ppm to 0.070 ppm. The rest of the people in 2013 – 2015 lived in counties where ozone was not measured. Figure AL-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.083 ppm. By 2013 – 2015 this had lowered to a value of 0.069 ppm, a reduction of 22.9 percent.

### 24-Hour PM-2.5

Significant progress has been made in 24-hour PM-2.5 levels in Alabama. In the 2000 – 2002 time period, approximately 2.4 million people (53.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this had increased to approximately 2.9 million people (59.2%). The remainder of the people in 2013 -2015 lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure AL-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 34 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 19 µg/m<sup>3</sup>, a reduction of 44.1 percent.

### Annual PM-2.5

Progress has been made in annual PM-2.5 levels in Alabama. In the 2000 – 2002 time period, approximately 1.5 million people (33.01%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 2.9 million people (59.2%). The remainder of the people in 2013 – 2015 lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure AL-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 14.9 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.2 µg/m<sup>3</sup>, a reduction of 38.3 percent.

**Table AL-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Baldwin	203,709	0.065	C	N	17	A	8.6	A	N
Clay	13,555	ND	---	---	19	A	8.4	A	N
Colbert	54,354	0.058	B	N	18	A	8.9	A	N
DeKalb	71,130	0.063	C	N	19	A	9.2	A	N
Elmore	81,468	0.060	B	N	ND	---	ND	---	---
Etowah	103,057	0.059	B	N	19	A	9.2	A	N
Houston	104,173	0.060	B	N	18	A	8.1	A	N
Jefferson	660,367	0.064	C	Y	21	A	10.3	B	Y
Madison	353,089	0.062	B	Y	18	A	8.6	A	N
Mobile	415,395	0.064	C	Y	18	A	8.6	A	N
Montgomery	226,519	0.062	B	N	18	A	8.9	A	N
Morgan	119,565	0.061	B	N	18	A	8.9	A	N
Russell	59,660	0.061	B	N	20	A	9.9	B	N
Shelby	208,713	0.065	C	N	18	A	9.2	A	N
Sumter	13,103	0.057	B	N	ND	---	ND	---	---
Talladega	80,862	ND	---	---	19	A	9.5	A	N
Tuscaloosa	203,976	0.059	A	N	19	A	9.0	A	N
<b>Subtotal</b>	2,972,695								
Not Monitored	1,886,284								
<b>Total</b>	4,858,979								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table AL-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.083	34	14.9
2001 – 2003	0.078	30	13.8
2002 – 2004	0.076	31	13.6
2003 – 2005	0.074	33	13.8
2004 – 2006	0.075	33	13.8
2005 – 2007	0.078	31	13.8
2006 – 2008	0.077	29	13.0
2007 – 2009	0.072	26	11.7
2008 - 2010	0.069	22	10.9
2009 – 2011	0.068	22	10.7
2010 – 2012	0.071	21	10.7
2011 – 2013	0.066	21	10.0
2012 – 2014	0.068	19	9.5
2013 – 2015	0.064	19	9.2

# ALABAMA

## Table AL-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	14,143	14,059	13,926	13,882	0	0	197,211	198,596	200,821	202,212	0
B	14,376	639,055	1,570,200	1,213,337	1,430,849	990,512	948,439	544,335	720,564	529,349	320,060	1,523,895	969,652	1,337,014
C	1,696,459	1,497,649	846,289	1,203,965	1,221,975	1,374,354	1,390,971	759,942	2,012,982	2,028,304	1,946,583	1,116,340	1,683,040	1,528,161
D	400,545	159,704	0	0	0	329,083	334,425	412,188	0	0	293,337	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>2,111,380</b>	<b>2,296,408</b>	<b>2,416,489</b>	<b>2,431,445</b>	<b>2,666,883</b>	<b>2,707,875</b>	<b>2,687,717</b>	<b>2,716,465</b>	<b>2,733,546</b>	<b>2,754,864</b>	<b>2,758,576</b>	<b>2,841,056</b>	<b>2,854,906</b>	<b>2,865,175</b>
<b>NM</b>	<b>2,368,709</b>	<b>2,207,083</b>	<b>2,114,240</b>	<b>2,138,360</b>	<b>1,962,098</b>	<b>1,964,965</b>	<b>2,030,489</b>	<b>2,041,473</b>	<b>2,046,190</b>	<b>2,047,876</b>	<b>2,063,447</b>	<b>1,992,666</b>	<b>1,994,471</b>	<b>1,993,804</b>
<b>Total</b>	<b>4,480,089</b>	<b>4,503,491</b>	<b>4,530,729</b>	<b>4,569,805</b>	<b>4,628,981</b>	<b>4,672,840</b>	<b>4,718,206</b>	<b>4,757,938</b>	<b>4,779,736</b>	<b>4,802,740</b>	<b>4,822,823</b>	<b>4,833,722</b>	<b>4,849,377</b>	<b>4,858,979</b>

## 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	2011-2013	2012-2014	2013-2015
A	2,378,101	2,392,278	2,521,776	2,693,437	369,579	578,119	710,633	2,070,212	2,347,434	2,709,069	2,844,233	2,854,736	2,868,803	2,878,124
B	0	0	0	0	536,005	855,231	1,615,710	299,446	164,616	0	0	0	0	0
C	0	0	0	0	1,402,431	1,160,706	82,064	82,305	0	0	0	0	0	0
D	0	0	0	0	163,973	81,895	82,064	0	0	0	0	0	0	0
F	0	0	0	0	163,973	163,791	82,063	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>2,378,101</b>	<b>2,392,278</b>	<b>2,521,776</b>	<b>2,693,437</b>	<b>2,635,961</b>	<b>2,839,742</b>	<b>2,572,534</b>	<b>2,457,963</b>	<b>2,512,050</b>	<b>2,709,069</b>	<b>2,844,233</b>	<b>2,754,736</b>	<b>2,868,803</b>	<b>2,878,124</b>
<b>NM</b>	<b>2,101,988</b>	<b>2,111,213</b>	<b>2,008,953</b>	<b>1,876,368</b>	<b>1,993,020</b>	<b>1,833,098</b>	<b>2,145,672</b>	<b>2,305,975</b>	<b>2,267,686</b>	<b>2,093,671</b>	<b>1,977,790</b>	<b>1,978,986</b>	<b>1,980,574</b>	<b>1,980,855</b>
<b>Total</b>	<b>4,480,089</b>	<b>4,503,491</b>	<b>4,530,729</b>	<b>4,569,805</b>	<b>4,628,981</b>	<b>4,672,840</b>	<b>4,718,206</b>	<b>4,757,938</b>	<b>4,779,736</b>	<b>4,802,740</b>	<b>4,822,823</b>	<b>4,833,722</b>	<b>4,849,377</b>	<b>4,858,979</b>

## 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	2011-2013	2012-2014	2013-2015
A	147,857	350,550	435,896	309,307	369,579	375,262	409,196	1,719,057	2,365,036	2,489,764	2,456,409	1,306,081	1,840,891	2,850,716
B	412,925	319,648	539,308	755,253	686,458	523,391	597,379	568,296	147,014	219,305	387,824	1,054,046	637,908	697,225
C	918,977	1,453,844	1,309,639	1,485,586	1,119,532	1,480,538	401,831	164,610	0	0	0	494,609	390,004	330,183
D	660,991	49,065	143,216	143,291	296,419	296,760	82,064	0	0	0	0	0	0	0
F	237,351	219,171	93,717	0	163,973	163,791	82,064	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>2,378,101</b>	<b>2,392,278</b>	<b>2,521,776</b>	<b>2,693,437</b>	<b>2,635,961</b>	<b>2,839,742</b>	<b>2,572,534</b>	<b>2,451,963</b>	<b>2,512,050</b>	<b>2,709,069</b>	<b>2,844,233</b>	<b>2,854,736</b>	<b>2,868,803</b>	<b>2,878,124</b>
<b>NM</b>	<b>2,101,988</b>	<b>2,111,213</b>	<b>2,008,953</b>	<b>1,876,368</b>	<b>1,993,020</b>	<b>1,833,098</b>	<b>2,145,672</b>	<b>2,305,975</b>	<b>2,267,686</b>	<b>2,093,671</b>	<b>1,977,790</b>	<b>1,978,986</b>	<b>1,980,574</b>	<b>1,980,855</b>
<b>Total</b>	<b>4,480,089</b>	<b>4,503,491</b>	<b>4,530,729</b>	<b>4,569,805</b>	<b>4,628,981</b>	<b>4,672,840</b>	<b>4,718,206</b>	<b>4,757,938</b>	<b>4,779,736</b>	<b>4,802,740</b>	<b>4,802,823</b>	<b>4,833,722</b>	<b>4,849,377</b>	<b>4,858,979</b>

NM = Not Monitored

Figure AL-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Alabama

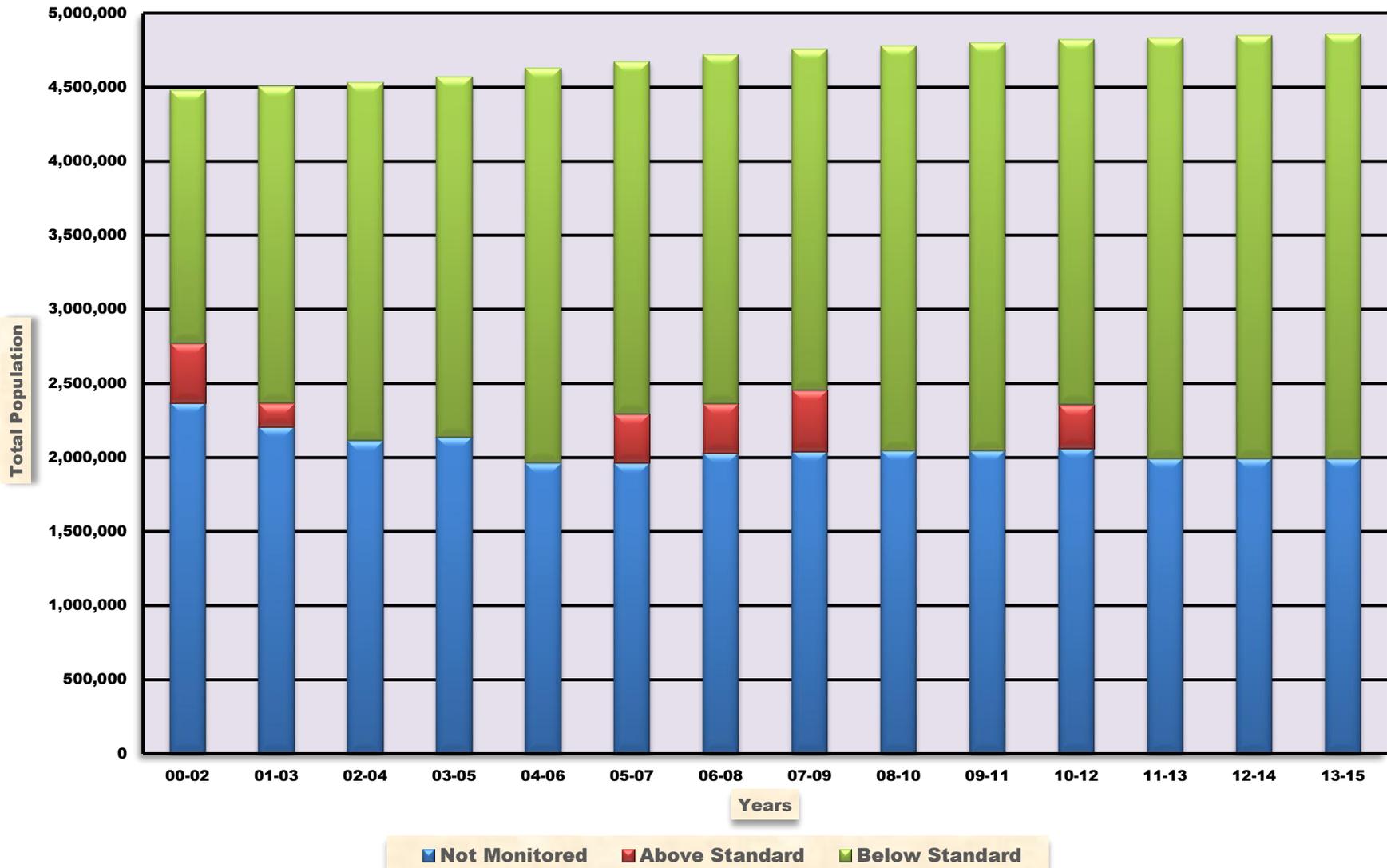


Figure AL-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Alabama

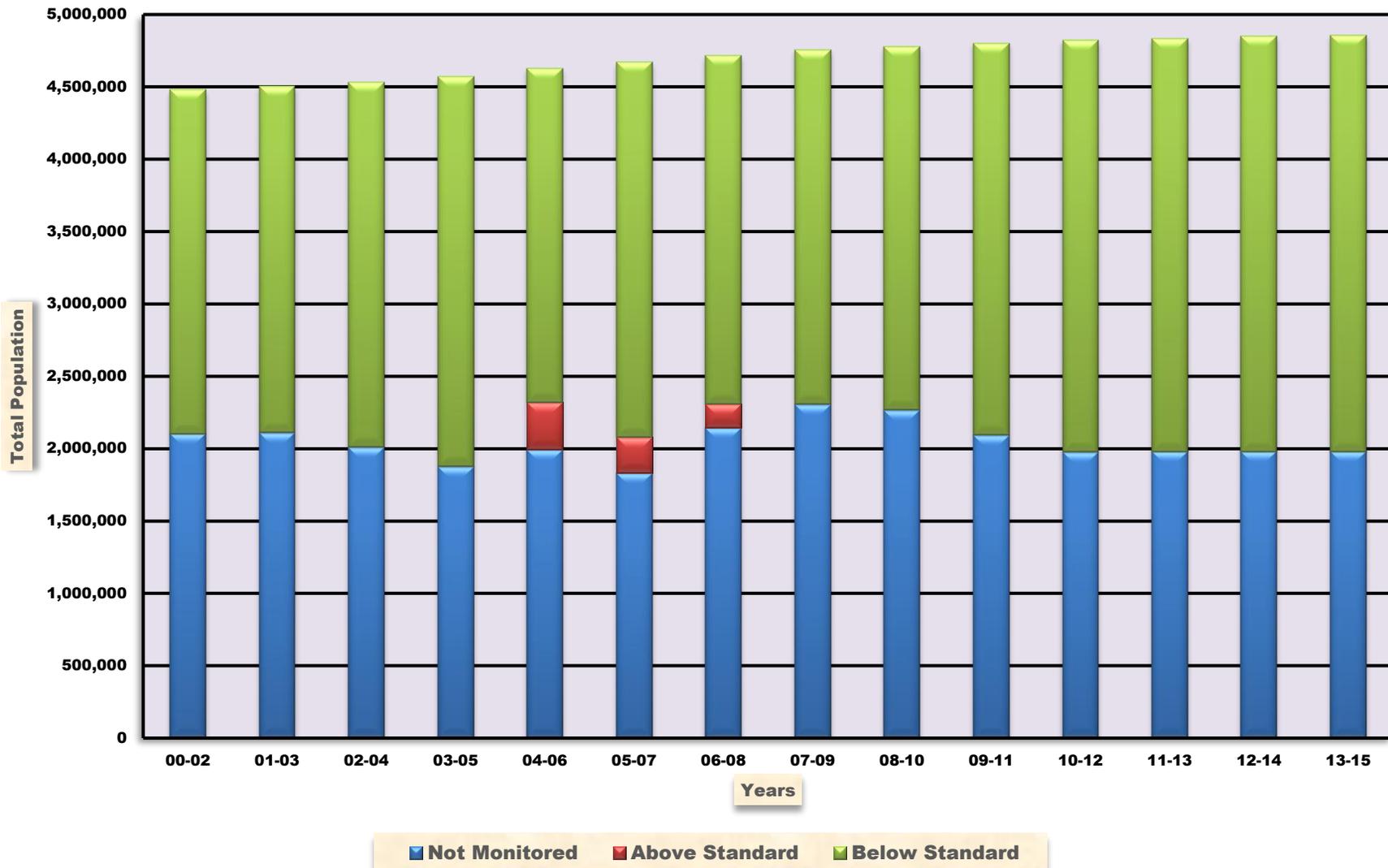
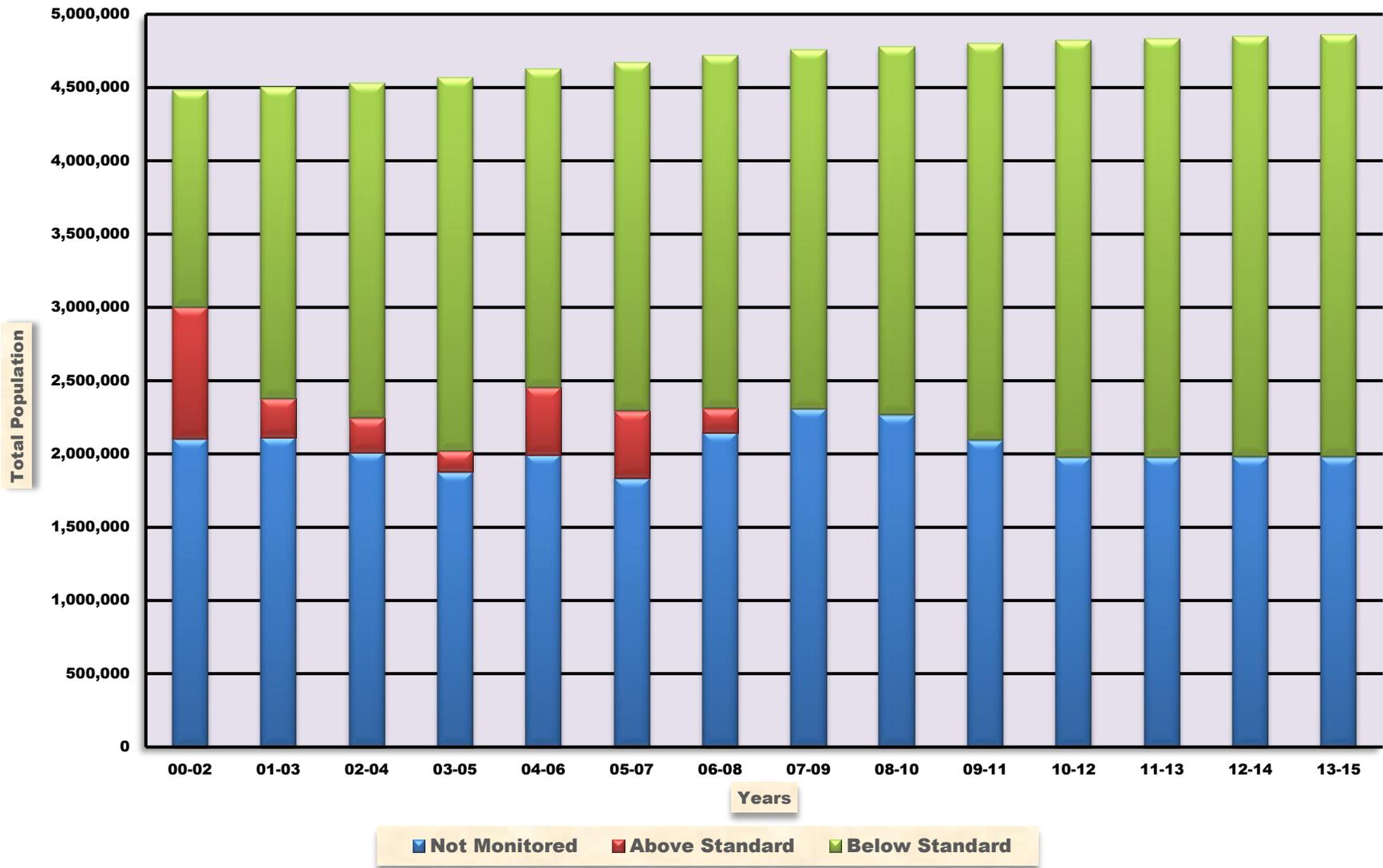


Figure AL-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Alabama



# ALASKA

## Ozone

Ozone levels in Alaska have historically been better than the standard. In the 2000 – 2002 time period, approximately two thousand people (0.3%) lived in counties that met the ozone standard and the rest of the population lived in counties where ozone was not measured. By 2013 – 2015 there were 101,550 people (13.8%) living in counties that met the ozone standard and the rest of the population lived in counties where ozone is not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure AK-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.051 ppm. By 2013 – 2015 this had lowered to a value of 0.045 ppm, a reduction of 11.8 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 450,000 people (70.0%) in Alaska lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 482,000 people (65.3%). The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure AK-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 24 µg/m<sup>3</sup>. By 2013 – 2015 this had increased to a value of 31 µg/m<sup>3</sup>, an increase of 29.2 percent.

## Annual PM-2.5

Annual PM-2.5 levels in Alaska have historically been better than the standard. In the 2000 – 2002 time period, approximately 450,000 people (70.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 482,000 (65.3%). The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure AK-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 7.4 µg/m<sup>3</sup>. By 2013 – 2015 this had increased to a value of 8.6 µg/m<sup>3</sup>, an increase of 16.2 percent.

**Table AK-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Anchorage	298,695	ND	--	--	15	A	5.4	A	N
Denali	1,919	0.054	A	N	ND	--	ND	--	--
<b>Fairbanks</b>	<b>99,631</b>	0.045	A	N	<b>80</b>	<b>F</b>	18.8	F	Y
Juneau	32,756	ND	--	--	24	A	6.8	A	N
Matanuska	1,563	ND	--	--	35	C	7.0	A	N
<b>Subtotal</b>	<b>434,564</b>								
Not Monitored	303,868								
<b>Total</b>	<b>738,432</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table AK-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.051	24	7.4
2001 – 2003	0.054	24	7.1
2002 – 2004	0.053	26	7.4
2003 – 2005	0.052	27	7.6
2004 – 2006	0.052	30	7.7
2005 – 2007	0.052	26	7.1
2006 – 2008	0.058	27	6.9
2007 – 2009	0.058	24	6.9
2008 - 2010	0.058	26	7.2
2009 – 2011	0.053	25	7.0
2010 – 2012	0.045	25	6.6
2011 – 2013	0.052	22	6.3
2012 -2014	0.046	23	6.4
2013 - 2015	0.045	31	8.6

# ALASKA

**Table AK-3  
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	2011-2013	2012-2014	2013-2015
A	1,862	1,825	1,877	1,834	1,837	1,803	1,803	1,817	1,826	1,855	300,485	1,867	101,278	101,550
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,862	1,825	1,877	1,834	1,837	1,803	1,803	1,817	1,826	1,855	300,485	1,867	101,278	101,550
NM	640,475	646,589	657,409	665,112	673,465	678,497	685,652	697,078	708,405	720,863	430,964	733,265	635,454	636,882
Total	642,337	648,414	659,286	666,946	675,302	680,300	687,455	698,895	710,231	722,718	731,449	735,132	736,732	738,432

**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	2011-2013	2012-2014	2013-2015
A	449,389	457,433	394,630	397,928	280,085	278,792	281,554	287,677	323,101	295,570	378,129	428,802	398,671	331,451
B	0	0	0	0	30,808	81,402	84,079	0	0	32,164	0	0	0	0
C	0	0	0	0	0	0	31,110	30,857	0	0	46,962	0	32,627	150,911
D	0	0	0	0	0	30,682	0	0	0	0	0	0	0	0
F	0	0	0	0	90,545	93,545	94,552	95,238	97,581	99,192	100,272	100,436	99,357	49,815
Subtotal	449,389	457,433	394,630	397,928	401,438	484,421	491,295	413,772	420,682	426,926	525,363	529,238	530,655	532,177
NM	192,948	190,981	264,656	269,018	273,864	195,879	196,160	285,123	289,549	295,792	206,086	205,894	206,077	206,255
Total	642,337	648,414	659,286	666,946	675,302	680,300	687,455	698,895	710,231	722,718	731,449	735,132	736,732	738,432

**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	2011-2013	2012-2014	2013-2015
A	363,294	457,433	394,630	397,928	401,438	484,421	491,295	413,772	420,682	426,926	525,363	428,802	431,298	482,362
B	86,095	0	0	0	0	0	0	0	0	0	0	50,218	99,357	0
C	0	0	0	0	0	0	0	0	0	0	0	50,218	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	49,815
Subtotal	449,389	457,433	394,630	397,928	401,438	484,421	491,295	413,772	420,682	426,926	525,363	529,238	530,655	532,177
NM	192,948	190,981	264,656	269,018	273,864	195,879	196,160	285,123	289,549	295,792	206,086	205,894	206,077	206,255
Total	642,337	648,414	659,286	666,946	675,302	680,300	687,455	698,895	710,231	722,718	731,449	735,132	736,732	738,432

NM = Not Monitored

Figure AK-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Alaska

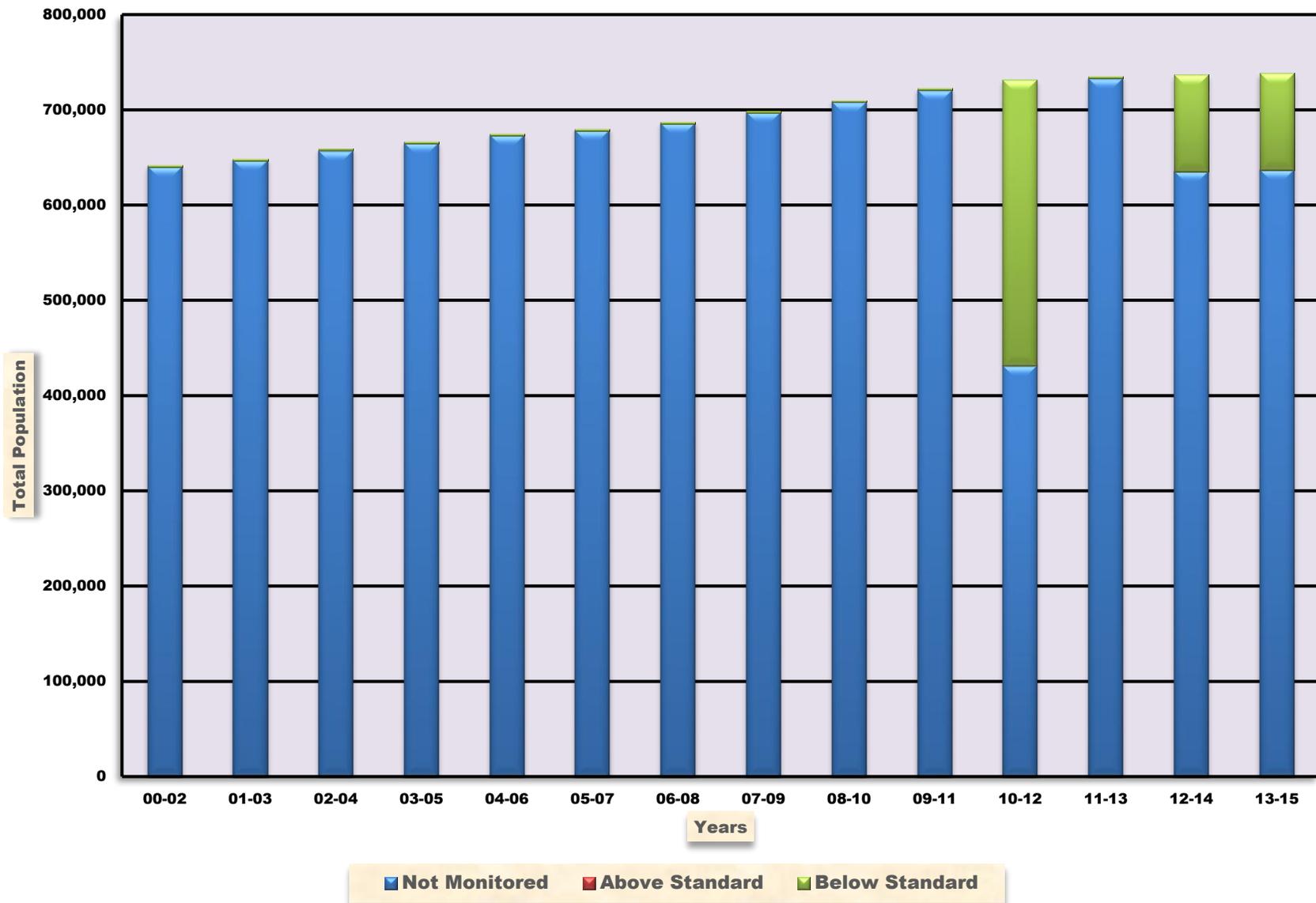


Figure AK-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Alaska

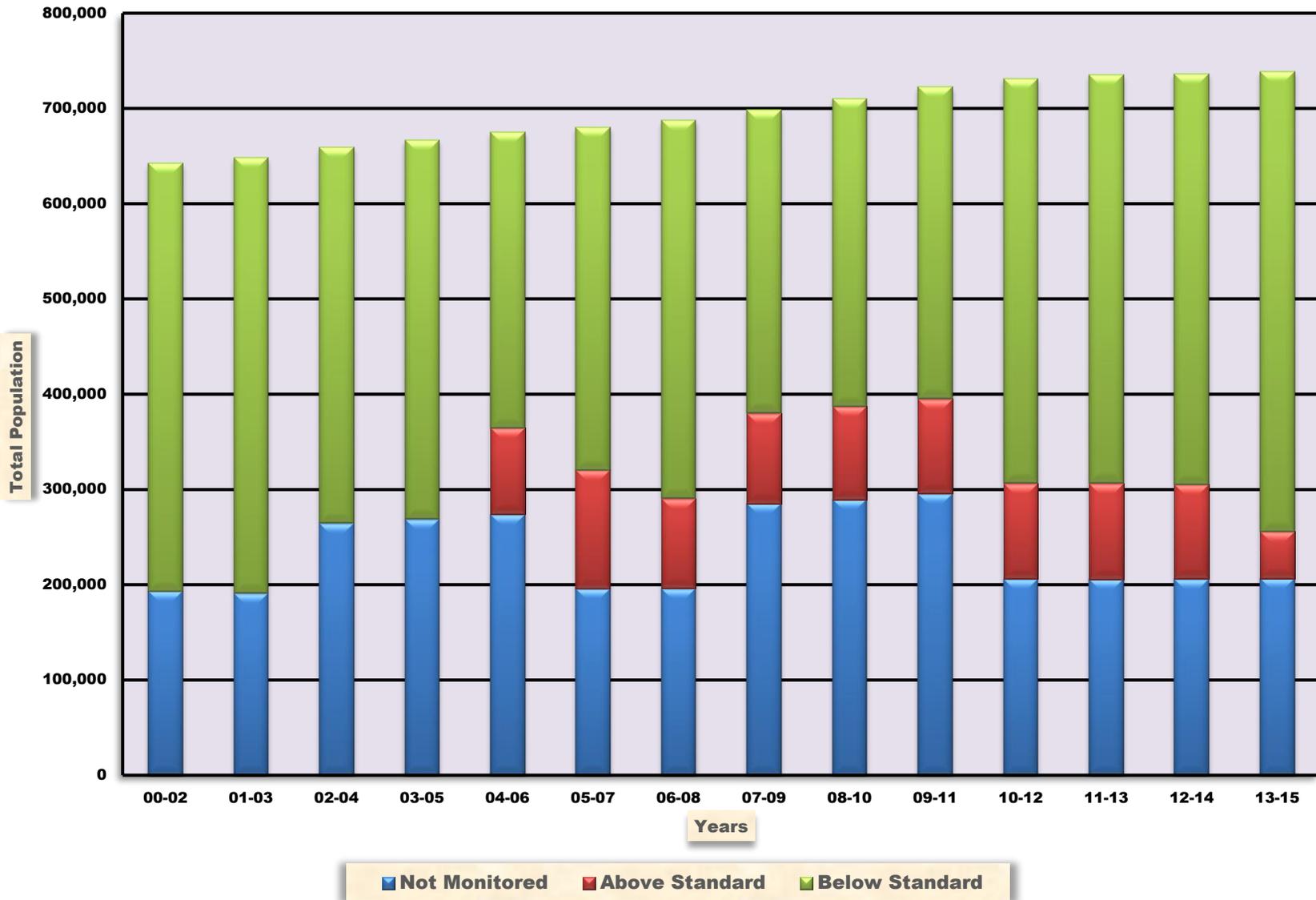
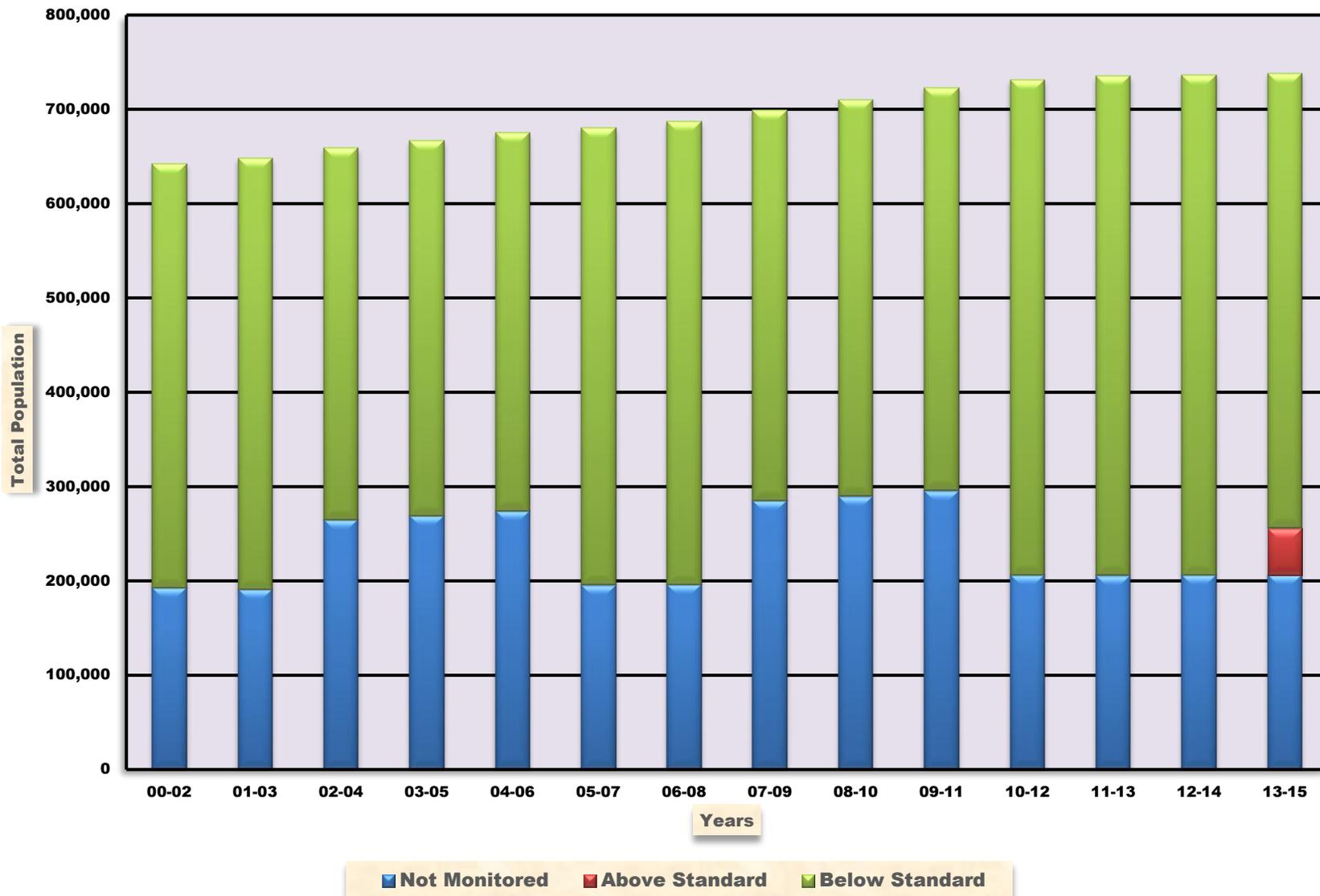


Figure AK-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Alaska



# ARIZONA

## Ozone

In the 2000 – 2002 time period, approximately 4.5 million people (84.3%) lived in counties that met the ozone standard. By 2013 – 2015 this had decreased to 2.9 million people (42.5%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure AZ-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.078 ppm. By 2013 – 2015 this had decreased to a value of 0.070 ppm, a reduction of 10.3 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 3.5 million people (65.7%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this had increased to approximately 5.6 million people (82.5%). The remainder of the people in 2012 – 2014 lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m3 to 35 µg/m3. Figure AZ-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 27 µg/m3. By 2013 – 2015 this had lowered to a value of 19 µg/m3, a reduction of 29.6 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 3.5 million people (65.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 5.6 million people (82.5%). The standard was lowered from 15 µg/m3 to 12 µg/m3. Figure AZ-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 10.9 µg/m3. By 2013 – 2015 this had lowered to a value of 7.4 µg/m3, a reduction of 32.1 percent.

**Table AZ-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Cochise	126,427	0.068	C	N	ND	--	ND	--	--
Coconino	139,097	0.069	C	Y	ND	--	ND	--	--
<b>Gila</b>	<b>53,159</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
La Paz	20,152	0.070	C	N	ND	--	ND	--	--
<b>Maricopa</b>	<b>4,167,947</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	21	A	8.0	A	Y
Navajo	108,277	0.066	C	N	ND	--	ND	--	--
Pima	1,010,025	0.065	C	Y	13	A	5.4	A	Y
Pinal	406,584	0.067	C	Y	14	A	6.4	A	Y
Santa Cruz	46,461	ND	--	--	23	A	8.6	A	N
Yavapai	222,255	0.069	C	N	ND	--	ND	--	--
<b>Yuma</b>	<b>204,275</b>	<b>0.076</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
<b>Subtotal</b>	<b>6,504,659</b>								
Not Monitored	323,406								
<b>Total</b>	<b>6,828,065</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table AZ-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.078	27	10.9
2001 – 2003	0.078	25	9.7
2002 – 2004	0.076	25	9.7
2003 – 2005	0.075	26	9.8
2004 – 2006	0.074	25	9.8
2005 – 2007	0.074	23	9.6
2006 – 2008	0.073	20	9.2
2007 – 2009	0.071	19	8.6
2008 - 2010	0.070	17	7.8
2009 – 2011	0.070	17	7.5
2010 – 2012	0.073	19	8.2
2011 – 2013	0.073	19	8.0
2012 -2014	0.071	19	8.1
2013 - 2015	0.070	19	7.4

# ARIZONA

## Table AZ-3 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	2011-2013	2012-2014	2013-2015
A	0	0	150,224	153,383	194,990	1,113,140	0	0	0	0	0	0	0	0
B	1,580,477	1,684,158	1,949,986	2,165,407	4,134,123	2,779,212	211,514	1,350,842	1,040,204	1,243,297	543,546	548,030	554,398	315,705
C	2,967,695	2,770,898	2,874,637	2,963,670	1,123,977	1,687,829	2,461,501	4,000,284	4,457,912	4,547,673	3,819,576	3,862,360	3,924,430	2,583,056
D	0	184,915	0	0	0	0	2,034,771	316,981	318,093	323,354	1,820,083	1,847,971	1,882,966	3,559,437
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	4,548,172	4,639,971	4,974,847	5,282,460	5,453,091	5,580,181	5,707,846	5,668,107	5,816,209	6,114,324	6,183,205	6,258,361	6,361,797	6,458,198
NM	848,083	870,393	677,557	556,617	576,050	587,500	572,516	675,047	575,808	368,181	370,050	368,263	369,687	369,867
Total	5,396,255	5,510,364	5,652,404	5,839,077	6,029,141	6,167,681	6,280,362	6,343,154	6,392,017	6,482,505	6,553,255	6,626,624	6,731,484	6,828,065

## 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	2011-2013	2012-2014	2013-2015
A	3,543,957	4,514,243	4,703,531	4,863,741	2,931,198	3,629,680	5,335,026	5,299,643	5,524,768	5,933,363	6,002,686	5,091,200	4,952,215	5,110,024
B	0	0	0	0	1,214,295	927,988	0	23,505	172,677	447,676	47,303	702,556	454,132	520,993
C	0	0	0	0	1,214,295	927,989	0	0	0	0	0	0	133,973	0
D	0	0	0	0	44,298	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	45,338	46,144	116,610	0	0	0	0	0	0
Subtotal	3,543,957	4,514,243	4,703,531	4,863,741	5,404,085	5,530,995	5,381,170	5,439,758	5,697,445	5,981,039	6,049,989	5,793,756	5,540,320	5,631,017
NM	1,852,298	996,121	948,875	975,336	625,056	636,686	899,192	903,396	694,572	501,460	503,266	832,868	1,191,164	1,197,048
Total	5,396,255	5,510,364	5,652,404	5,839,077	6,029,141	6,167,681	6,280,362	6,343,154	6,392,017	6,482,505	6,553,255	6,626,624	6,731,484	6,828,065

## 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	2011-2013	2012-2014	2013-2015
A	2,418,819	4,514,243	4,703,531	4,863,741	4,145,492	3,629,680	4,469,043	5,299,643	5,572,188	5,853,375	5,920,867	4,471,658	4,043,950	4,068,037
B	1,125,138	0	0	0	1,258,593	1,855,977	754,212	23,505	0	127,664	129,122	46,768	1,362,397	1,562,980
C	0	0	0	0	0	0	0	0	0	0	0	1,145,546	0	0
D	0	0	0	0	0	0	0	0	125,257	0	0	0	0	0
F	0	0	0	0	0	45,338	157,914	116,610	0	0	0	129,784	133,973	0
Subtotal	3,543,957	4,514,243	4,703,531	4,863,741	5,404,085	5,530,995	5,381,170	5,439,758	5,697,445	5,981,039	6,049,989	5,793,756	4,540,320	5,631,017
NM	1,852,298	996,121	948,873	975,336	625,056	636,686	899,192	903,396	694,572	501,466	503,266	832,868	1,191,164	1,197,048
Total	5,396,255	5,510,364	5,652,404	5,839,077	6,029,141	6,167,681	6,280,362	6,343,154	6,392,017	6,482,505	6,553,255	6,626,624	6,731,484	6,828,065

NM = Not Monitored

Figure AZ-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Arizona

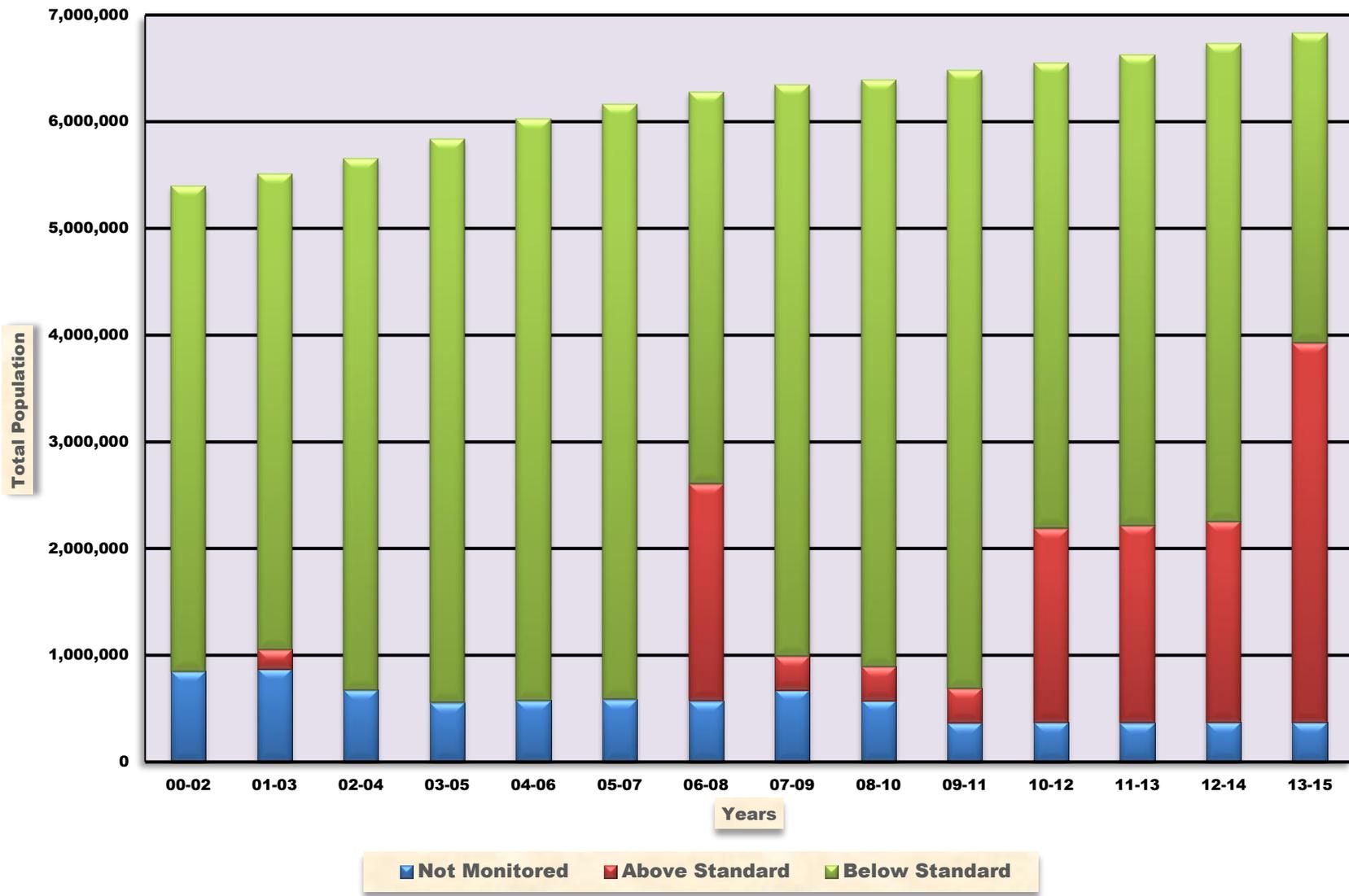


Figure AZ-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Arizona

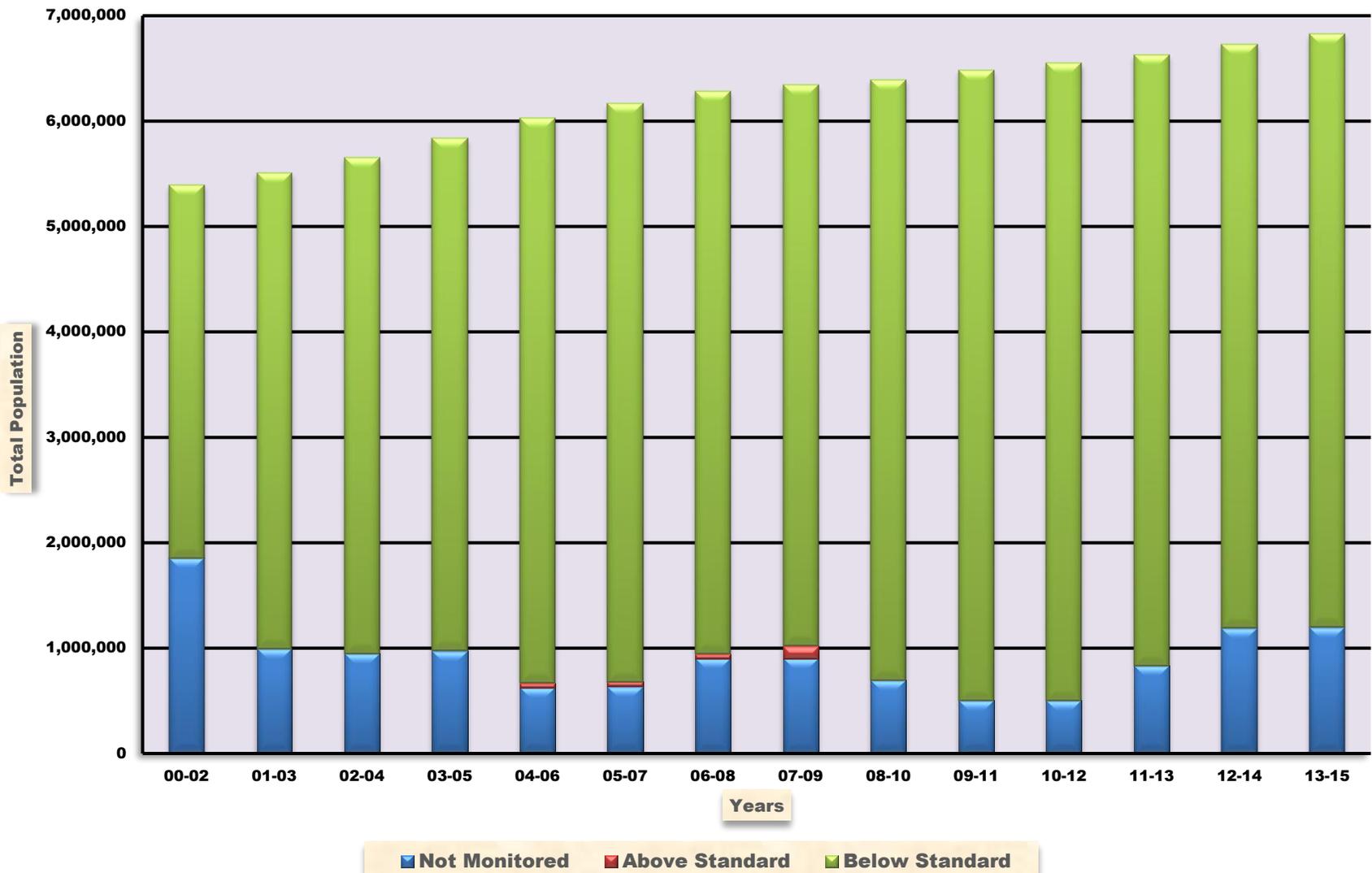
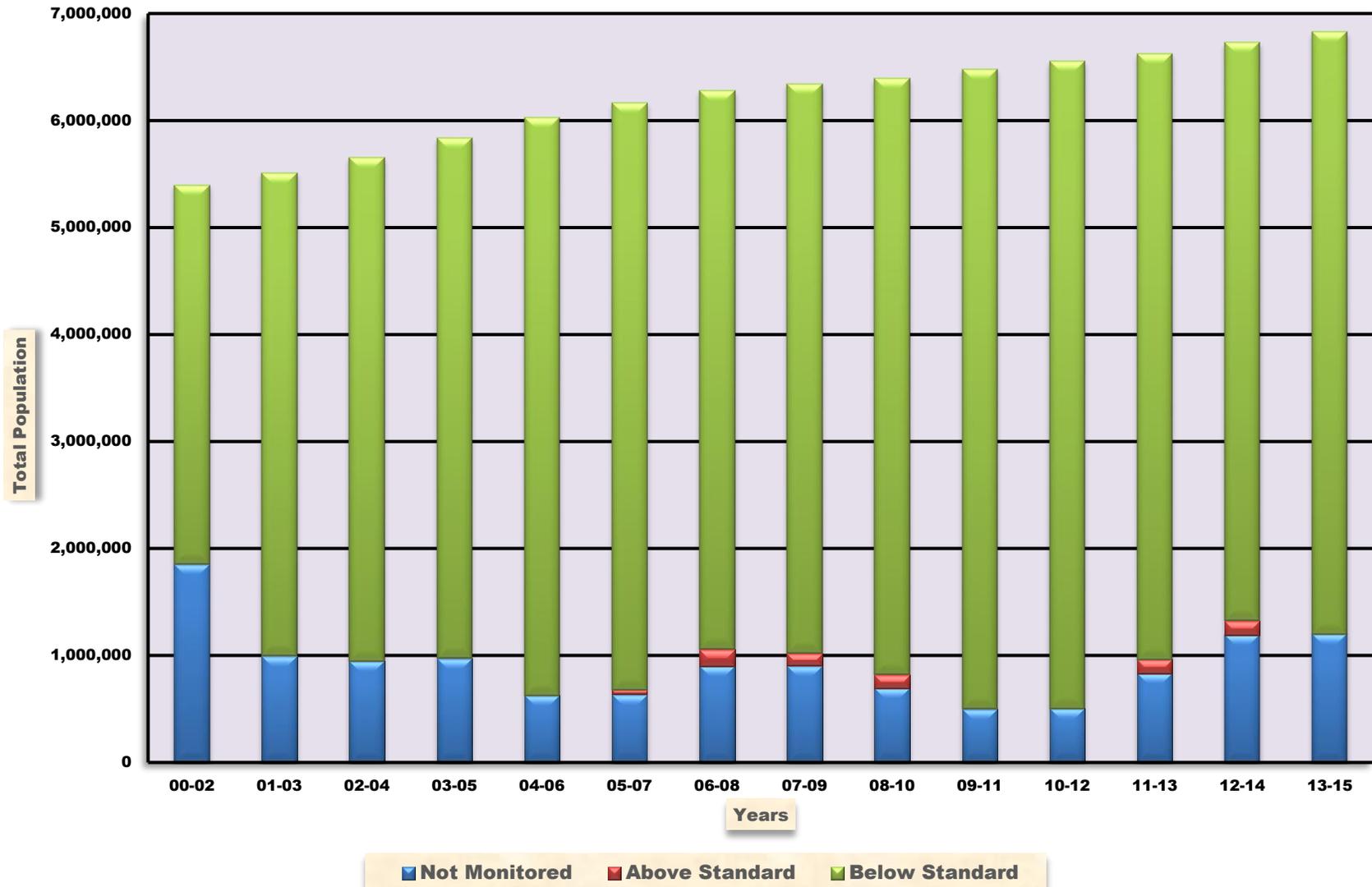


Figure AZ-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Arizona



# ARKANSAS

## Ozone

Progress has been made in ozone levels in Arkansas. In the 2000 – 2002 time period, approximately 200,000 people (7.4%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 718,000 people (24.1%) although the standard was lowered from 0.085 ppm to 0.070 ppm. Figure AR-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.085 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 24.7 percent.

## 24-Hour PM-2.5

24-hour PM-2.5 levels in Arkansas have historically been better than the standard. In the 2000 – 2002 time period, approximately 1 million people (38.2%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 0.9 million people (29.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure AR-2 shows the distribution of people by year. The population weighted 24-hour design value in 2000 – 2002 was 30 µg/m<sup>3</sup>. By 2013 - 2015 this had lowered to a value of 21 µg/m<sup>3</sup>, a reduction of 30.0 percent.

## Annual PM-2.5

Annual PM-2.5 levels in Arkansas have historically been better than the standard. In the 2000 – 2002 time period, approximately 1 million people (38.2%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 0.9 million people (29.6%). The remainder of the population lived in areas where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure AR-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 13.2 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.5 µg/m<sup>3</sup>, a reduction of 28.0 percent.

**Table AR-1**  
**2013 – 2015**

		OZONE			PARTICLE POLLUTION (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Arkansas	18,594	ND	--	--	21	A	9.5	A	N
Ashley	20,948	ND	--	--	22	A	9.3	A	N
Clark	22,576	0.063	B	N	ND	--	ND	--	--
Crittenden	49,548	0.071	C	N	24	A	9.8	B	N
Garland	97,322	ND	--	--	21	A	9.7	B	N
Jackson	17,534	ND	--	--	21	A	9.3	A	N
Newton	7,904	0.065	B	N	ND	--	ND	--	--
Polk	20,225	0.067	B	N	23	A	9.8	B	N
Pulaski	392,702	0.070	C	Y	24	A	10.7	B	Y
Union	40,227	ND	--	--	21	A	9.2	A	N
Washington	220,792	0.068	C	Y	20	A	9.2	A	N
<b>Subtotal</b>	908,372								
Not Monitored	2,057,997								
<b>Total</b>	<b>2,966,369</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table AR-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.085	30	13.2
2001 – 2003	0.080	29	12.5
2002 – 2004	0.078	27	11.9
2003 – 2005	0.076	31	13.0
2004 – 2006	0.078	30	13.0
2005 – 2007	0.080	31	13.1
2006 – 2008	0.076	27	11.9
2007 – 2009	0.069	26	11.4
2008 - 2010	0.068	23	11.1
2009 – 2011	0.071	23	11.2
2010 – 2012	0.075	22	11.2
2011 – 2013	0.073	22	10.4
2012 -2014	0.069	22	10.0
2013 - 2015	0.064	21	9.5

# ARKANSAS

**Table AR-3  
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	2011-2013	2012-2014	2013-2015
A	0	9,239	9,334	0	0	0	0	0	0	0	0	0	0	0
B	9,150	0	191,807	253,983	132,356	153,273	0	199,774	338,978	0	0	8,064	161,101	30,546
C	190,698	373,871	183,304	122,758	247,765	248,935	154,333	408,947	326,729	622,694	499,270	497,672	552,646	687,320
D	182,163	50,252	50,266	50,244	50,360	50,438	301,744	50,929	0	50,525	179,672	180,174	0	0
F	50,622	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	432,633	433,362	434,711	426,985	430,482	452,646	456,077	659,650	665,707	673,219	678,942	685,910	713,747	717,866
NM	2,273,294	2,291,454	2,314,975	2,354,112	2,391,280	2,396,004	2,418,477	2,237,193	2,250,211	2,264,760	2,270,189	2,273,463	2,252,622	2,260,338
Total	2,705,927	2,724,816	2,749,686	2,781,097	2,821,761	2,848,650	2,874,554	2,896,843	2,915,918	2,937,979	2,949,131	2,959,373	2,966,369	2,978,204

**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	2011-2013	2012-2014	2013-2015
A	1,034,249	1,052,153	1,070,181	872,968	20,422	0	858,706	866,226	1,253,477	1,140,238	1,068,895	521,388	877,892	881,251
B	0	0	0	0	684,792	647,540	176,221	177,613	0	0	0	0	0	0
C	0	0	0	0	174,242	237,139	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,034,249	1,052,153	1,070,181	872,968	879,456	884,679	1,034,927	1,043,839	1,253,477	1,140,238	1,068,895	521,388	877,892	881,251
NM	1,671,678	1,672,663	1,679,505	1,908,129	1,942,305	1,963,971	1,839,627	1,853,004	1,662,441	1,797,741	1,880,236	2,437,985	2,088,477	2,096,953
Total	2,705,927	2,724,816	2,749,686	2,781,097	2,821,761	2,848,650	2,874,554	2,896,843	2,915,918	2,937,979	2,949,131	2,959,373	2,966,369	2,978,204

**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	2011-2013	2012-2014	2013-2015
A	203,251	296,604	557,145	20,203	43,666	0	524,985	790,470	898,312	1,140,238	1,068,895	0	277,868	488,587
B	416,049	390,291	513,036	607,249	588,025	697,978	509,942	253,369	255,165	0	0	482,104	469,123	392,664
C	414,949	365,258	0	245,516	247,765	186,701	0	0	0	0	0	39,284	130,901	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,034,249	1,052,153	1,070,181	872,968	879,456	884,679	1,034,927	1,043,839	1,253,477	1,140,238	1,068,895	521,388	877,892	881,251
NM	1,671,678	1,672,663	1,679,505	1,908,129	1,942,305	1,963,971	1,839,627	1,853,004	1,662,441	1,797,741	1,880,236	2,437,985	2,088,477	2,096,953
Total	2,705,927	2,724,816	2,749,686	2,781,097	2,821,761	2,848,650	2,874,554	2,896,843	2,915,918	2,937,979	2,949,131	2,959,373	2,966,369	2,978,204

NM = Not Monitored

Figure AR-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Arkansas

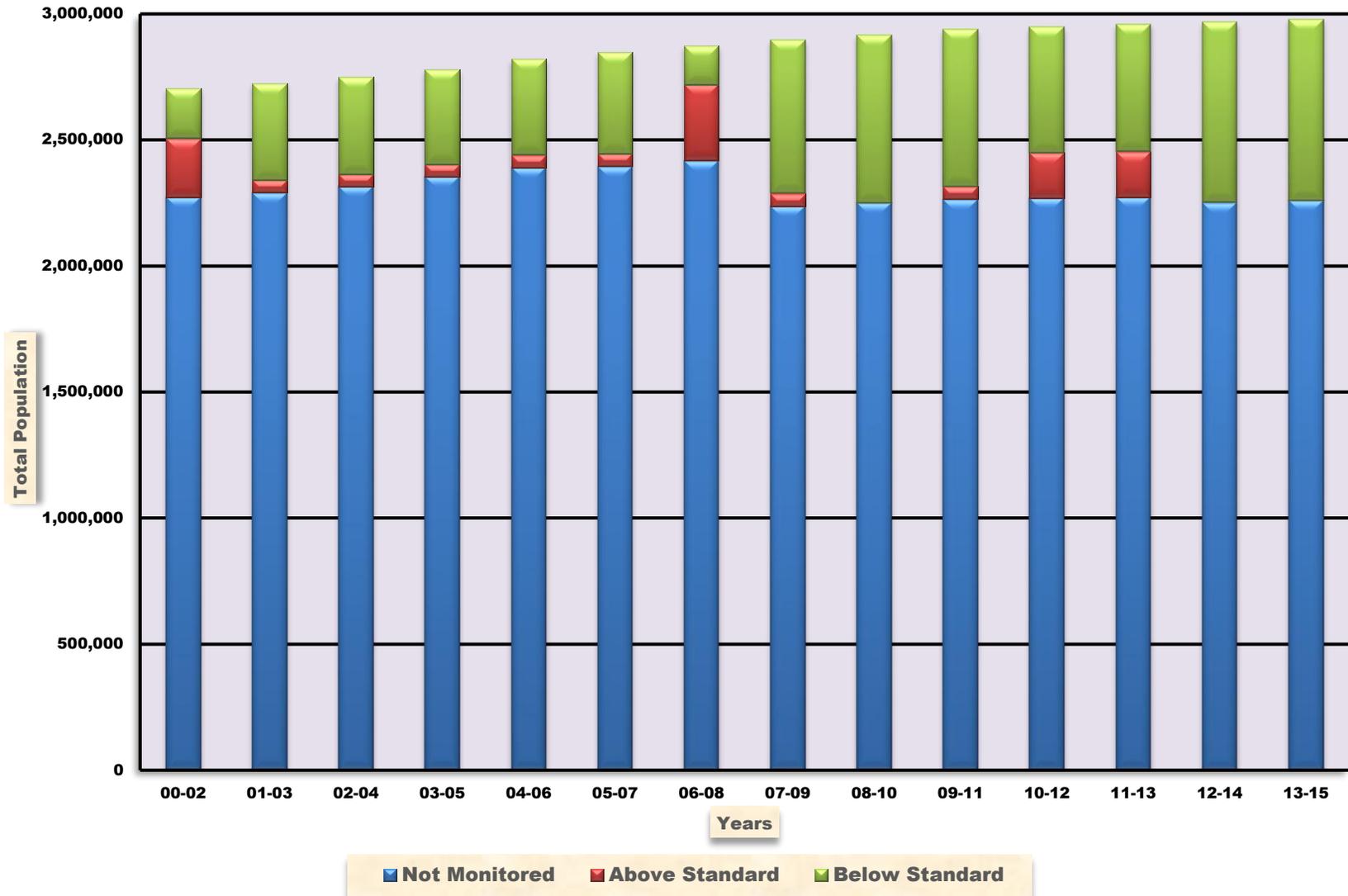


Figure AR-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Arkansas

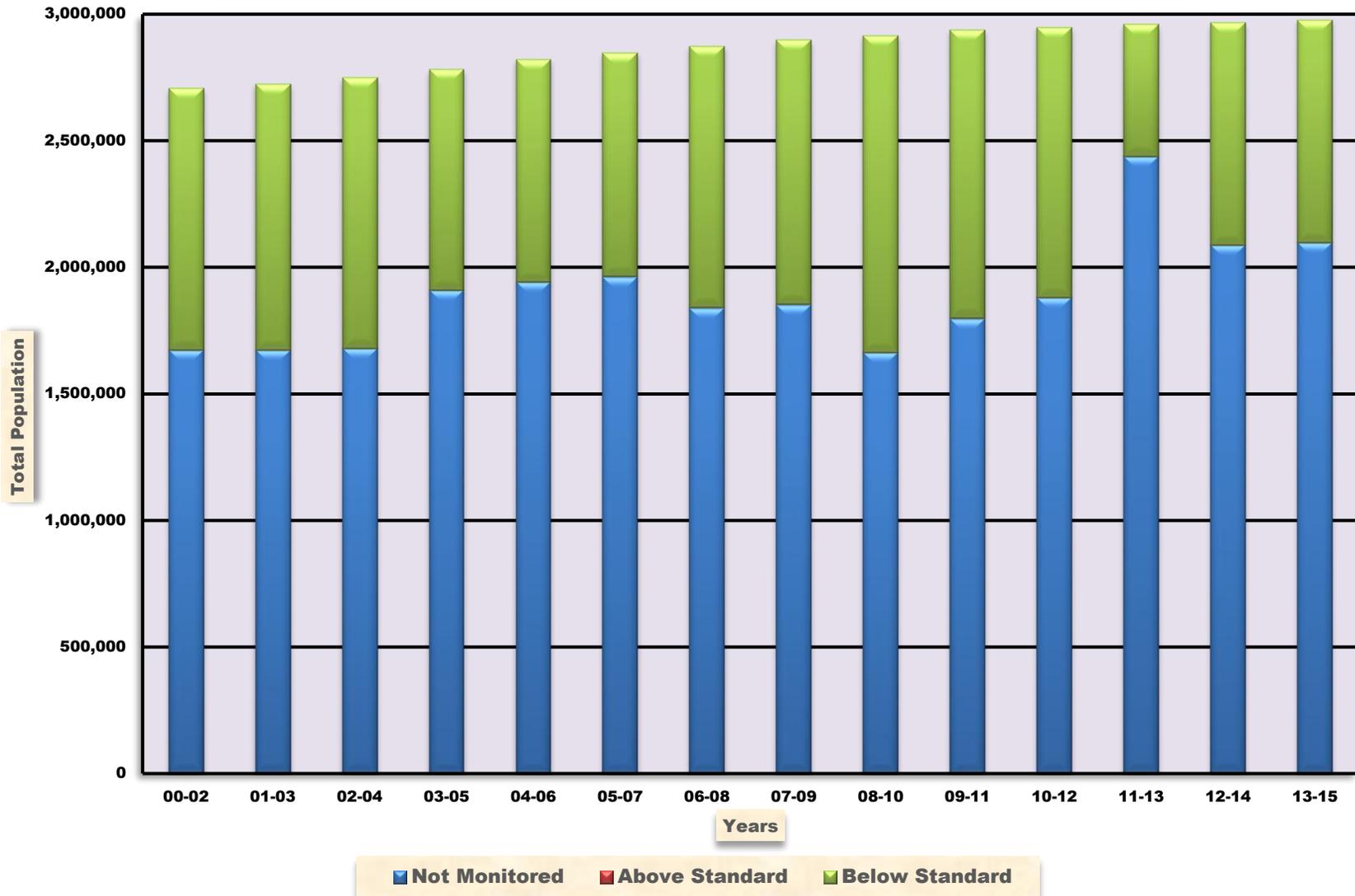
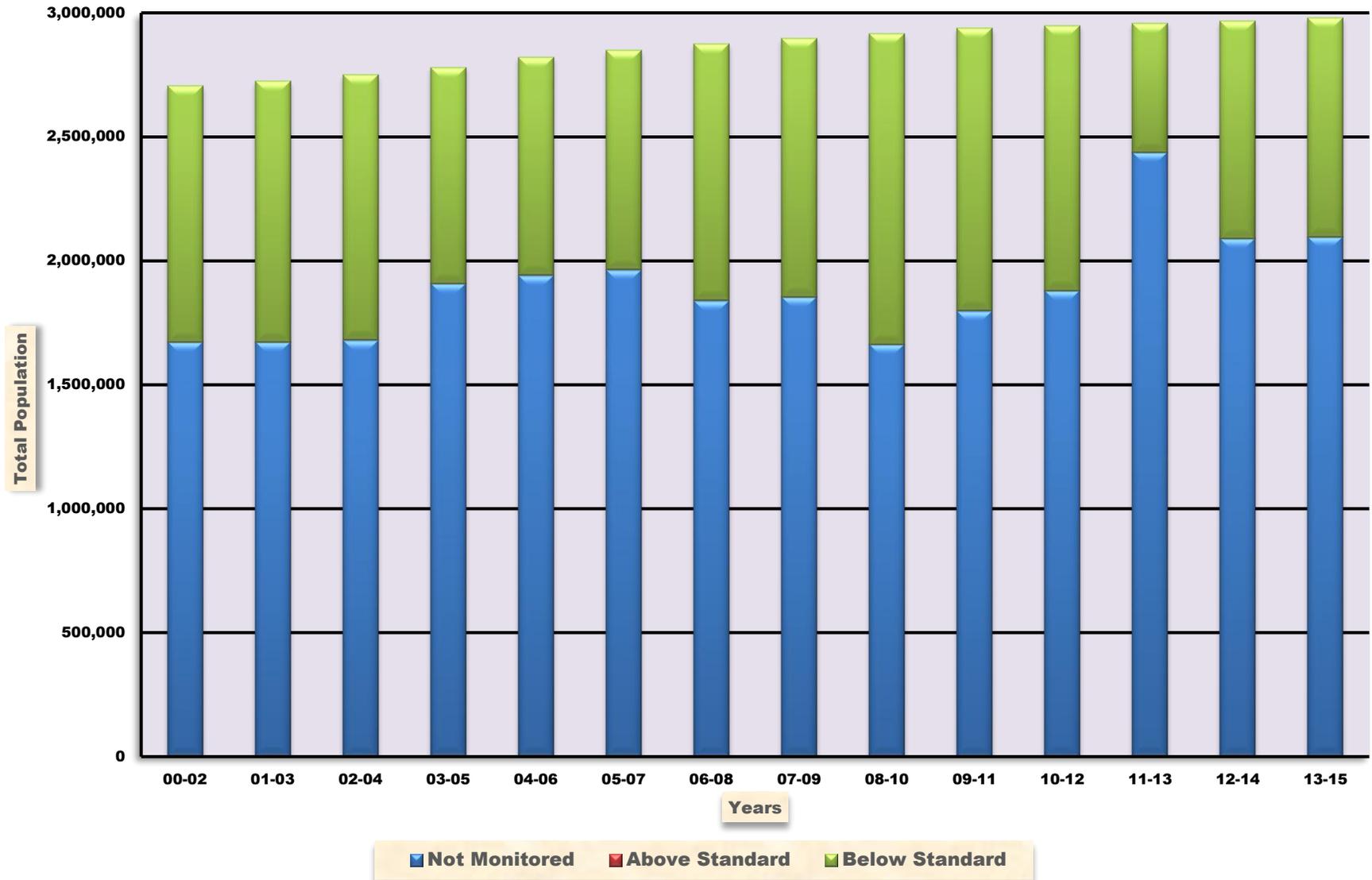


Figure AR-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Arkansas



# CALIFORNIA

## Ozone

In the 2000 – 2002 time period, approximately 21.4 million people (61.6%) lived in counties that met the ozone standard. By 2013 – 2015 this had decreased to approximately 19.4 million people (49.51%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure CA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.079 ppm. By 2013 – 2015 this had lowered to a value of 0.072 ppm, a reduction of 8.9 percent.

## 24-Hour PM-2.5

Significant progress has been made in 24-hour PM-2.5 levels in California. In the 2000 – 2002 time period, approximately 27 million people (77.4%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this had increased to approximately 34.5 million people (88.0%). The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure CA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 51 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 28 µg/m<sup>3</sup>, a reduction of 45.1 percent.

## Annual PM-2.5

Significant progress has been made in annual PM-2.5 levels in California. In the 2000 – 2002 time period, approximately 12.8 million people (36.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 31.5 million people (80.6%). The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure CA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 17.1 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.9 µg/m<sup>3</sup>, a reduction of 42.1 percent.

# CALIFORNIA

## Table CA-1 2013 – 2015

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Alameda	1,638,215	0.059	B	Y	27	A	9.4	A	Y
<b>Amador</b>	<b>37,001</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	<b>ND</b>	<b>--</b>	<b>ND</b>	<b>--</b>	<b>--</b>
Butte	225,411	0.069	C	Y	29	B	9.3	A	N
<b>Calaveras</b>	<b>44,828</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	<b>22</b>	<b>A</b>	<b>8.6</b>	<b>A</b>	<b>N</b>
Colusa	21,482	0.060	B	N	22	A	7.6	A	N
Contra Costa	1,126,745	0.061	B	Y	25	A	9.1	A	Y
<b>El Dorado</b>	<b>184,452</b>	<b>0.080</b>	<b>F</b>	<b>Y</b>	<b>ND</b>	<b>--</b>	<b>ND</b>	<b>--</b>	<b>--</b>
<b>Fresno</b>	<b>974,861</b>	<b>0.087</b>	<b>F</b>	<b>N</b>	<b>51</b>	<b>F</b>	<b>14.4</b>	<b>F</b>	<b>Y</b>
Glenn	28,017	0.065	C	N	ND	--	ND	--	--
Humboldt	135,727	0.044	A	N	12	A	4.0	A	N
<b>Imperial</b>	<b>180,191</b>	<b>0.075</b>	<b>D</b>	<b>Y</b>	<b>23</b>	<b>A</b>	<b>8.9</b>	<b>A</b>	<b>Y</b>
Inyo	18,260	0.070	C	N	29	B	7.4	A	Y
<b>Kern</b>	<b>882,176</b>	<b>0.083</b>	<b>F</b>	<b>Y</b>	<b>44</b>	<b>F</b>	<b>12.5</b>	<b>D</b>	<b>Y</b>
<b>Kings</b>	<b>150,965</b>	<b>ND</b>	<b>--</b>	<b>--</b>	<b>65</b>	<b>F</b>	<b>16.8</b>	<b>F</b>	<b>N</b>
Lake	64,891	0.058	B	N	10	A	3.7	A	N
<b>Los Angeles</b>	<b>10,170,292</b>	<b>0.078</b>	<b>F</b>	<b>Y</b>	<b>28</b>	<b>B</b>	<b>10.8</b>	<b>C</b>	<b>Y</b>
Marin	261,221	0.061	B	N	26	A	10.1	B	N
<b>Mariposa</b>	<b>17,531</b>	<b>0.074</b>	<b>D</b>	<b>Y</b>	<b>ND</b>	<b>--</b>	<b>ND</b>	<b>--</b>	<b>--</b>
Mendocino	87,649	ND	---	---	21	A	8.4	A	N
<b>Merced</b>	<b>268,455</b>	<b>0.082</b>	<b>F</b>	<b>N</b>	<b>42</b>	<b>F</b>	<b>12.2</b>	<b>D</b>	<b>N</b>
Monterey	433,898	0.058	B	Y	13	A	5.6	A	Y
Napa	142,456	0.061	B	N	27	A	11.4	C	N
<b>Nevada</b>	<b>98,877</b>	<b>0.076</b>	<b>D</b>	<b>Y</b>	<b>ND</b>	<b>---</b>	<b>ND</b>	<b>---</b>	<b>---</b>
Orange	3,169,776	0.070	C	Y	23	A	8.9	A	Y
<b>Placer</b>	<b>375,391</b>	<b>0.074</b>	<b>D</b>	<b>Y</b>	<b>17</b>	<b>A</b>	<b>6.6</b>	<b>A</b>	<b>Y</b>
<b>Plumas</b>	<b>18,409</b>	<b>ND</b>	<b>--</b>	<b>--</b>	<b>42</b>	<b>F</b>	<b>12.1</b>	<b>D</b>	<b>Y</b>
<b>Riverside</b>	<b>2,361,026</b>	<b>0.084</b>	<b>F</b>	<b>Y</b>	<b>27</b>	<b>A</b>	<b>10.1</b>	<b>B</b>	<b>Y</b>
Sacramento	1,501,335	0.072	D	Y	30	B	9.4	A	Y
San Benito	58,792	0.065	C	N	13	A	4.9	A	N
<b>San Bernardino</b>	<b>2,128,133</b>	<b>0.090</b>	<b>F</b>	<b>Y</b>	<b>30</b>	<b>B</b>	<b>9.7</b>	<b>B</b>	<b>Y</b>
San Diego	3,299,521	0.066	C	Y	19	A	9.0	A	Y
San Francisco	864,816	0.048	A	N	25	A	8.5	A	N
<b>San Joaquin</b>	<b>726,706</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	<b>44</b>	<b>F</b>	<b>12.7</b>	<b>D</b>	<b>Y</b>
San Luis Obispo	281,401	0.061	B	Y	25	A	10.8	C	Y
San Mateo	765,135	0.059	B	N	23	A	7.8	A	N
Santa Barbara	444,769	0.060	B	N	16	A	7.7	A	Y
Santa Clara	1,918,044	0.066	C	Y	26	A	9.3	A	Y
Santa Cruz	274,146	0.056	B	N	12	A	5.7	A	N
Shasta	179,533	0.065	C	Y	17	A	6.2	A	N
<b>Siskiyou</b>	<b>43,554</b>	<b>0.061</b>	<b>B</b>	<b>N</b>	<b>48</b>	<b>F</b>	<b>8.1</b>	<b>A</b>	<b>N</b>
Solano	436,092	0.063	B	Y	31	B	10.0	B	Y
Sonoma	502,146	0.056	B	Y	21	A	7.7	A	N
<b>Stanislaus</b>	<b>538,388</b>	<b>0.079</b>	<b>F</b>	<b>N</b>	<b>48</b>	<b>F</b>	<b>12.7</b>	<b>D</b>	<b>Y</b>
Sutter	96,068	0.068	C	Y	27	A	9.1	A	N
<b>Tehama</b>	<b>63,308</b>	<b>0.074</b>	<b>D</b>	<b>N</b>	<b>ND</b>	<b>--</b>	<b>ND</b>	<b>--</b>	<b>--</b>
<b>Tulare</b>	<b>459,863</b>	<b>0.084</b>	<b>F</b>	<b>Y</b>	<b>61</b>	<b>F</b>	<b>17.6</b>	<b>F</b>	<b>N</b>
Tuolumne	53,709	0.073	D	N	ND	--	ND	--	--
Ventura	850,536	0.070	C	Y	19	A	8.5	A	Y
Yolo	213,016	0.064	C	Y	19	A	7.0	A	N
<b>Subtotal</b>	<b>38,817,214</b>								
Not Monitored	327,604								
<b>Total</b>	<b>39,144,818</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table CA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.079	51	17.1
2001 – 2003	0.081	46	16.4
2002 – 2004	0.083	41	14.8
2003 – 2005	0.081	40	14.0
2004 – 2006	0.080	39	13.4
2005 – 2007	0.078	38	13.0
2006 – 2008	0.079	36	12.9
2007 – 2009	0.078	33	12.2
2008 - 2010	0.077	29	11.0
2009 – 2011	0.074	30	11.6
2010 – 2012	0.073	27	10.5
2011 – 2013	0.072	28	10.7
2012-2014	0.074	27	10.0
2013 - 2015	0.072	28	9.9

# CALIFORNIA

## Table CA-3 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	2011-2013	2012-2014	2013-2015
A	9,789,128	8,637,395	6,964,609	9,376,947	9,296,336	10,409,723	5,659,429	3,707,252	4,387,085	6,403,340	6,760,046	7,252,215	5,599,804	2,721,802
B	5,885,592	6,280,999	6,730,324	7,939,619	7,597,584	6,591,630	4,644,413	5,114,458	4,563,096	6,198,810	6,864,469	8,186,973	7,815,498	5,177,415
C	5,795,475	5,420,028	6,124,278	4,414,724	3,825,359	5,858,141	5,895,877	8,334,756	9,893,661	9,055,549	8,193,646	5,645,284	8,193,428	11,488,828
D	3,822,978	4,982,379	3,741,905	5,877,699	6,040,442	5,022,182	4,057,759	4,699,133	4,561,537	5,486,271	6,620,275	5,667,911	5,763,084	5,586,507
F	9,221,583	9,742,289	11,650,187	7,821,676	8,646,594	8,011,903	15,686,411	14,908,234	13,650,821	10,256,976	9,222,877	11,149,877	11,000,706	13,585,134
Subtotal	34,514,756	35,063,090	35,211,303	35,460,665	25,406,315	35,893,579	35,943,889	36,763,833	37,056,200	37,400,946	37,661,313	37,902,260	38,372,520	38,559,686
NM	357,087	190,069	363,273	367,278	614,887	356,732	660,448	197,396	197,756	290,966	380,117	430,261	429,980	585,132
Total	34,871,843	35,253,159	35,574,576	35,827,943	36,021,202	36,250,311	36,604,337	36,961,229	37,253,956	37,691,912	38,041,430	38,332,521	38,802,500	39,144,818

## 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	2011-2013	2012-2014	2013-2015
A	15,426,631	22,071,426	24,312,470	24,681,724	24,773,314	8,606,704	6,404,187	9,604,388	12,188,062	11,412,194	18,869,345	19,773,214	24,844,521	17,200,652
B	6,478,023	4,883,573	8,006,151	5,615,755	5,640,821	4,729,249	6,059,059	4,116,270	8,200,061	8,022,937	10,828,624	11,682,758	5,533,788	11,015,591
C	5,088,713	2,815,919	1,435,576	1,904,983	1,949,480	5,983,044	1,085,688	2,285,157	6,540,661	6,653,463	1,938,202	1,295,691	3,110,134	6,239,184
D	1,681,001	1,712,117	0	0	0	3,641,696	4,505,142	2,891,789	1,834,424	478,702	396,626	18,467	746,010	0
F	1,672,036	0	0	0	0	9,357,112	10,794,242	7,859,270	1,876,408	4,447,968	2,834,157	2,378,232	2,889,521	3,877,787
Subtotal	30,346,404	31,483,035	33,754,197	32,202,462	32,363,615	32,317,805	28,848,318	27,658,874	30,639,616	31,015,264	34,866,954	35,148,362	37,123,974	38,333,214
NM	4,525,439	3,770,124	1,820,379	3,625,481	3,657,587	3,932,506	7,756,019	9,302,355	6,614,340	6,676,648	3,174,476	3,184,159	1,678,526	811,604
Total	34,871,843	35,253,159	35,574,576	35,827,943	36,021,202	36,250,311	36,604,337	36,961,229	37,253,956	37,691,912	38,041,430	38,332,521	38,802,500	39,144,818

## 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	2011-2013	2012-2014	2013-2015
A	6,316,994	9,651,940	13,069,541	13,997,194	13,243,248	15,121,689	11,691,409	11,249,724	9,540,329	19,148,211	24,945,824	14,371,725	16,811,094	18,320,884
B	5,135,775	4,007,984	1,914,908	3,117,550	5,335,767	2,708,813	2,864,258	7,647,742	5,056,069	4,447,329	5,527,545	8,495,499	5,388,081	8,530,391
C	1,360,544	3,221,843	4,283,321	734,593	921,020	5,207,102	5,881,887	2,849,209	5,097,260	2,267,475	1,855,539	3,190,075	7,923,653	4,696,834
D	4,967,464	2,236,178	492,613	1,470,028	2,163,990	1,077,818	3,894,059	3,601,984	0	1,986,357	1,932,071	4,197,346	4,239,696	3,851,574
F	12,565,627	12,365,090	13,993,814	12,883,097	10,699,590	8,202,383	4,516,705	2,310,215	945,958	3,165,892	605,975	4,893,717	2,761,450	2,933,531
Subtotal	30,346,404	31,483,035	33,754,197	32,202,462	32,363,615	32,317,805	28,848,318	27,658,874	30,639,616	31,015,264	34,866,954	35,148,362	37,123,974	38,333,214
NM	4,525,439	3,770,124	1,820,379	3,625,481	3,657,587	3,932,506	7,756,019	9,302,355	6,614,340	6,676,648	3,174,476	3,184,159	1,678,526	811,604
Total	34,871,843	35,253,159	35,574,576	35,827,943	36,021,202	36,250,311	36,604,337	36,961,229	37,253,956	37,691,912	38,041,430	38,332,521	38,802,500	39,144,818

NM = Not Monitored

Figure CA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone California

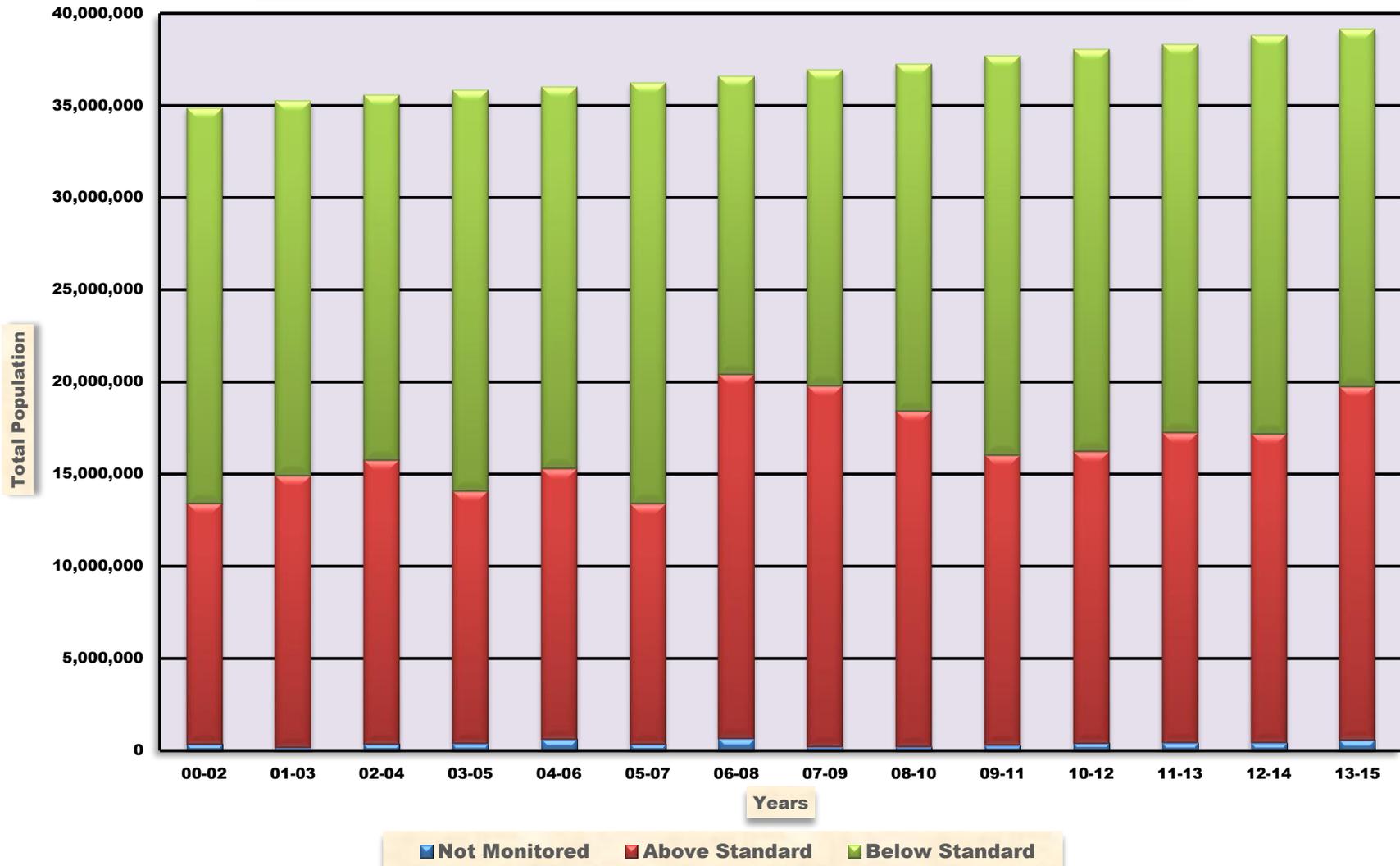


Figure CA-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 California

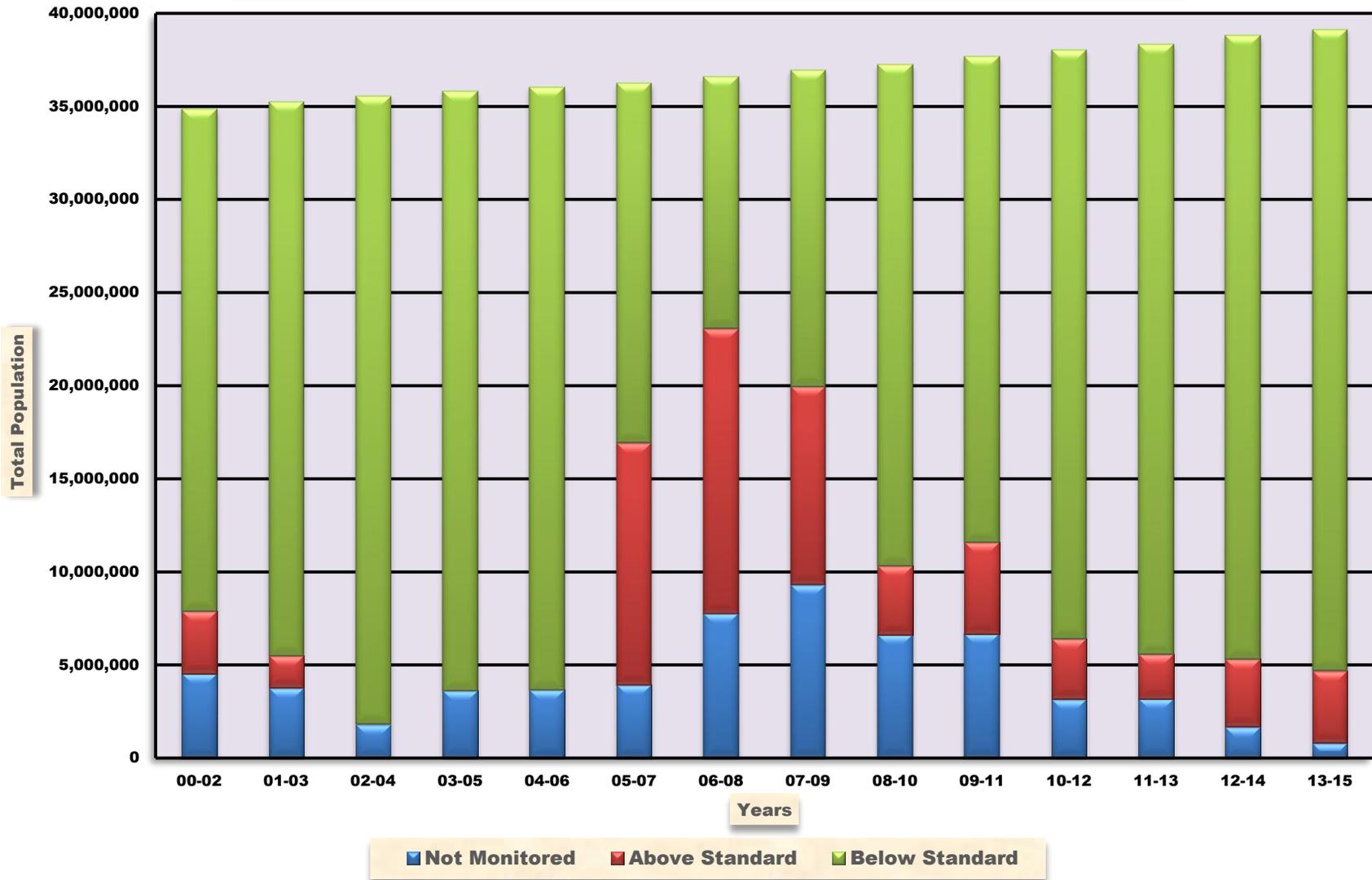
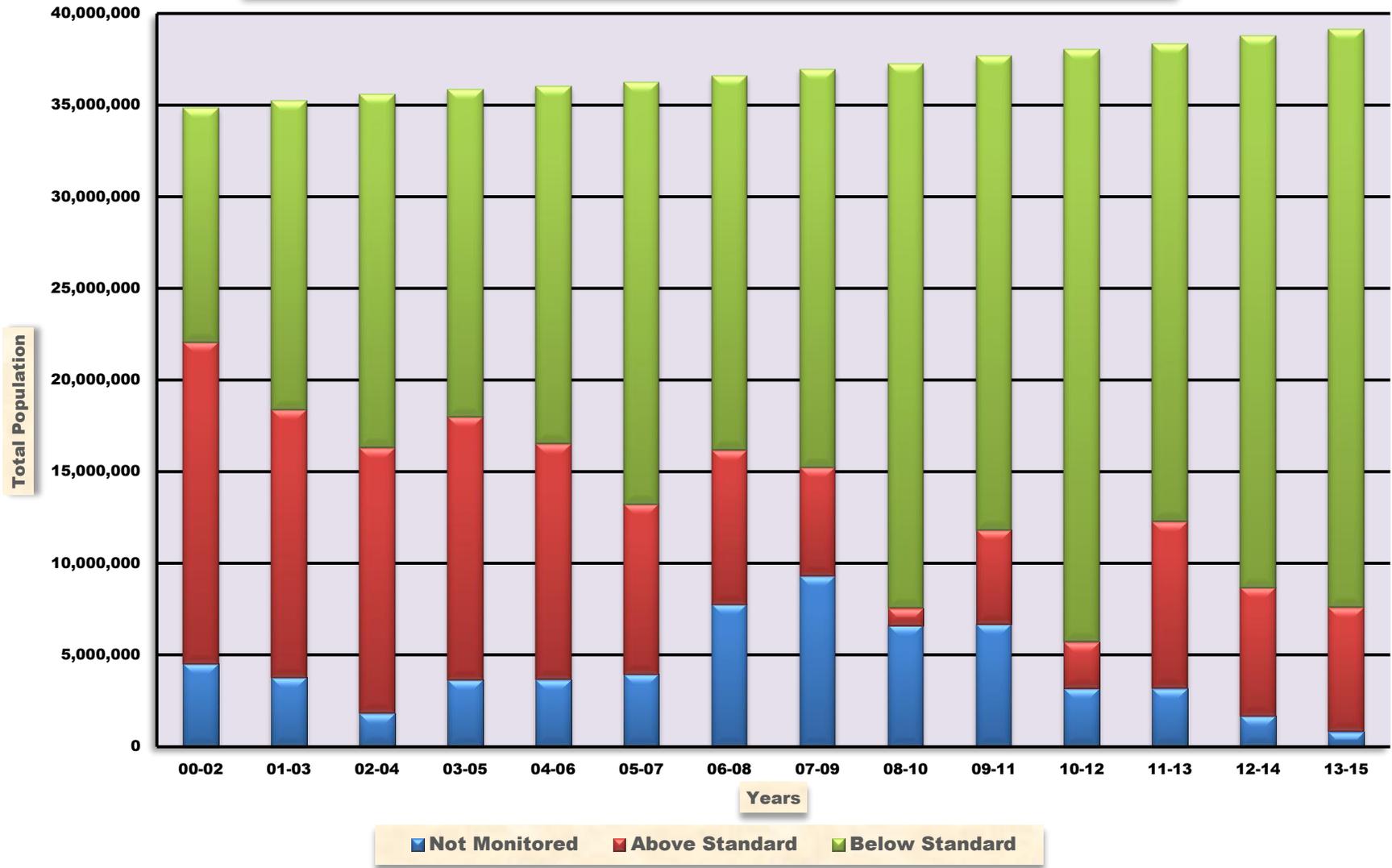


Figure CA-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 California



# COLORADO

## Ozone

In the 2000 – 2002 time period, approximately 3.3 million people (74.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had decreased to approximately 3.2 million people (57.8%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure CO-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.072 ppm. By 2013 – 2015 this had lowered to a value of 0.070 ppm, a reduction of 2.8 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.7 million people (60.9%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this had increased to approximately 4.1 million people (75.4%). The remainder of the population lived in areas where PM-2.5 is not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure CO-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 23  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 21  $\mu\text{g}/\text{m}^3$ , a reduction of 8.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.7 million people (60.9%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 4.1 million people (75.4%). The remainder of the population lived in areas where PM-2.5 is not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure CO-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.7  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 6.6  $\mu\text{g}/\text{m}^3$ , a reduction of 24.1 percent.

# COLORADO

**Table CO-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Adams	491,337	0.070	C	N	25	A	7.9	A	N
Arapahoe	631,096	0.069	C	N	21	A	6.3	A	N
<b>Boulder</b>	<b>319,372</b>	<b>0.074</b>	<b>D</b>	<b>N</b>	21	A	657	A	Y
Denver	682,545	0.067	C	Y	23	A	7.4	A	Y
<b>Douglas</b>	<b>322,387</b>	<b>0.079</b>	<b>F</b>	<b>N</b>	17	A	5.5	A	N
El Paso	674,471	0.066	C	Y	17	A	5.7	A	N
Garfield	58,095	0.063	C	N	ND	--	ND	--	--
Gunnison	16,067	0.065	C	N	ND	--	ND	--	--
Jackson	1,356	0.061	B	N	ND	--	ND	--	--
<b>Jefferson</b>	<b>565,524</b>	<b>0.074</b>	<b>D</b>	<b>Y</b>	ND	--	ND	--	--
La Plata	54,688	0.067	C	Y	ND	--	ND	--	--
<b>Larimer</b>	<b>333,577</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	21	A	6.5	A	N
Mesa	148,513	0.064	C	N	25	A	6.9	A	N
Montezuma	26,168	0.064	C	Y	ND	--	ND	--	--
Pueblo	165,591	ND	--	--	17	A	5.8	A	N
Rio Blanco	6,571	0.068	C	Y	16	A	8.3	A	N
<b>Weld</b>	<b>285,174</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	26	A	7.6	A	Y
<b>Subtotal</b>	<b>4,782,532</b>								
Not Monitored	674,042								
<b>Total</b>	<b>5,456,574</b>								

**DV = Design Value**

**ND = No Data**

**MM = Multiple Monitors**

**Table CO-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.072	23	8.7
2001 – 2003	0.076	23	8.9
2002 – 2004	0.074	21	8.5
2003 – 2005	0.075	21	8.4
2004 – 2006	0.073	20	8.2
2005 – 2007	0.076	22	8.3
2006 – 2008	0.075	22	8.2
2007 – 2009	0.072	21	7.9
2008 - 2010	0.070	18	7.1
2009 – 2011	0.071	17	6.7
2010 – 2012	0.072	19	6.9
2011 – 2013	0.074	20	6.9
2012 -2014	0.071	21	7.0
2013 - 2015	0.070	21	6.6

# COLORADO

## Table CO-3 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	2011-2013	2012-2014	2013-2015
A	548,585	447,840	431,537	177,494	178,989	447,748	16,764	17,035	0	0	0	0	0	0
B	2,177,923	1,496,831	1,807,812	2,307,748	2,354,407	2,391,485	16,764	17,035	589,954	963,687	393,658	208,259	635,085	14,440
C	605,522	1,278,269	915,176	921,861	932,807	947,550	1,786,364	1,823,662	2,097,988	2,342,619	2,164,447	2,859,871	3,211,689	3,136,942
D	0	131,235	0	0	0	0	1,352,378	1,370,088	419,101	528,979	1,023,911	1,356,843	674,920	860,405
F	0	0	0	0	0	0	132,250	132,990	0	0	0	0	0	605,149
Subtotal	3,332,030	3,354,175	3,154,525	3,407,103	3,466,203	3,786,783	3,304,520	3,360,810	3,107,043	3,835,285	3,582,016	4,424,973	4,521,694	4,616,936
NM	1,158,376	1,174,557	1,420,488	1,224,785	1,254,220	1,017,085	1,585,210	1,611,385	1,922,153	1,281,511	1,605,566	843,394	834,172	839,638
Total	4,490,406	4,528,732	4,575,013	4,631,888	4,720,423	4,803,868	4,889,730	4,972,195	5,029,196	5,116,796	5,187,582	5,268,367	5,355,866	5,456,574

## 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	2011-2013	2012-2014	2013-2015
A	2,707,791	2,823,107	3,031,521	3,131,844	3,127,218	2,996,464	2,480,593	2,452,448	3,391,600	3,635,017	3,750,768	3,829,750	3,999,292	4,113,322
B	0	0	0	0	0	415,746	424,913	583,551	146,723	147,083	147,848	147,554	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,707,791	2,823,107	3,031,521	3,131,844	3,127,218	3,412,210	2,905,506	3,035,999	3,538,323	3,782,100	3,898,616	3,977,304	3,999,292	4,113,322
NM	1,782,615	1,705,626	1,543,492	1,500,044	1,593,206	1,391,658	1,984,225	1,936,196	1,490,873	1,334,696	1,288,966	1,291,063	1,356,574	1,343,252
Total	4,490,406	4,528,732	4,575,013	4,631,888	4,720,423	4,803,868	4,889,730	4,972,195	5,029,196	5,116,796	5,187,582	5,268,367	5,355,866	5,456,574

## 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	2011-2013	2012-2014	2013-2015
A	2,707,791	2,823,107	3,031,521	3,131,844	3,127,218	3,412,210	2,905,506	3,035,999	3,538,323	3,782,100	3,898,616	3,970,497	3,999,292	4,113,322
B	0	0	0	0	0	0	0	0	0	0	0	6,807	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,707,791	2,823,107	3,031,521	3,131,844	3,127,218	3,412,210	2,905,505	3,035,999	3,538,323	3,782,100	3,898,616	3,977,304	3,999,292	4,113,322
NM	1,782,615	1,705,626	1,543,492	1,500,044	1,593,205	1,391,658	1,984,225	1,936,196	1,490,873	1,334,696	1,288,966	1,291,063	1,356,574	1,343,252
Total	4,490,406	4,528,732	4,575,013	4,631,888	4,720,423	4,803,868	4,889,730	4,972,195	5,029,196	5,116,796	5,187,582	5,268,367	5,355,866	5,456,574

NM = Not Monitored

Figure CO-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Colorado

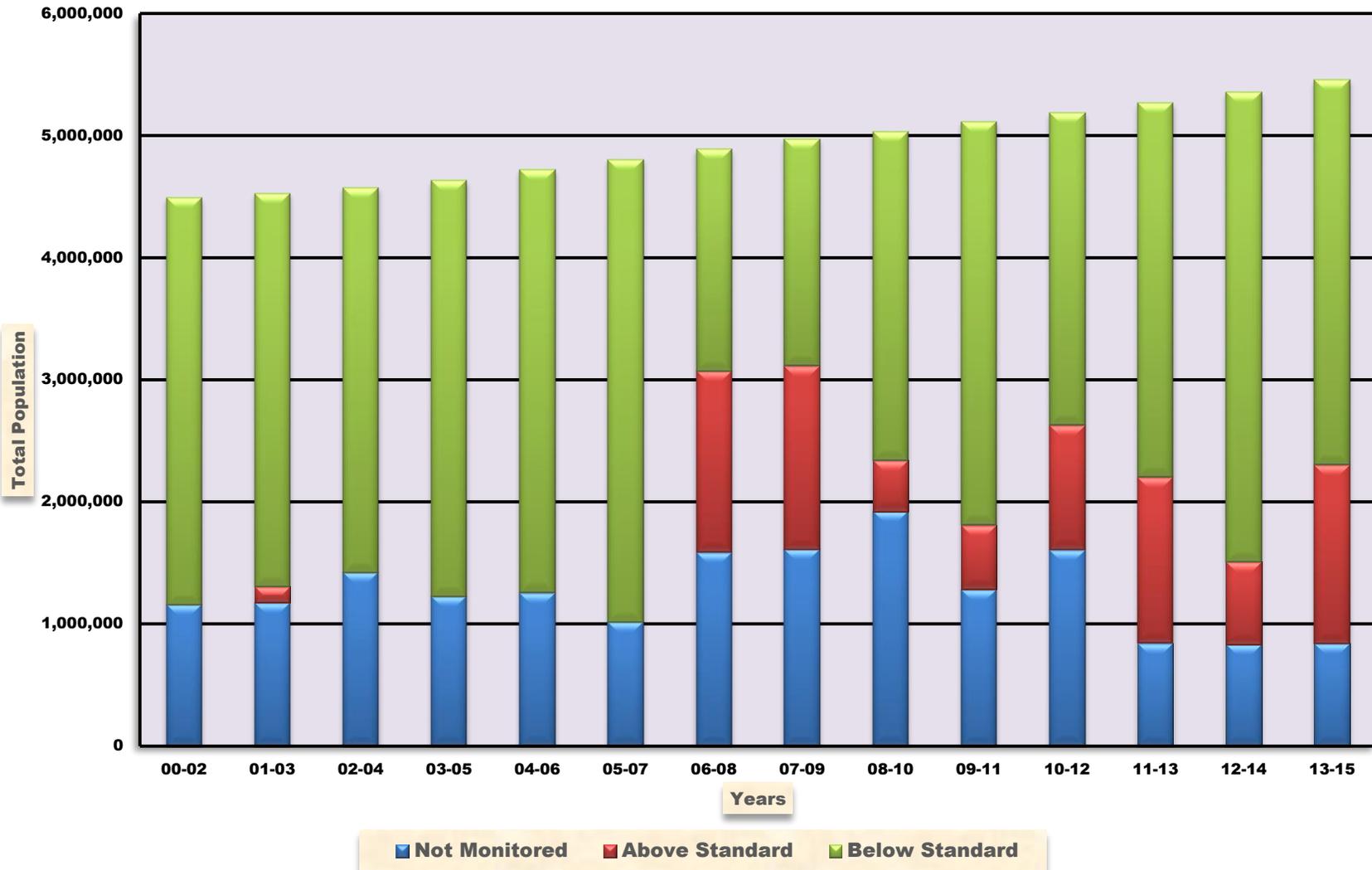


Figure CO-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Colorado

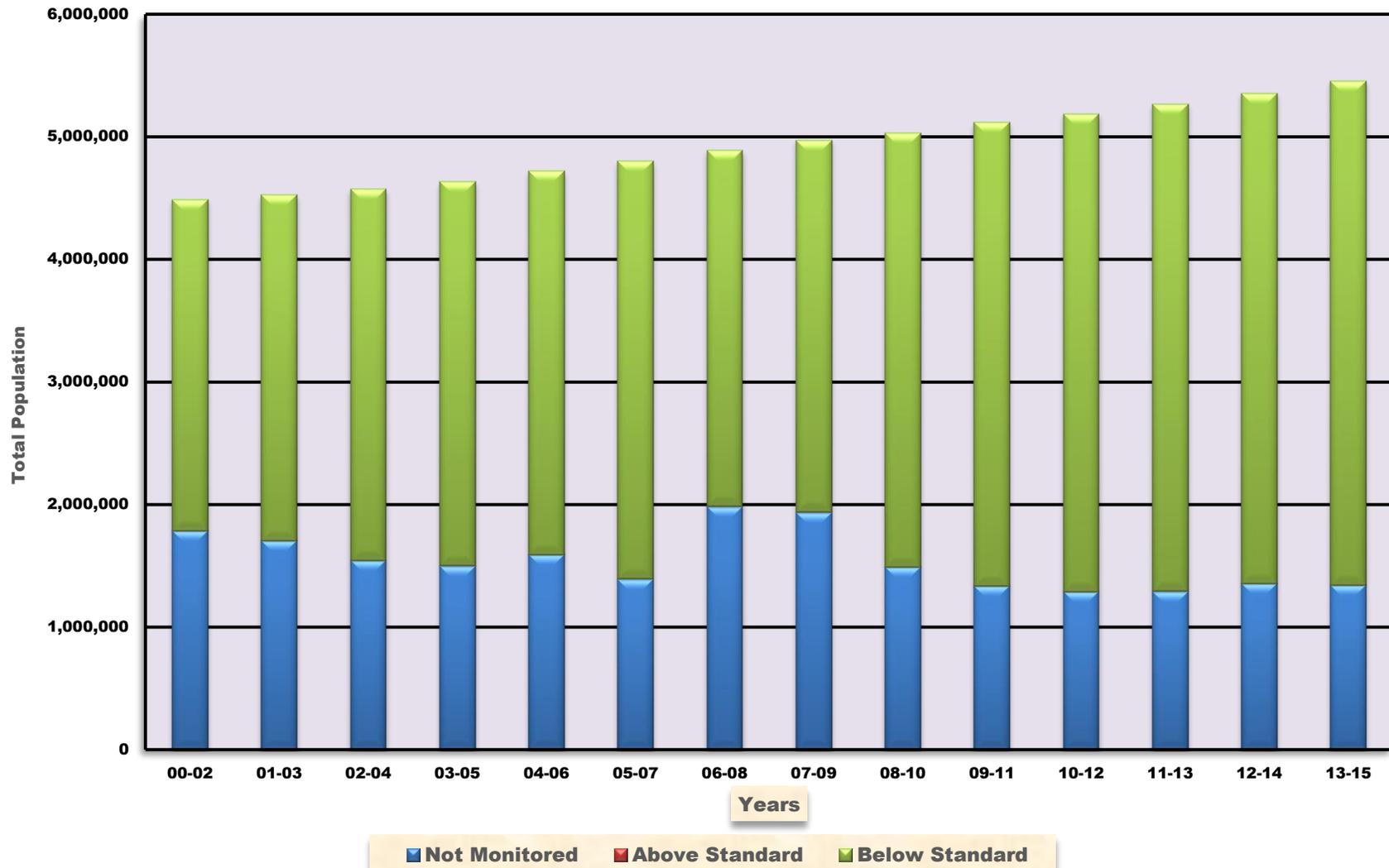
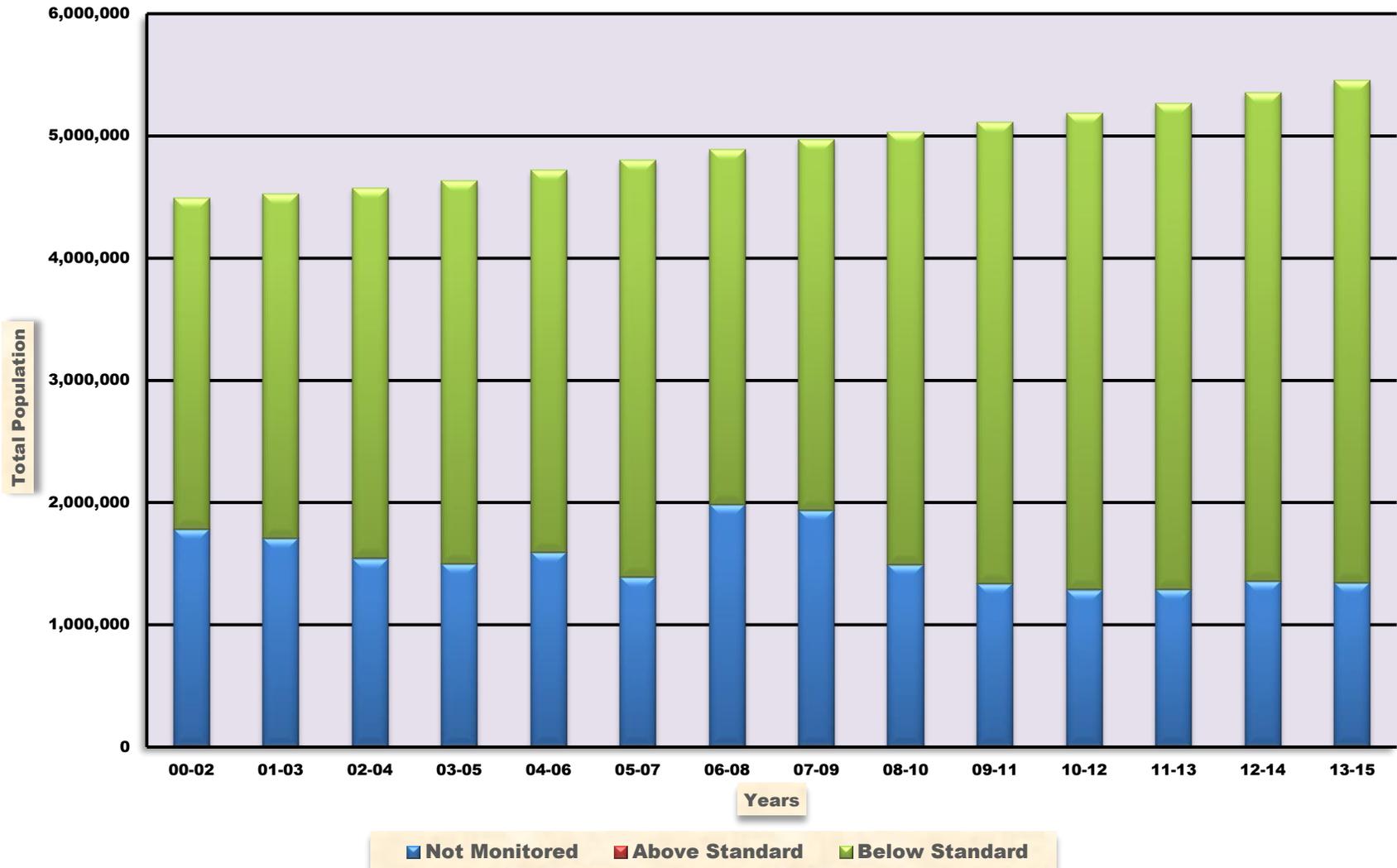


Figure CO-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Colorado



# CONNECTICUT

## Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 300,000 people (8.4%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure CT-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.094 ppm. By 2013 – 2015 this had lowered to a value of 0.077 ppm, a reduction of 18.1 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.9 million people (82.6%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 2.9 million people (79.6%). In 2013 - 2015 the remainder of the population lived in areas where PM-2.5 is not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure CT-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 34 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 22 µg/m<sup>3</sup>, a reduction of 35.3 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.7 million people (76.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 2.9 million people (79.6%). The remainder of the population lived in areas where PM-2.5 is not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure CT-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 12.8 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 7.8 µg/m<sup>3</sup>, a reduction of 39.1 percent.

**Table CT-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Fairfield	948,053	0.081	F	Y	24	A	8.3	A	Y
Hartford	895,841	0.076	D	N	20	A	7.3	A	Y
Litchfield	183,603	0.070	C	N	13	A	5.2	A	N
Middlesex	164,063	0.080	F	N	ND	--	ND	--	--
New Haven	859,470	0.077	D	Y	24	A	8.3	A	Y
New London	271,863	0.075	D	N	ND	--	ND	--	--
Tolland	151,420	0.076	D	N	ND	--	ND	--	--
Windham	116,573	0.068	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>3,590,886</b>								
Not Monitored	0								
<b>Total</b>	<b>3,590,886</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table CT-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.094	34	12.8
2001 – 2003	0.096	36	12.9
2002 – 2004	0.090	34	12.4
2003 – 2005	0.086	35	12.3
2004 – 2006	0.085	33	11.8
2005 – 2007	0.089	32	11.4
2006 – 2008	0.086	30	10.8
2007 – 2009	0.080	28	10.1
2008 - 2010	0.075	26	9.3
2009 – 2011	0.075	25	8.9
2010 – 2012	0.078	23	8.6
2011 – 2013	0.079	23	8.5
2012 -2014	0.078	22	7.9
2013 - 2015	0.077	22	7.8

**CONNECTICUT**  
**Table CT-3**  
**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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	874,449	1,147,745	1,577,216	426,799	0	430,013	1,083,941	1,666,557	1,084,789	1,085,196	184,993	300,176
D	1,355,374	1,139,919	1,438,456	2,054,633	1,633,784	2,758,853	428,311	2,786,077	2,371,728	1,795,001	1,454,124	1,492,527	2,821,967	1,985,872
F	1,806,323	2,044,340	1,068,873	0	0	224,374	2,726,746	227,605	0	0	933,835	900,853	472,719	1,304,838
Subtotal	3,161,697	3,184,259	3,381,778	3,202,378	3,211,000	3,410,026	3,155,057	3,443,695	3,455,669	3,462,558	3,472,748	3,478,476	3,479,679	3,590,886
NM	297,052	300,027	114,316	304,578	306,460	117,244	390,522	118,112	118,428	118,151	117,599	117,604	116,998	0
Total	3,458,749	3,484,336	3,496,094	3,506,956	3,517,460	3,527,270	3,545,579	3,561,807	3,574,097	3,580,709	3,590,347	3,596,080	3,596,677	3,590,886

**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	2011-2013	2012-2014	2013-2015
A	2,860,148	2,878,200	2,885,021	2,892,560	0	0	272,634	1,527,317	2,333,110	2,856,970	3,155,607	3,161,537	2,889,693	2,856,967
B	0	0	0	0	1,152,112	1,155,217	1,737,085	1,598,441	804,192	287,038	0	0	0	0
C	0	0	0	0	1,182,315	1,751,096	911,258	0	0	0	0	0	0	0
D	0	0	0	0	564,146	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,860,148	2,878,200	2,885,021	2,892,560	2,898,573	2,906,313	2,920,977	3,125,758	3,137,302	3,144,008	3,155,607	3,161,537	2,889,693	2,856,967
NM	598,601	606,136	611,073	614,396	618,887	620,957	624,602	436,049	436,795	436,701	434,740	434,543	706,984	733,919
Total	3,458,749	3,484,336	3,496,094	3,506,956	3,517,460	3,527,270	3,545,579	3,561,807	3,574,097	3,580,709	3,590,347	3,596,080	3,596,677	3,590,886

**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	2011-2013	2012-2014	2013-2015
A	907,198	913,736	1,322,538	1,372,158	1,546,217	1,550,311	2,297,739	3,125,758	3,137,302	3,144,008	3,155,607	3,161,537	2,889,693	2,856,967
B	1,326,626	1,543,494	717,978	1,520,402	1,352,356	1,356,002	623,238	0	0	0	0	0	0	0
C	417,549	210,485	563,003	0	0	0	0	0	0	0	0	0	0	0
D	208,775	210,485	281,502	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,860,148	2,878,200	2,885,021	2,892,560	2,898,573	2,906,313	2,920,977	3,125,758	3,137,306	3,144,008	3,155,607	3,161,537	2,889,693	2,856,967
NM	598,601	606,136	611,073	614,396	618,887	620,957	624,602	436,049	436,795	436,701	434,740	434,543	706,984	733,919
Total	3,458,749	3,484,336	3,496,094	3,506,956	3,517,460	3,527,270	3,545,579	3,561,807	3,574,097	3,580,709	3,590,347	3,596,080	3,596,677	3,590,886

NM = Not Monitored

Figure CT-1

People Breathing Various Air Quality Levels - 8 Hour Ozone  
Connecticut

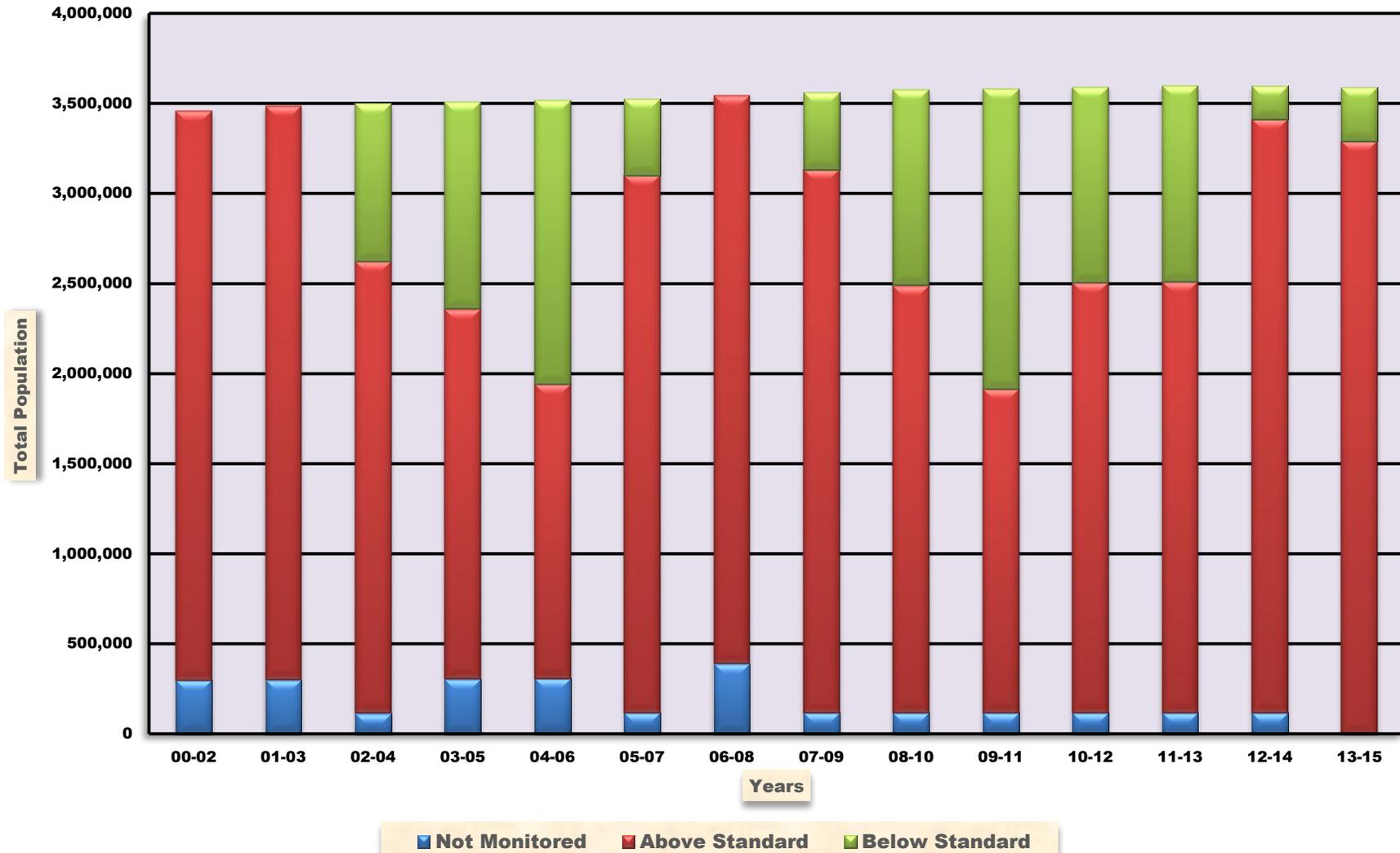


Figure CT-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Connecticut

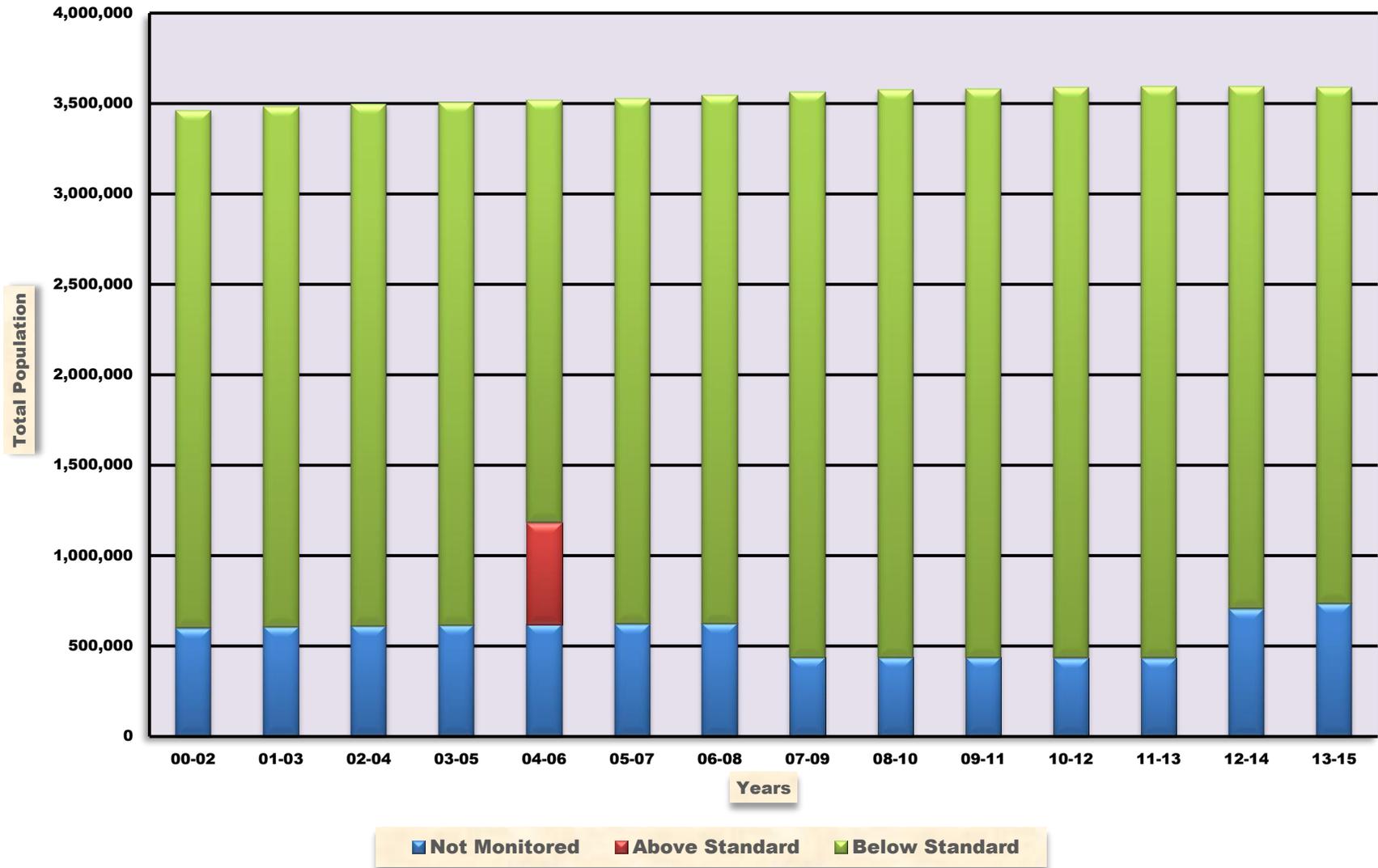
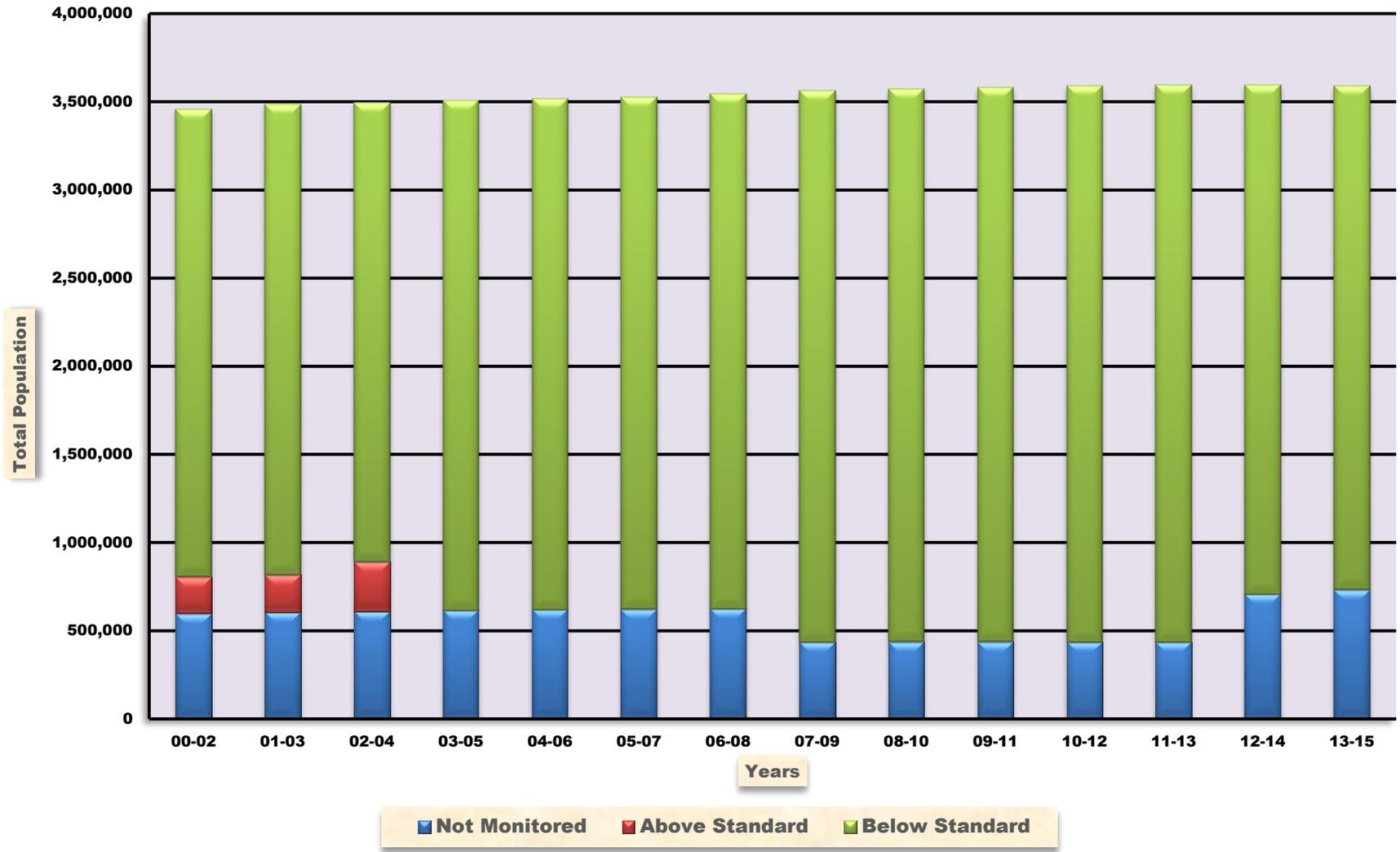


Figure CT-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Connecticut



# DELAWARE

## Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 approximately 0.95 million people (100.0%) lived in counties that met the ozone standard. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure DE-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.093 ppm. By 2013 – 2015 this had lowered to a value of 0.066 ppm, a reduction of 29.0 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.81 million people (100.0%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 all people in Delaware lived in counties that met the 24-hour PM-2.5 standard. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure DE-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 38 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 23 µg/m<sup>3</sup>, a reduction of 39.5 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.55 million people (68.4%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 all people in Delaware lived in counties that met the annual PM-2.5 standard. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure DE-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 14.5 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 8.8 µg/m<sup>3</sup>, a reduction of 39.3 percent.

**Table DE-1  
2013 – 2015**

		OZONE			PARTICLE POLLUTION (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Kent	173,533	0.065	C	N	22	A	8.1	A	Y
New Castle	556,779	0.067	C	Y	24	A	9.1	A	Y
Sussex	215,622	0.066	C	Y	21	A	8.4	A	N
<b>Subtotal</b>	<b>945,934</b>								
Not Monitored	0								
<b>Total</b>	<b>945,934</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table DE-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.093	38	14.5
2001 – 2003	0.092	37	14.2
2002 – 2004	0.085	35	13.7
2003 – 2005	0.081	34	13.8
2004 – 2006	0.080	33	13.4
2005 – 2007	0.082	33	13.3
2006 – 2008	0.080	31	12.7
2007 – 2009	0.075	28	11.9
2008 - 2010	0.075	26	10.8
2009 – 2011	0.075	24	9.9
2010 – 2012	0.079	24	9.4
2011 – 2013	0.074	23	8.9
2012 -2014	0.071	22	8.9
2013 - 2015	0.066	23	8.8

# DELAWARE

## Table DE-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	657,822	845,150	859,268	871,749	0	696,979	700,789	535,985	0	685,004	935,614	945,934
D	383,970	818,003	172,981	0	0	0	705,888	194,751	197,145	371,150	917,092	240,745	0	0
F	422,199	0	0	0	0	0	177,986	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	925,749	935,614	945,934
NM	0	0	0	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	925,749	935,614	945,934

## 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	2011-2013	2012-2014	2013-2015
A	806,169	818,003	830,803	0	0	0	0	489,057	763,314	907,135	917,092	925,749	935,614	945,934
B	0	0	0	72,292	74,852	76,984	616,895	402,673	134,620	0	0	0	0	0
C	0	0	0	642,022	652,623	662,126	266,979	0	0	0	0	0	0	0
D	0	0	0	130,836	131,793	132,639	0	0	0	0	0	0	0	0
F	0	0	0	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	925,749	935,614	945,934
NM	0	0	0	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	925,749	935,614	945,934

## 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	2011-2013	2012-2014	203-2015
A	0	0	0	0	0	0	291,415	489,057	897,934	907,135	917,092	650,907	797,420	945,934
B	131,824	303,234	441,595	452,643	463,888	606,472	458,970	405,673	0	0	0	274,842	138,194	0
C	419,266	386,077	389,208	392,507	395,380	265,277	133,489	0	0	0	0	0	0	0
D	255,079	128,692	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	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	925,749	935,614	945,934
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	917,135	925,749	935,614	945,934

NM = Not Monitored

Figure DE-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Delaware

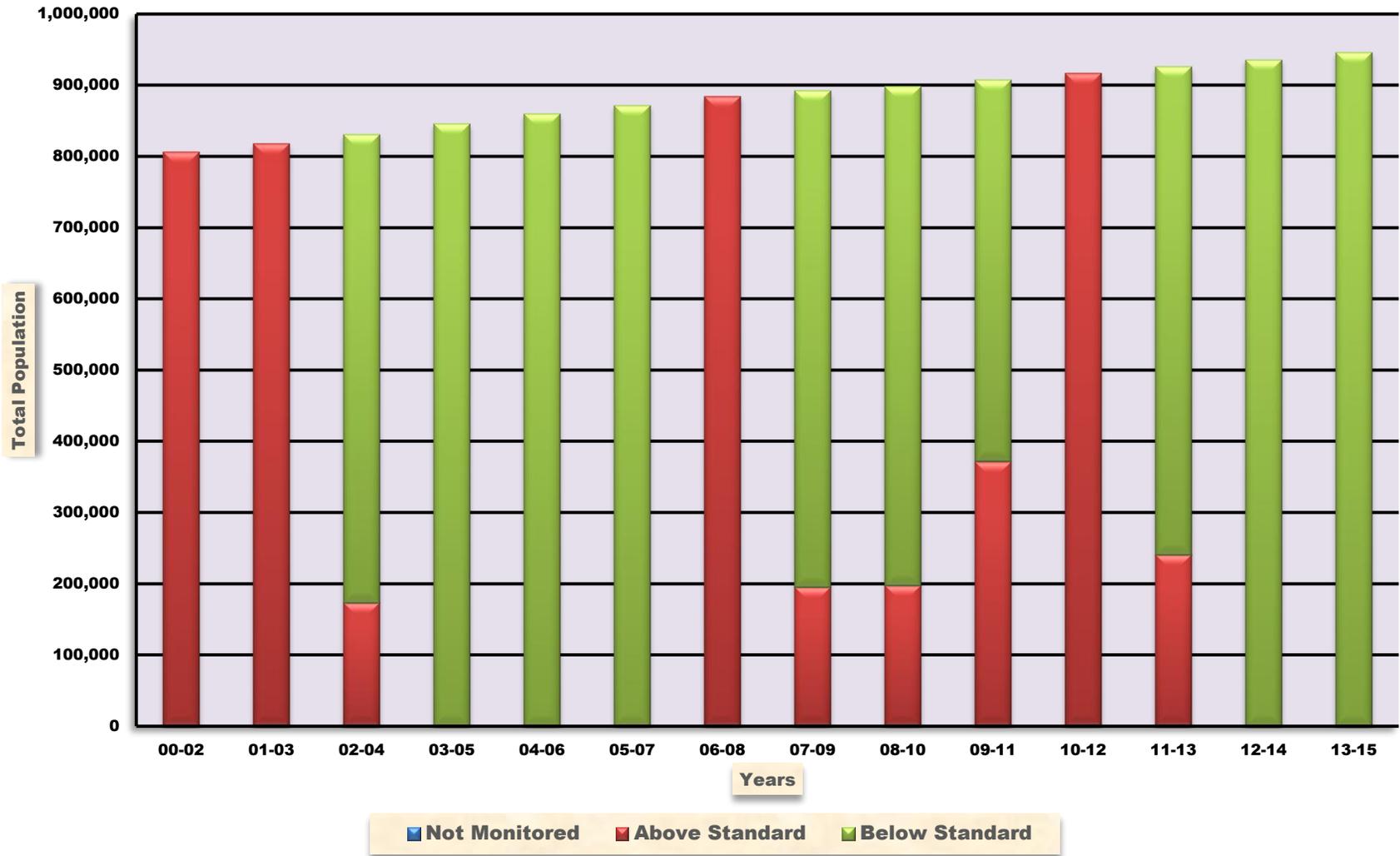
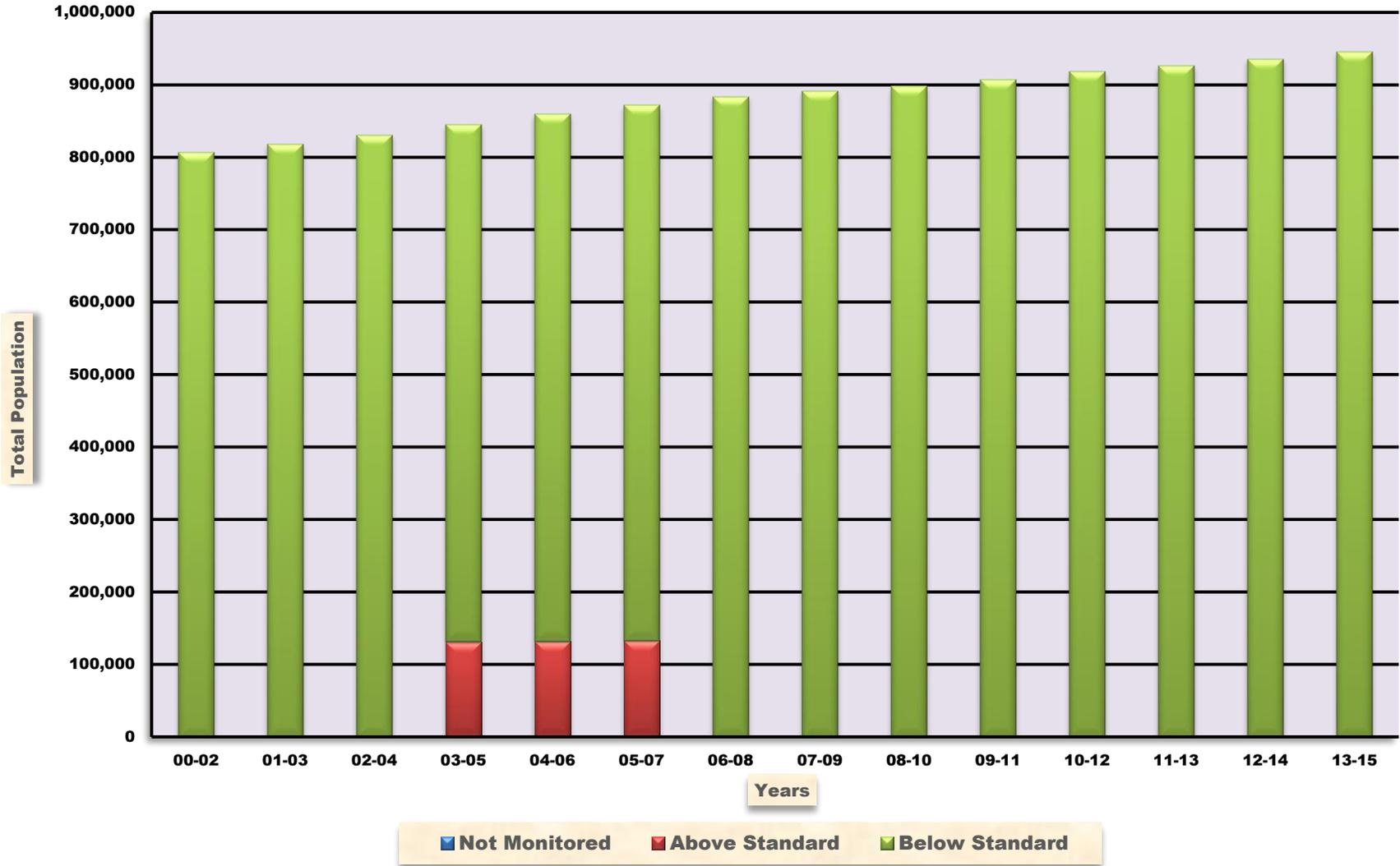


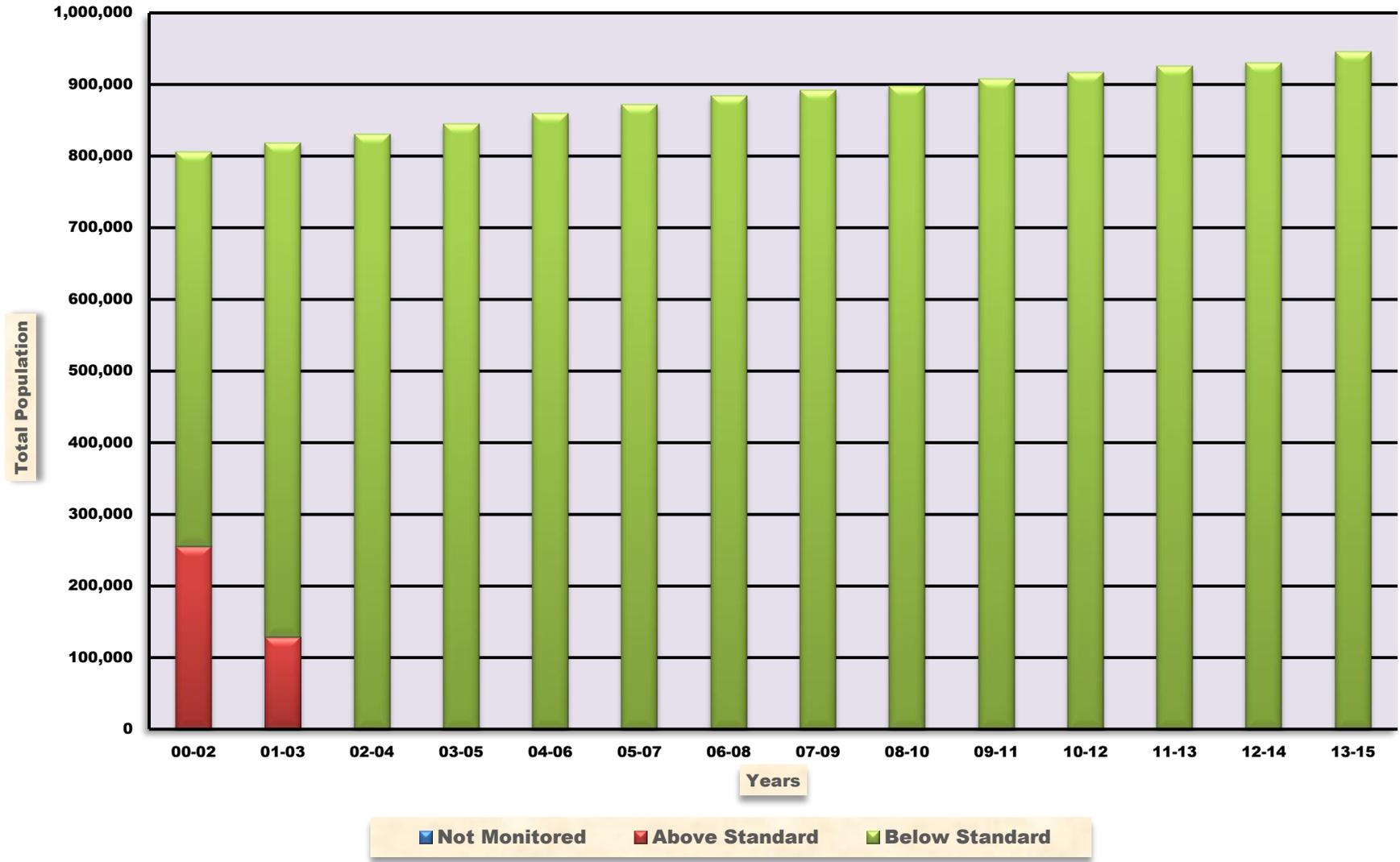
Figure DE-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Delaware



**Figure DE-3**

**People Breathing Various Air Quality Levels - Annual PM-2.5  
Delaware**



# DISTRICT OF COLUMBIA

## Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 all people were breathing air that met the ozone standard. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure DC-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.093 ppm. By 2013 – 2015 this had lowered to a value of 0.068  $\mu\text{g}/\text{m}^3$ , a reduction of 26.9 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, all people lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 -2015 all people were breathing air that met the standard. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure DC-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 41  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 21  $\mu\text{g}/\text{m}^3$ , a reduction of 48.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, no people lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 all people were breathing air that met the standard. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure DC-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.7  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 9.0  $\mu\text{g}/\text{m}^3$ , a reduction of 42.7 percent.

**Table DC-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
DC	672,228	0.068	C	N	21	A	9.0	B	Y
<b>Subtotal</b>	672,228								
Not Monitored	0								
<b>Total</b>	<b>672,228</b>								

DV = Design Value

MM = Multiple Monitors

**Table DC-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.093	41	15.7
2001 – 2003	0.091	40	15.2
2002 – 2004	0.086	38	14.7
2003 – 2005	0.079	36	14.6
2004 – 2006	0.081	35	14.3
2005 – 2007	0.084	33	13.9
2006 – 2008	0.084	31	12.9
2007 – 2009	0.078	28	11.9
2008 - 2010	0.077	26	11.0
2009 – 2011	0.077	25	10.5
2010 – 2012	0.082	25	10.3
2011 – 2013	0.075	24	9.6
2012 -2014	0.073	22	9.2
2013 - 2015	0.068	21	9.0

# DISTRICT OF COLUMBIA

## Table DC-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	378,503	567,136	570,681	382,936	0	0	200,574	0	0	323,225	658,893	672,228
D	382,105	379,001	189,251	0	0	191,468	193,412	592,228	401,149	617,996	316,161	323,224	0	0
F	191,053	189,501	0	0	0	0	386,824	0	0	0	316,162	0	0	0
Subtotal	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228
NM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228

### 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	2011-2013	2012-2014	2013-2015
A	573,158	568,502	567,754	567,136	0	0	0	0	601,723	617,996	632,323	646,449	658,893	672,228
B	0	0	0	0	0	0	386,824	592,228	0	0	0	0	0	0
C	0	0	0	0	380,454	574,404	193,412	0	0	0	0	0	0	0
D	0	0	0	0	190,227	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228
NM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228

### 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	197,409	601,723	617,996	632,323	215,483	658,893	672,228
B	0	0	0	0	0	0	580,236	394,819	0	0	0	430,966	0	0
C	0	189,501	567,754	567,136	570,681	574,404	0	0	0	0	0	0	0	0
D	573,158	379,001	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228
NM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	573,158	568,502	567,754	567,136	570,681	574,404	580,236	592,228	601,723	617,996	632,323	646,449	658,893	672,228

NM = Not Monitored

Figure DC-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone District of Columbia

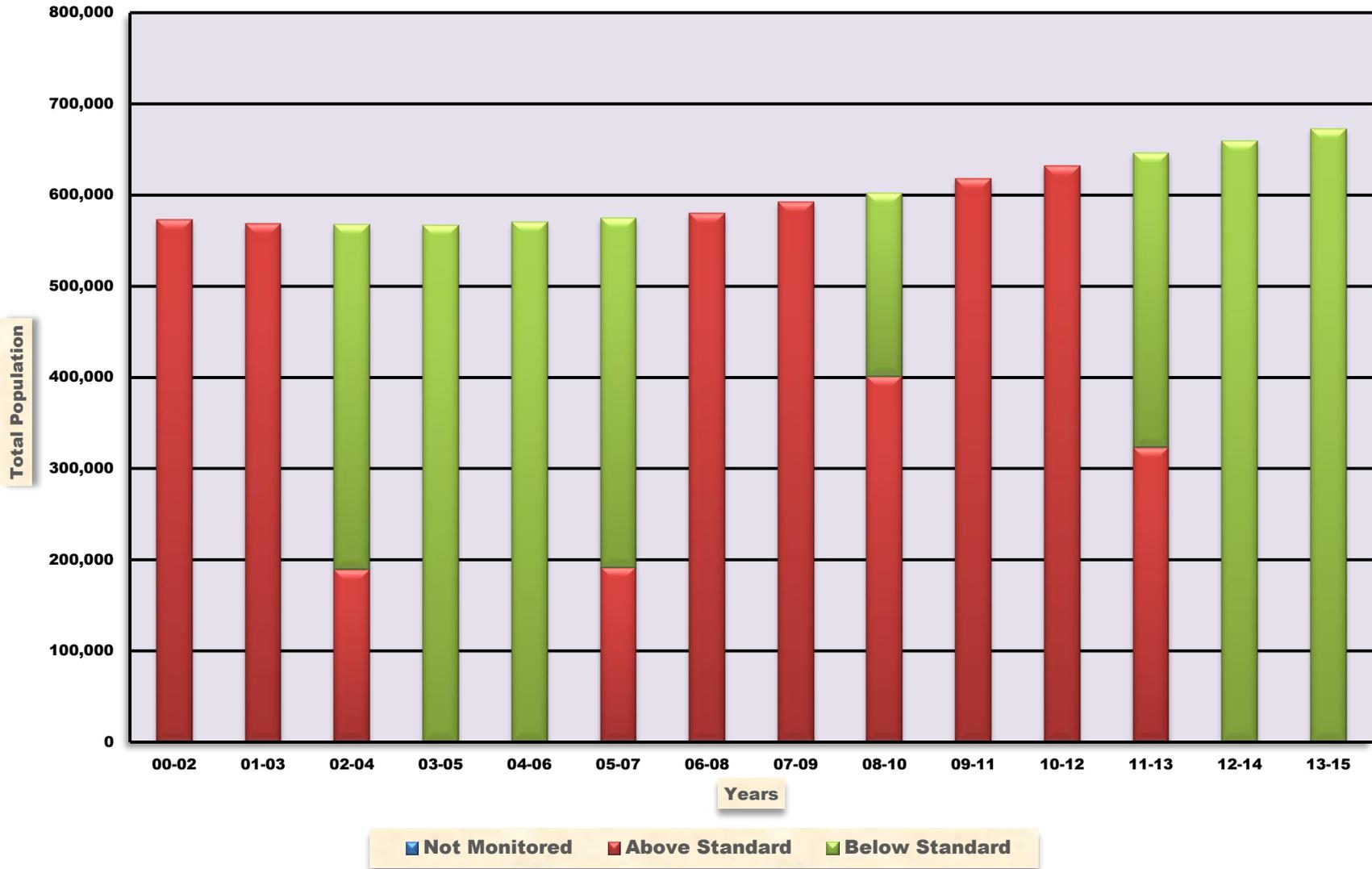


Figure DC-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 District of Columbia

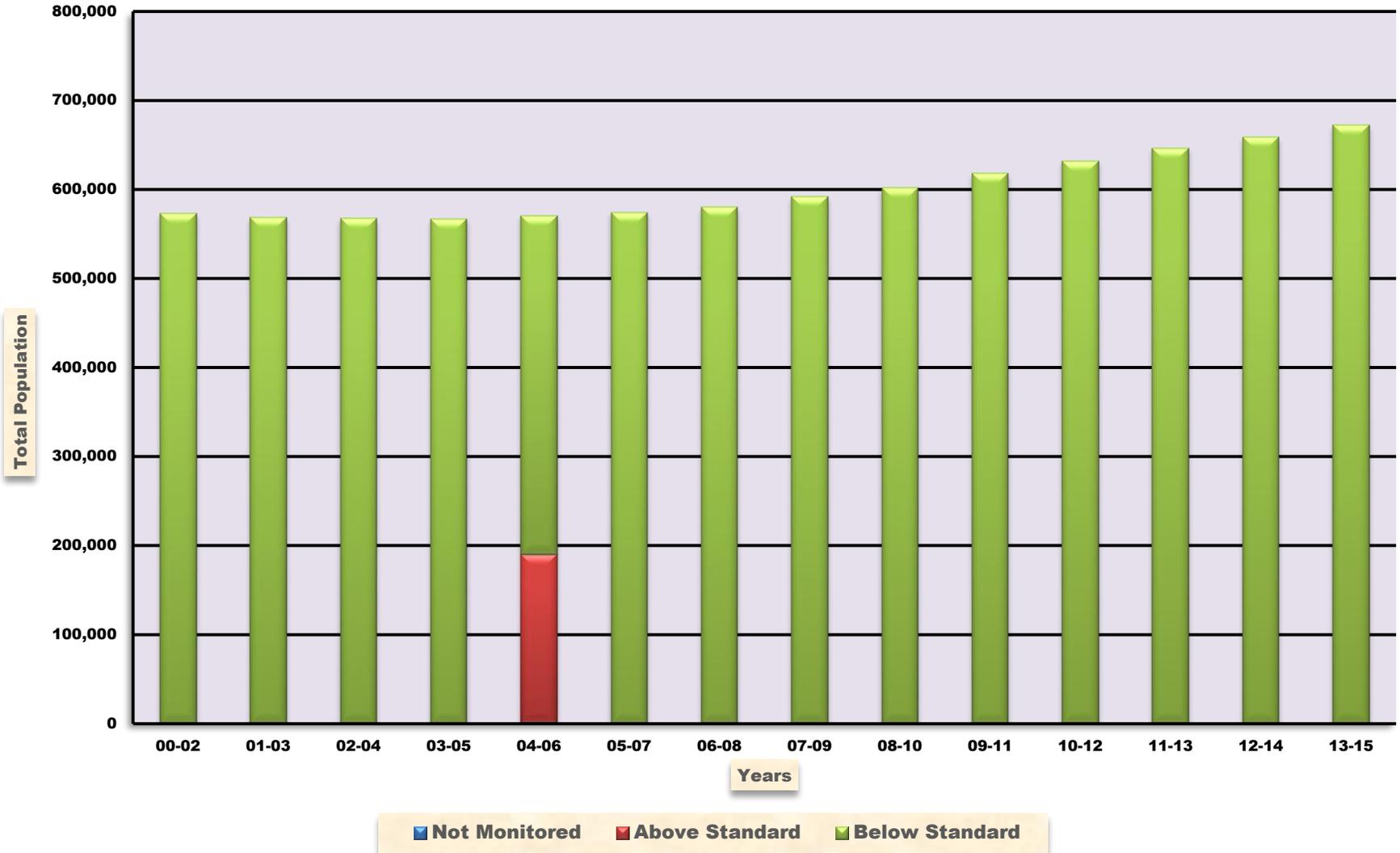
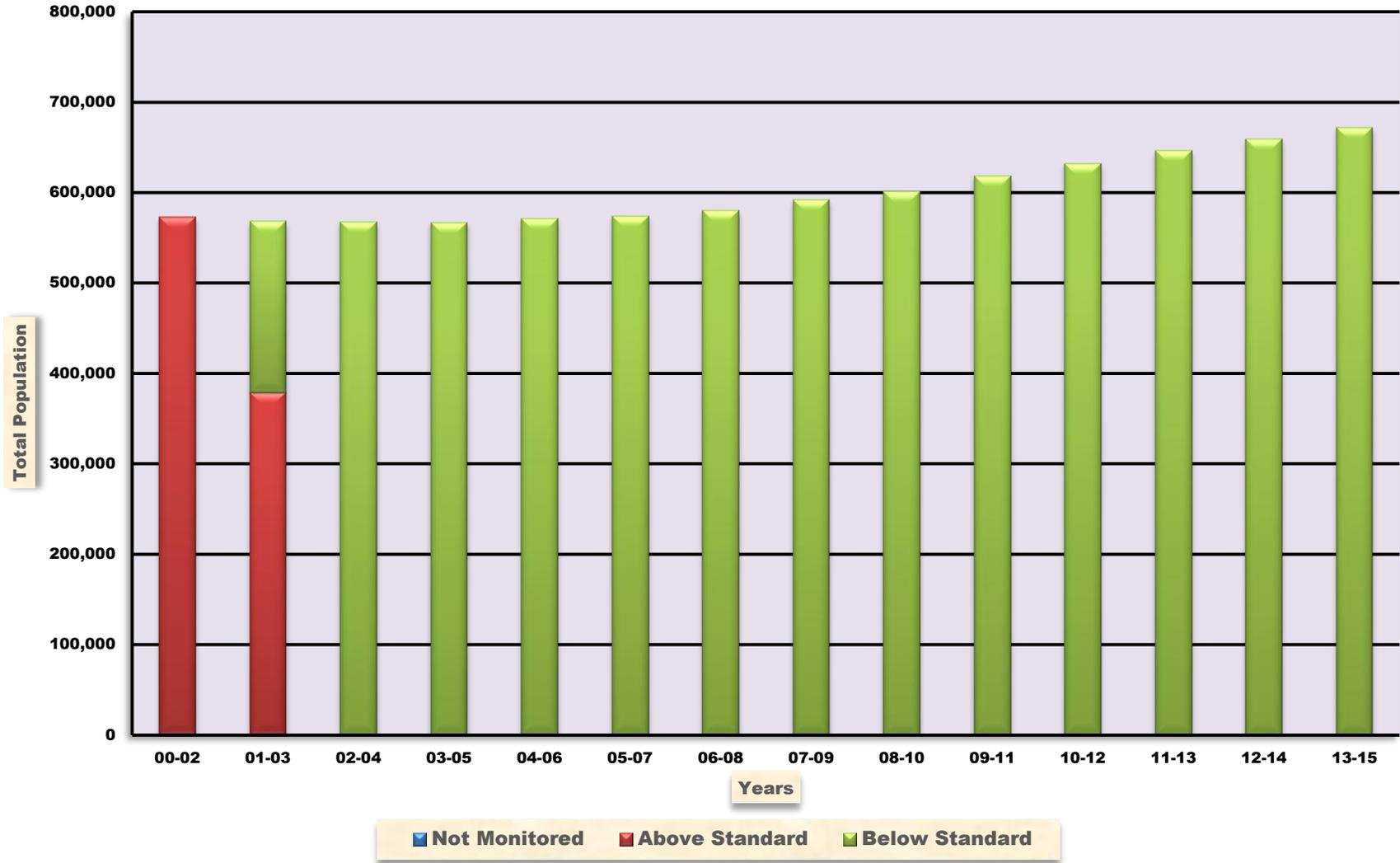


Figure DC-3

**People Breathing Various Air Quality Levels - Annual PM-2.5  
District of Columbia**



# FLORIDA

## Ozone

In the 2000 – 2002 time period, approximately 13.7 million people (82.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to 17.0 million people (83.8%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure FL-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.072 ppm. By 2013 – 2015 this had lowered to a value of 0.062 ppm, a reduction of 13.9 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 12.4 million people (74.3%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 14.5 million people (71.7%). The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure FL-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 23  $\mu\text{g}/\text{m}^3$ . By 2013 -2015 this had lowered to a value of 15  $\mu\text{g}/\text{m}^3$ , a reduction of 34.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 12.4 million people (74.3%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 14.5 million people (71.7%). The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure FL-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 9.9  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 6.4  $\mu\text{g}/\text{m}^3$ , a reduction of 35.4 percent.

# FLORIDA

**Table FL-1  
2013 – 2015**

County	Population	Ozone			Particle Pollution (PM-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Alachua	259,964	0.059	B	N	ND	--	ND	--	--
Baker	27,420	0.058	B	N	ND	--	ND	--	--
Bay	181,635	0.063	C	N	ND	--	ND	--	--
Brevard	568,088	0.060	B	Y	16	A	5.6	A	N
Broward	1,896,425	0.060	B	Y	15	A	6.7	A	N
Citrus	141,058	ND	--	--	14	A	6.2	A	N
Collier	357,305	0.058	B	N	ND	--	ND	--	--
Columbia	68,348	0.058	B	N	ND	--	ND	--	--
Duval	913,010	ND	--	--	16	A	7.1	A	Y
Escambia	311,003	0.065	C	Y	16	A	7.7	A	N
Flagler	105,392	0.060	B	N	ND	--	ND	--	--
Highlands	99,491	0.059	B	N	ND	--	ND	--	--
Hillsborough	1,349,050	0.066	C	Y	15	A	6.8	A	N
Holmes	19,324	0.060	B	N	ND	--	ND	--	--
Indian River	147,919	0.062	B	N	ND	--	ND	--	--
Lake	325,875	0.063	C	N	ND	--	ND	--	--
Lee	701,982	0.061	B	Y	14	A	5.9	A	N
Leon	286,272	0.060	B	Y	19	A	8.3	A	N
Liberty	8,331	0.056	B	N	ND	--	ND	--	--
Manatee	363,369	0.062	B	Y	ND	--	ND	--	--
Marion	343,254	0.059	B	N	ND	--	ND	--	--
Miami-Dade	2,693,117	0.062	B	Y	14	A	6.2	A	Y
Okaloosa	198,664	0.062	B	N	ND	--	ND	--	--
Orange	1,288,126	0.061	B	Y	14	A	6.2	A	N
Osceola	323,993	0.063	C	N	ND	--	ND	--	--
Palm Beach	1,422,789	0.060	B	N	12	A	5.3	A	Y
Pasco	497,909	0.062	B	Y	ND	--	ND	--	--
Pinellas	949,827	0.062	B	Y	15	A	6.5	A	Y
Polk	650,092	0.063	C	Y	14	A	6.5	A	N
Santa Rosa	167,040	0.065	C	N	ND	--	ND	--	--
Sarasota	405,549	0.064	C	Y	16	A	6.1	A	N
Seminole	449,144	0.060	B	N	16	A	6.1	A	N
Volusia	517,887	0.059	B	Y	15	A	6.2	A	N
<b>Subtotal</b>	<b>18,038,652</b>								
Not Monitored	2,232,620								
<b>Total</b>	<b>20,271,272</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table FL-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.072	23	9.9
2001 – 2003	0.070	20	9.1
2002 – 2004	0.069	20	9.1
2003 – 2005	0.071	20	9.2
2004 – 2006	0.072	21	9.3
2005 – 2007	0.072	20	8.8
2006 – 2008	0.071	18	8.2
2007 – 2009	0.067	17	7.5
2008 - 2010	0.065	15	7.3
2009 – 2011	0.065	16	7.2
2010 – 2012	0.065	16	7.3
2011 – 2013	0.063	16	6.8
2012 - 2014	0.063	15	6.5
2013 - 2015	0.062	15	6.4

# FLORIDA

**Table FL-3  
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	2011-2013	2012-2014	2013-2015
A	1,930,957	4,692,532	5,803,339	2,939,832	1,739,348	3,576,629	0	1,155,540	874,033	1,186,781	2,147,564	1,847,193	2,753,125	0
B	8,668,875	7,843,720	8,343,324	7,954,342	8,796,113	8,292,191	3,631,108	6,555,810	11,142,049	11,456,620	10,265,851	11,849,532	13,995,882	11,246,368
C	3,118,200	2,033,193	1,142,882	3,081,309	3,453,430	3,965,805	10,744,920	7,512,220	3,512,057	3,619,511	4,417,537	3,153,476	813,479	5,738,216
D	0	0	0	0	0	0	1,509,239	453,057	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	13,718,032	14,569,445	15,289,544	13,975,483	13,988,891	15,834,625	15,885,266	15,676,627	15,528,139	16,262,912	16,830,952	16,850,205	17,562,186	16,984,584
NM	2,971,338	2,434,640	2,125,774	3,866,555	4,178,099	2,533,217	2,642,039	2,976,017	3,273,171	2,794,630	2,486,616	2,702,655	2,331,111	3,286,688
Total	16,689,370	17,004,085	17,415,318	17,842,038	18,166,990	18,367,842	18,527,305	18,652,644	18,801,310	19,057,542	19,317,568	19,552,860	19,893,297	20,271,272

**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	2011-2013	2012-2014	203-2015
A	12,402,826	13,454,573	13,889,132	14,198,669	13,942,490	14,520,061	13,535,143	13,575,413	13,526,480	13,453,267	14,143,562	14,303,340	14,286,983	14,543,419
B	0	0	0	0	466,039	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	12,402,826	13,454,573	13,889,132	14,198,669	14,408,529	14,520,061	13,535,143	13,575,413	13,526,480	13,453,267	14,143,562	14,303,340	14,286,983	14,543,419
NM	4,286,544	3,549,512	3,526,186	3,643,369	3,758,461	3,847,781	4,992,162	5,077,231	5,274,830	5,604,275	5,174,006	5,249,520	5,606,314	5,727,853
Total	16,689,370	17,004,085	17,415,318	17,842,038	18,166,990	18,367,842	18,527,305	18,652,644	18,801,310	19,057,542	19,317,568	19,552,860	19,893,297	20,271,272

**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	2011-2013	2012-2014	2013-2015
A	11,859,854	13,203,900	13,634,944	13,940,586	14,145,453	14,520,061	13,535,143	13,575,413	13,526,480	13,453,267	14,143,562	14,303,340	14,286,983	14,543,419
B	542,972	250,673	254,188	258,083	263,076	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	12,402,826	13,454,573	13,889,132	14,189,669	14,408,529	14,520,061	13,535,143	13,575,413	13,526,480	13,453,267	14,143,562	14,303,340	14,286,983	14,543,419
NM	4,286,544	3,549,512	3,526,186	3,643,369	3,758,461	3,847,781	4,992,162	5,077,231	5,274,830	5,604,275	5,174,006	5,249,520	5,606,314	5,727,853
Total	16,689,370	17,004,085	17,415,318	17,842,038	18,166,990	18,367,842	18,527,305	18,652,644	18,801,310	19,057,542	19,317,568	19,552,860	19,893,297	20,271,272

NM = Not Monitored

Figure FL-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Florida

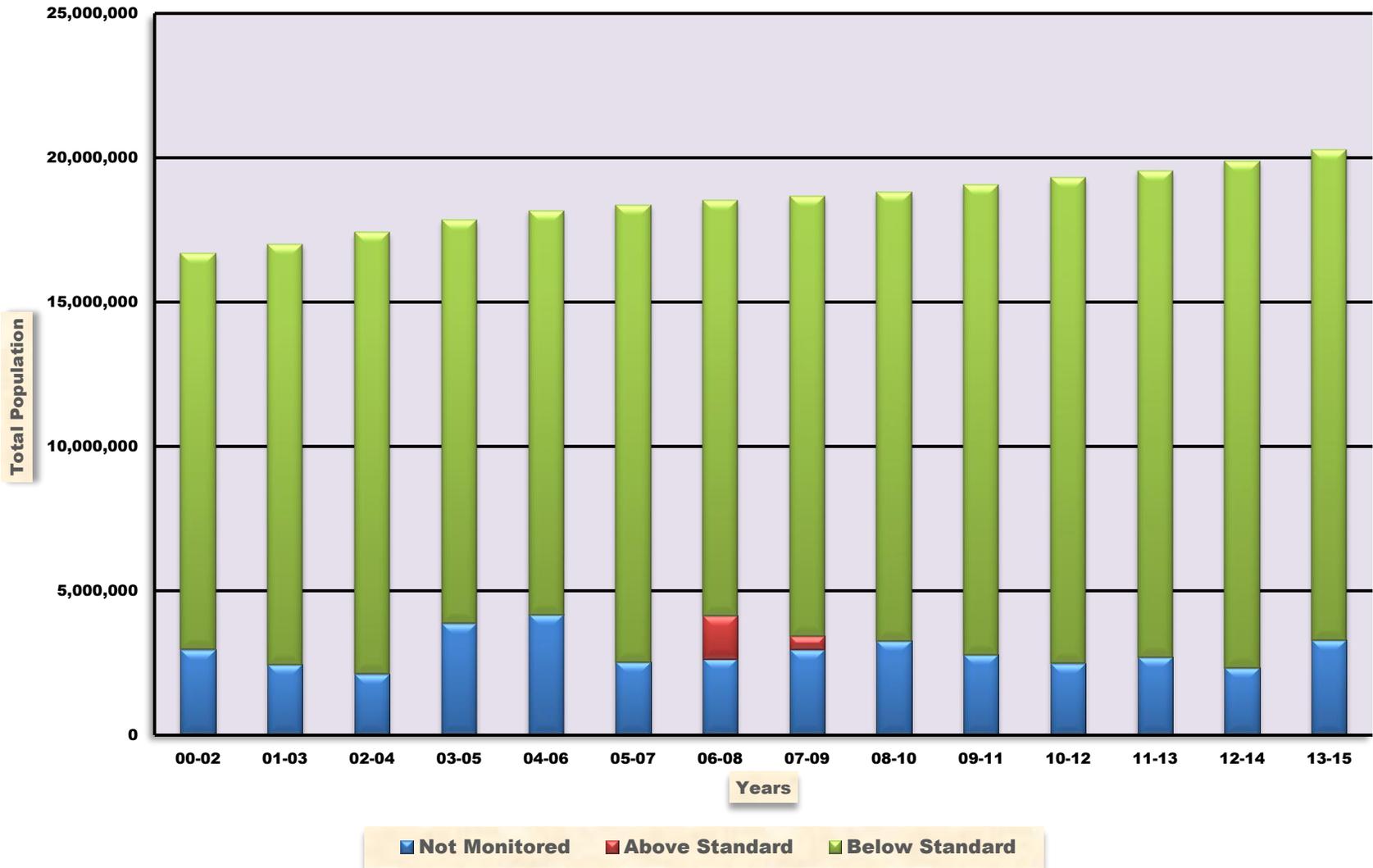


Figure FL-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Florida

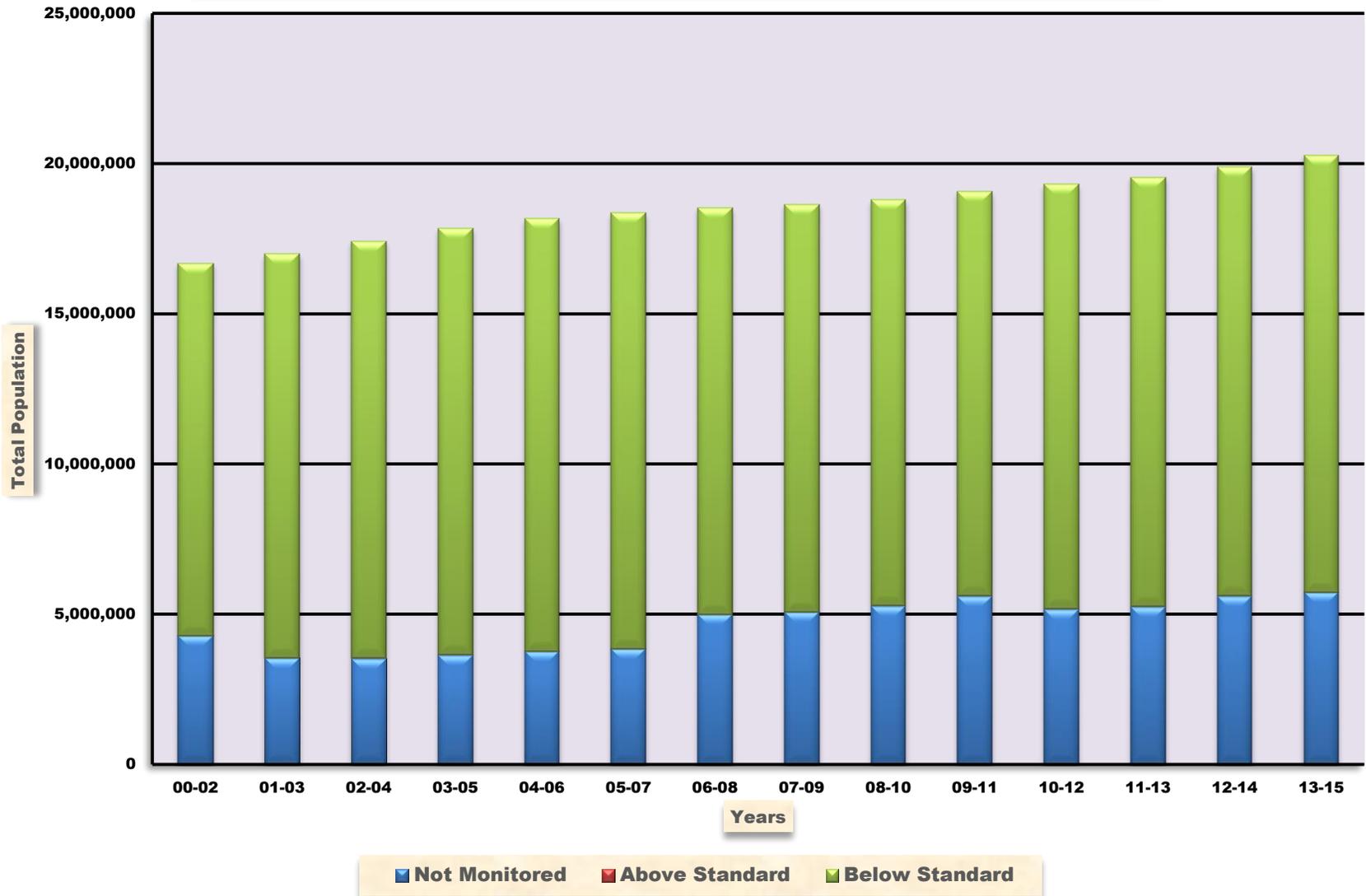
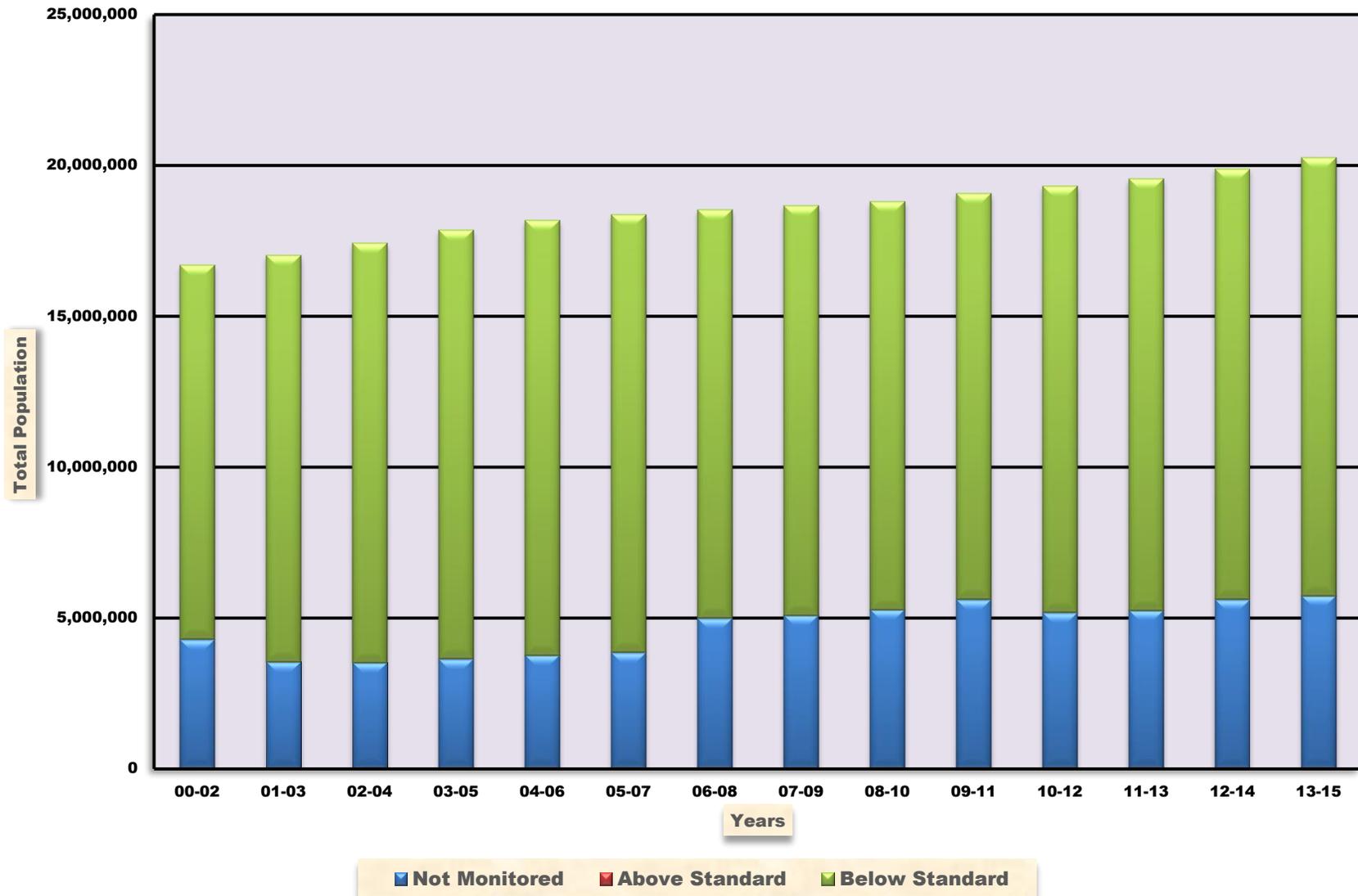


Figure FL-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Florida



# GEORGIA

## Ozone

In the 2000 – 2002 time period, approximately 0.7 million people (8.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to 3.4 million people (33.2%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure GA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.092 ppm. By 2013 – 2015 this had lowered to a value of 0.067 ppm, a reduction of 27.2 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 3.9 million people (45.4%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 5.5 million people (54.0%). The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure GA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 38  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 19  $\mu\text{g}/\text{m}^3$ , a reduction of 50.0 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.6 million people (7.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 5.5 million people (54.0%). The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure GA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 16.6  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 9.5  $\mu\text{g}/\text{m}^3$ , a reduction of 42.8 percent.

# GEORGIA

**Table GA-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bibb	153,721	0.063	C	N	19	A	9.2	A	Y
Chatham	286,956	0.058	B	N	19	A	8.9	A	N
Chattooga	24,922	0.060	B	N	ND	--	ND	--	--
Clarke	123,912	0.061	B	N	23	A	9.4	A	N
Clayton	273,955	ND	--	--	19	A	10.0	B	N
Cobb	741,334	ND	--	--	19	A	9.6	B	N
Columbia	144,052	0.060	B	N	ND	--	ND	--	--
Coweta	138,427	0.062	B	N	ND	--	ND	--	--
Dawson	23,312	0.064	C	N	ND	--	ND	--	--
DeKalb	734,871	0.067	C	N	19	A	9.3	A	Y
Dougherty	91332	ND	--	--	23	A	9.7	B	N
Douglas	140,733	0.066	C	N	ND	--	ND	--	--
Floyd	96,504	ND	--	--	20	A	9.9	B	N
<b>Fulton</b>	<b>1,010,562</b>	<b>0.073</b>	<b>D</b>	N	20	A	10.5	B	N
Glynn	83,579	0.056	B	N	ND	--	ND	--	--
Gwinnett	895,823	0.069	C	N	17	A	8.9	A	N
Hall	193,535	ND	--	--	17	A	8.4	A	N
<b>Henry</b>	<b>217,739</b>	<b>0.071</b>	<b>D</b>	N	ND	--	ND	--	--
Houston	150,033	ND	--	--	18	A	8.9	A	N
Lowndes	112,865	ND	--	--	17	A	8.5	A	N
Murray	39,565	0.064	C	N	ND	--	ND	--	--
Muscogee	200,579	0.061	B	N	21	A	9.6	B	Y
Paulding	152,238	0.062	B	N	18	A	8.2	A	N
Pike	17,941	0.066	C	N	ND	--	ND	--	--
Richmond	201,793	0.061	B	N	18	A	9.5	A	N
<b>Rockdale</b>	<b>88,856</b>	<b>0.072</b>	<b>D</b>	N	ND	--	ND	--	--
Sumter	30,779	0.058	B	N	ND	--	ND	--	--
Walker	68,066	ND	--	--	21	A	9.8	B	N
Washington	20,816	ND	--	--	20	A	9.1	A	N
Wilkinson	9,155	ND	--	--	22	A	10.0	B	N
<b>Subtotal</b>	<b>6,467,955</b>								
Not Monitored	3,746,905								
<b>Total</b>	<b>10,214,860</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table GA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.092	38	16.6
2001 – 2003	0.086	35	15.5
2002 – 2004	0.086	33	15.2
2003 – 2005	0.082	34	15.5
2004 – 2006	0.085	33	15.6
2005 – 2007	0.083	32	15.2
2006 – 2008	0.085	30	14.2
2007 – 2009	0.080	28	12.7
2008 - 2010	0.075	24	11.9
2009 – 2011	0.075	24	11.8
2010 – 2012	0.076	23	11.3
2011 – 2013	0.073	22	10.6
2012 - 2014	0.070	20	10.0
2013 - 2015	0.067	19	9.5

# GEORGIA

**Table GA-3  
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	2011-2013	2012-2014	203-2015
A	0	237,348	0	0	0	328,494	0	0	0	129,629	0	81,508	365,554	0
B	305,918	284,407	530,252	553,607	630,488	266,643	333,282	341,068	328,345	754,765	766,499	693,626	1,358,227	1,387,237
C	394,704	351,996	1,101,318	2,499,362	1,441,241	868,091	269,044	846,882	2,131,314	2,399,707	929,105	2,384,327	1,617,867	2,005,966
D	678,225	2,797,595	2,765,326	1,529,715	2,666,456	2,346,078	759,843	1,932,887	2,589,689	1,856,852	2,551,450	2,141,644	1,297,942	1,317,157
F	2,428,518	0	0	0	0	1,140,211	3,670,080	1,880,416	0	0	977,773	0	0	0
Subtotal	3,507,365	3,674,346	4,396,896	4,582,684	4,738,185	4,949,517	5,032,248	5,001,253	5,049,348	5,140,953	5,224,827	5,301,105	4,639,590	4,710,360
NM	4,700,891	4,951,447	4,372,356	4,343,238	4,417,628	4,400,471	4,472,595	4,619,593	4,638,305	4,674,257	4,725,118	4,691,062	5,457,753	5,504,500
Total	8,508,256	8,622,793	8,769,252	8,925,922	9,155,813	9,349,988	9,504,843	9,620,846	9,687,653	9,815,210	9,949,945	9,992,167	10,097,343	10,214,860

**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	2011-2013	2012-2014	203-2015
A	3,864,592	3,993,799	4,783,827	4,735,696	175,462	304,256	438,200	2,530,450	3,895,722	4,977,754	5,161,800	5,008,556	5,352,026	5,518,050
B	0	0	0	0	1,371,948	2,447,507	3,309,656	2,419,604	0	78,217	78,231	0	0	0
C	0	0	0	0	3,617,823	2,889,065	1,835,993	0	0	0	0	0	0	0
D	0	0	0	0	258,552	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,864,592	3,993,799	4,783,827	4,735,696	5,423,785	5,640,827	5,583,849	4,950,053	3,895,722	5,085,970	5,240,031	5,008,556	5,352,026	5,518,050
NM	4,643,664	4,628,994	3,985,425	4,190,226	3,732,028	3,709,161	3,920,994	4,670,793	5,791,931	4,759,240	4,679,914	4,983,611	4,745,317	4,696,810
Total	8,508,256	8,622,793	8,769,252	8,925,922	9,155,813	9,349,988	9,504,843	9,620,846	9,687,653	9,815,210	9,919,945	9,992,167	10,097,343	10,214,860

**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	2011-2013	2012-2014	2013-2015
A	0	94,207	71,475	0	74,870	0	182,931	704,731	1,670,877	3,692,476	4,397,449	524,972	1,840,636	2,949,703
B	93,903	273,093	461,051	170,862	100,592	178,265	1,250,248	4,167,745	2,224,846	1,363,494	842,583	2,594,376	2,515,072	2,568,348
C	506,868	1,058,688	1,552,470	1,645,904	1,666,256	1,817,424	3,811,379	77,577	0	0	0	1,532,539	996,319	0
D	1,129,058	2,161,527	2,825,174	3,059,561	2,823,670	3,645,138	339,291	0	0	0	0	356,670	0	0
F	2,134,764	406,284	404,741	409,369	758,398	0	0	0	0	0	0	0	0	0
Subtotal	3,864,592	3,993,799	5,314,910	5,285,695	5,423,785	5,640,827	5,583,849	4,950,053	3,895,722	5,055,970	5,240,031	5,008,556	5,352,026	5,518,050
NM	4,643,664	4,628,994	3,454,342	3,640,227	3,732,028	3,709,161	3,620,994	4,670,793	5,791,931	4,759,240	4,679,914	4,983,611	4,745,317	4,696,810
Total	8,508,256	8,622,793	8,769,252	8,925,922	9,155,813	9,349,988	9,504,843	8,620,846	9,687,653	9,815,210	9,919,945	9,992,167	10,097,343	10,214,860

NM = Not Monitored

Figure GA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Georgia

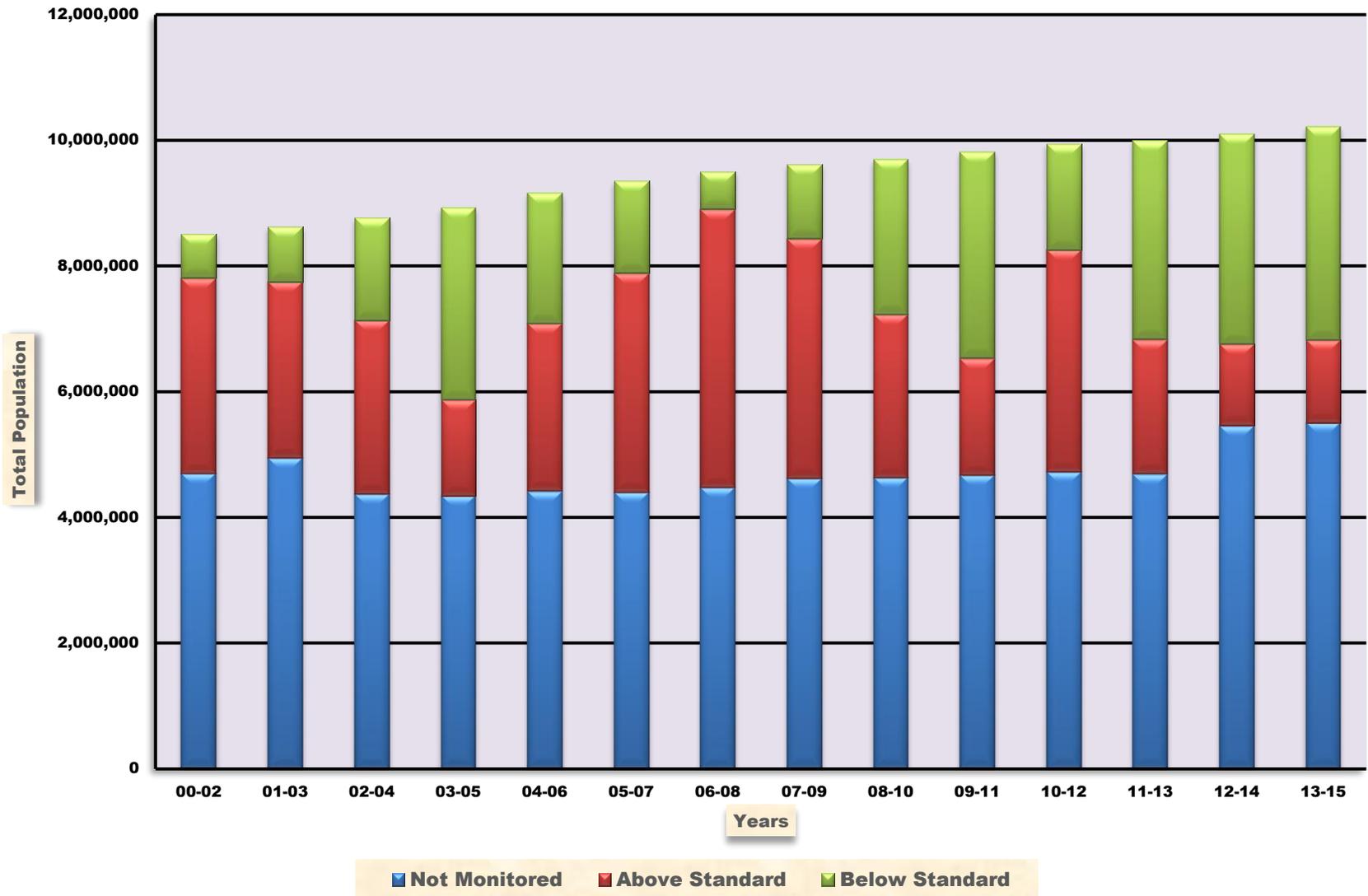


Figure GA-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Georgia

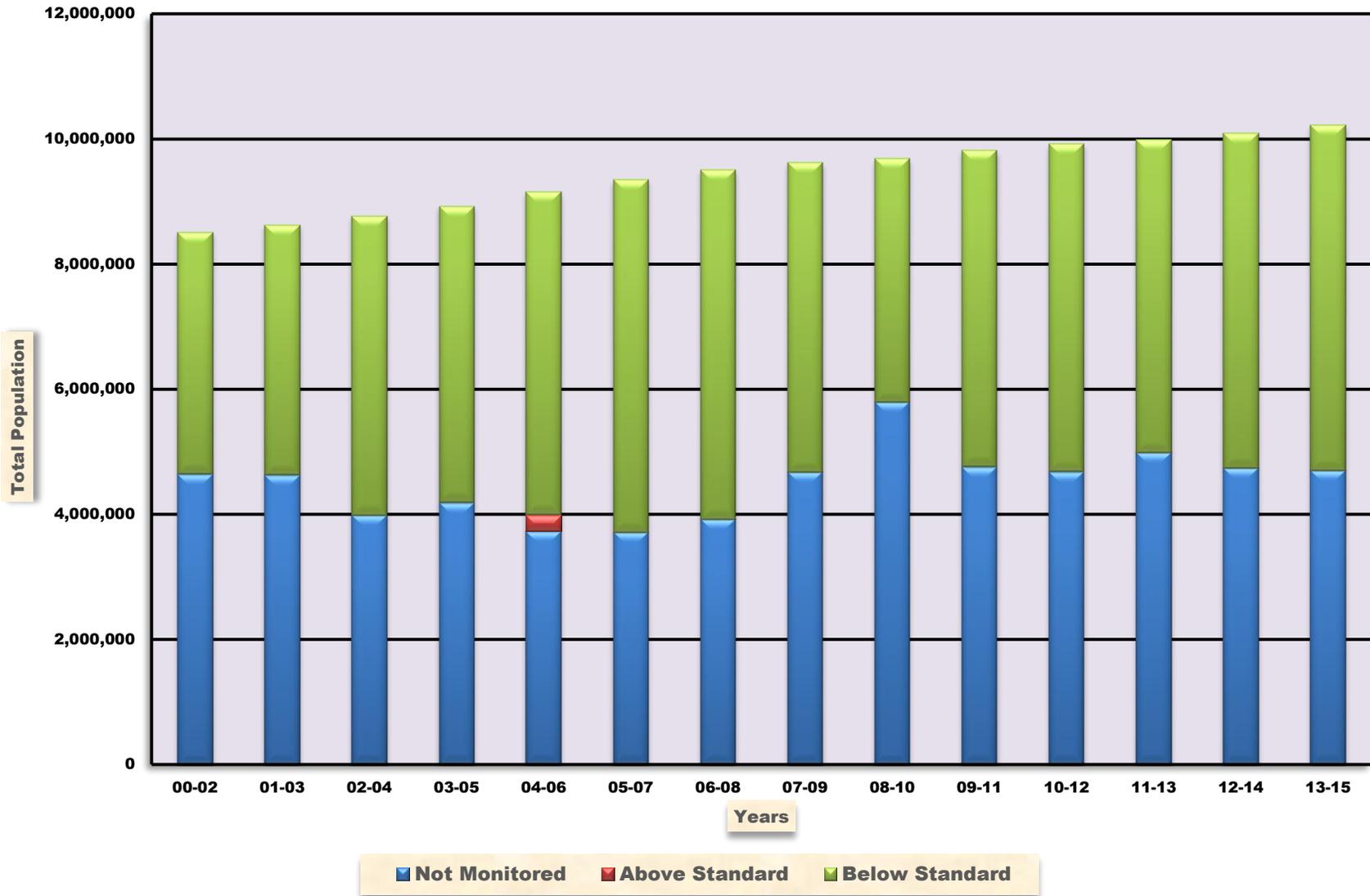
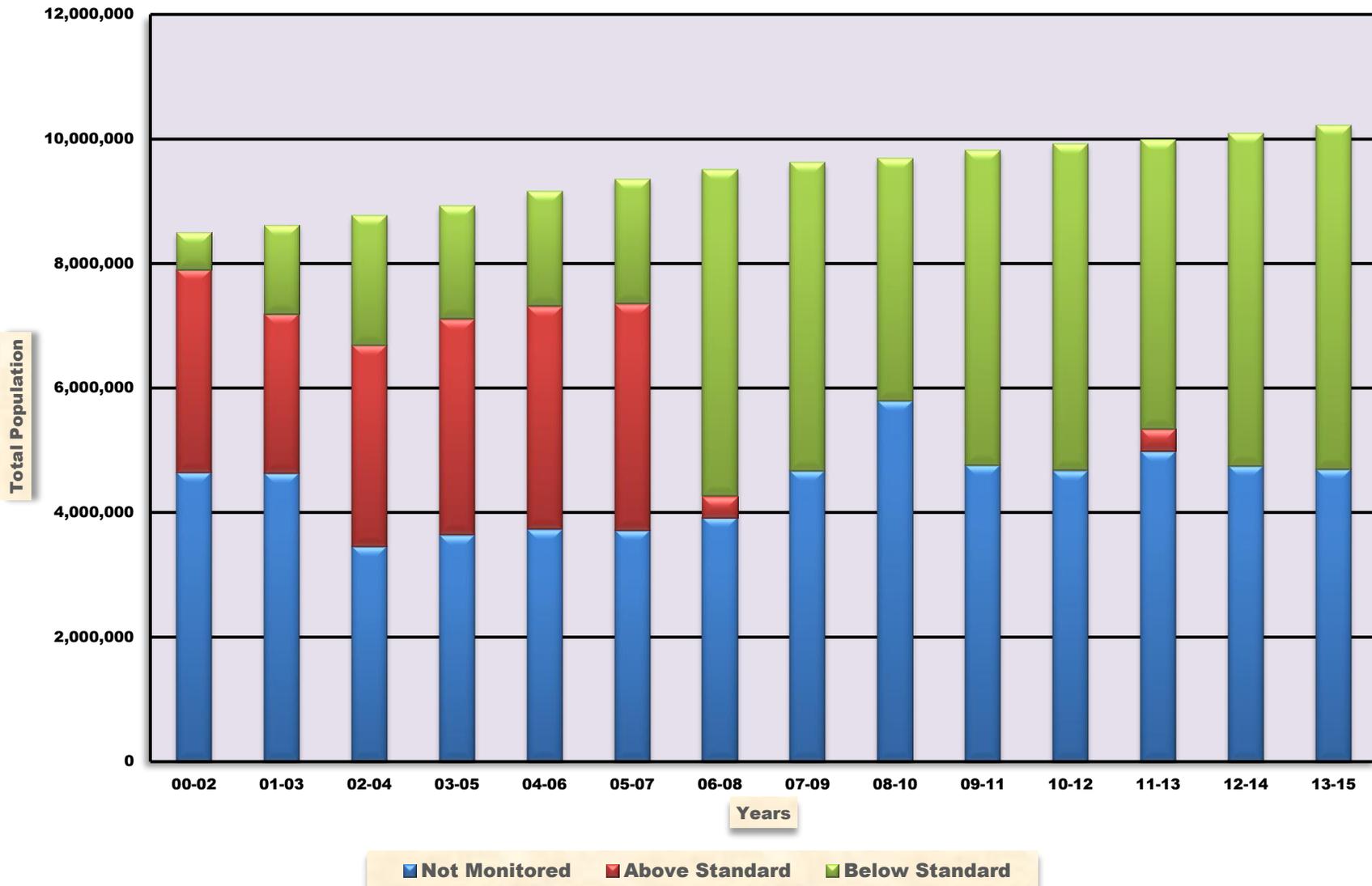


Figure GA-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Georgia



# HAWAII

## Ozone

Ozone levels in Hawaii have historically been better than the standard. In the 2000 – 2002 time period, approximately 1.0 million people (84.3%) lived in counties that met the ozone standard. By 2013 – 2015 this was a little under 1.0 million people (69.8%). All people in both years either lived in counties with air quality rated as A or lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure HI-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.043 ppm. By 2013 – 2015 this had increased to a value of 0.051 ppm, an increase of 18.6 percent.

## 24-Hour PM-2.5

24-hour PM-2.5 levels in Hawaii have historically been better than the standard. In the 2000 – 2002 time period, approximately 1.0 million people (82.7%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.4 million people (99.9%). All people in both years either lived in counties with air quality rated as A or lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure HI-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 10 µg/m<sup>3</sup>. By 2013 – 2015 this had increased to a value of 11 µg/m<sup>3</sup>, a 10.0 percent increase.

## Annual PM-2.5

Annual PM-2.5 levels in Hawaii have historically been better than the standard. In the 2000 – 2002 time period, approximately 1.0 million people (82.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 1.4 million people (99.9%). All people in both years either lived in counties with air quality rated as A or lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure HI-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 4.5 µg/m<sup>3</sup>. By 2013 – 2015 this had increased to a value of 5.2 µg/m<sup>3</sup>, an increase of 15.6 percent.

**Table HI-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Hawaii	196,428	ND	--	--	12	A	7.0	A	Y
Honolulu	998,714	0.051	A	N	11	A	4.9	A	Y
Kauai	71,735	ND	--	--	10	A	3.8	A	N
Maui	164,637	ND	--	--	14	A	5.7	A	N
Subtotal	<b>1,431,514</b>								
Not Monitored	89								
<b>Total</b>	<b>1,431,603</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table HI-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.043	10	4.5
2001 – 2003	0.041	10	4.7
2002 – 2004	0.042	9	4.6
2003 – 2005	0.042	9	4.2
2004 – 2006	0.042	8	4.1
2005 – 2007	0.038	9	4.0
2006 – 2008	0.038	10	4.2
2007 – 2009	0.040	12	4.3
2008 - 2010	0.045	13	4.4
2009 – 2011	0.047	12	5.8
2010 – 2012	0.045	13	6.0
2011 – 2013	0.045	13	5.9
2012 - 2014	0.049	12	5.5
2013 - 2015	0.051	11	5.2

# HAWAII

**Table HI-3  
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	2011-2013	2012-2014	2013-2015
A	1,045,049	1,052,753	907,997	918,181	926,954	925,335	933,680	943,177	953,207	963,607	976,372	983,429	991,788	998,714
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,045,049	1,052,753	907,997	918,181	926,954	925,335	933,680	943,177	953,207	963,607	976,372	983,429	991,788	998,714
NM	194,564	198,401	365,572	374,548	382,777	390,340	398,533	403,540	407,094	411,203	415,941	420,625	427,773	432,889
Total	1,239,613	1,251,154	1,273,569	1,292,729	1,309,731	1,315,675	1,332,213	1,346,717	1,360,301	1,374,810	1,392,313	1,404,054	1,419,561	1,431,603

## 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	2011-2013	2012-2014	2013-2015
A	1,024,923	1,031,780	1,048,505	1,061,515	1,072,621	825,335	933,680	945,177	953,207	1,307,019	1,322,789	1,334,452	1,256,450	1,431,514
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,024,923	1,031,780	1,048,505	1,061,515	1,072,621	925,335	933,680	945,177	953,207	1,307,019	1,323,789	1,334,452	1,256,453	1,431,514
NM	214,690	219,374	225,064	231,214	237,110	390,340	398,533	401,540	407,094	67,749	68,524	59,602	163,108	89
Total	1,239,613	1,251,154	1,273,569	1,292,729	1,309,731	1,315,675	1,332,213	1,346,717	1,360,301	1,374,810	1,392,313	1,404,054	1,419,561	1,431,603

## 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	2011-2013	2012-2014	2013-2015
A	1,024,923	1,031,780	1,048,505	1,061,515	1,072,621	925,335	933,680	945,177	953,207	1,307,019	1,323,789	1,296,288	1,217,615	1,431,514
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	38,164	38,838	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,024,923	1,031,780	1,048,505	1,061,515	1,072,621	925,335	933,680	945,177	953,207	1,307,019	1,323,789	1,334,452	1,256,453	1,431,514
NM	214,690	219,374	225,064	231,214	237,110	390,340	398,533	401,540	407,094	67,791	68,524	69,602	163,108	89
Total	1,239,613	1,251,154	1,273,569	1,292,729	1,309,731	1,315,675	1,332,213	1,346,717	1,360,301	1,374,810	1,392,313	1,404,054	1,419,561	1,431,603

NM = Not Monitored

Figure HI-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Hawaii

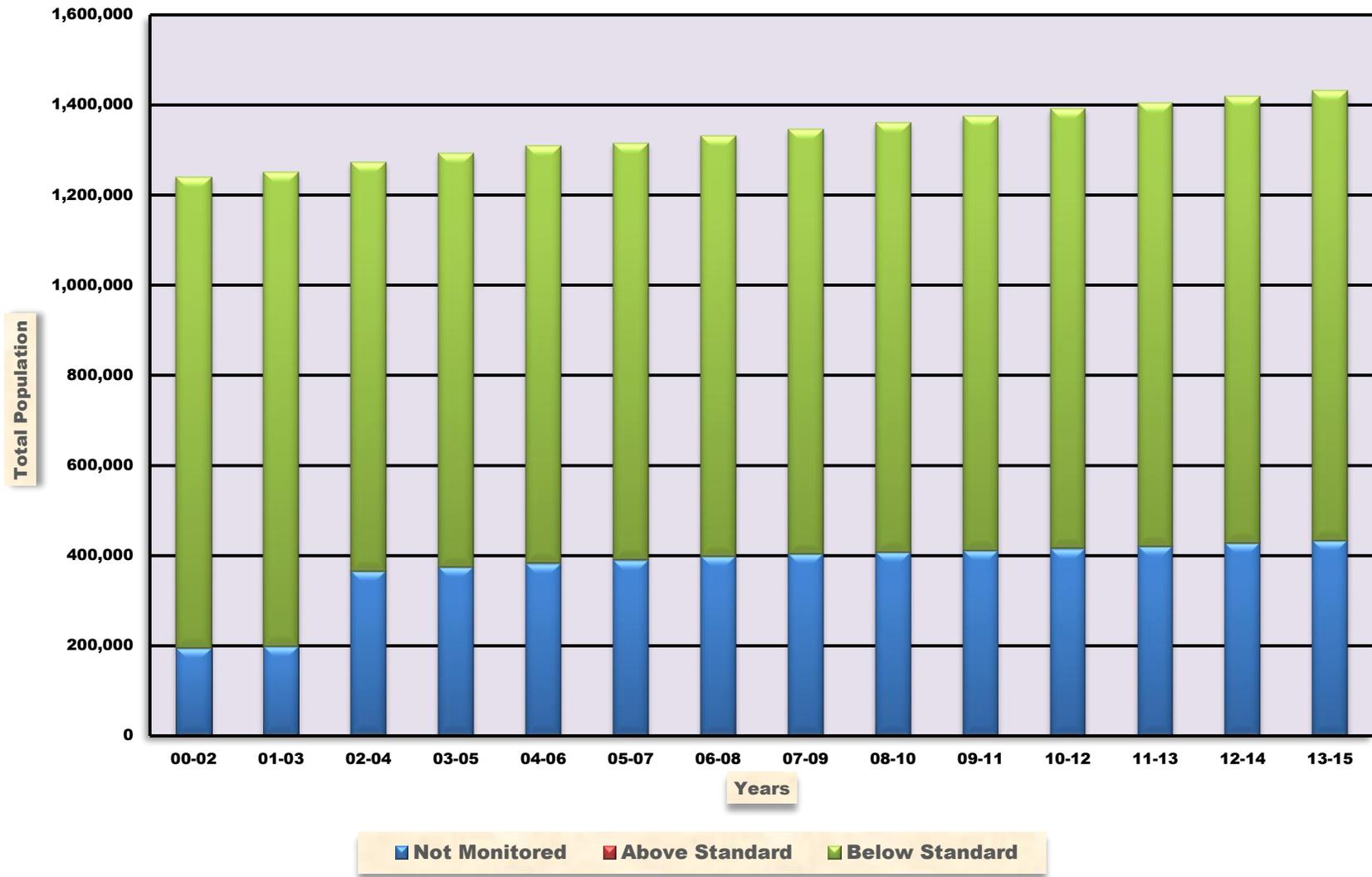


Figure HI-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Hawaii

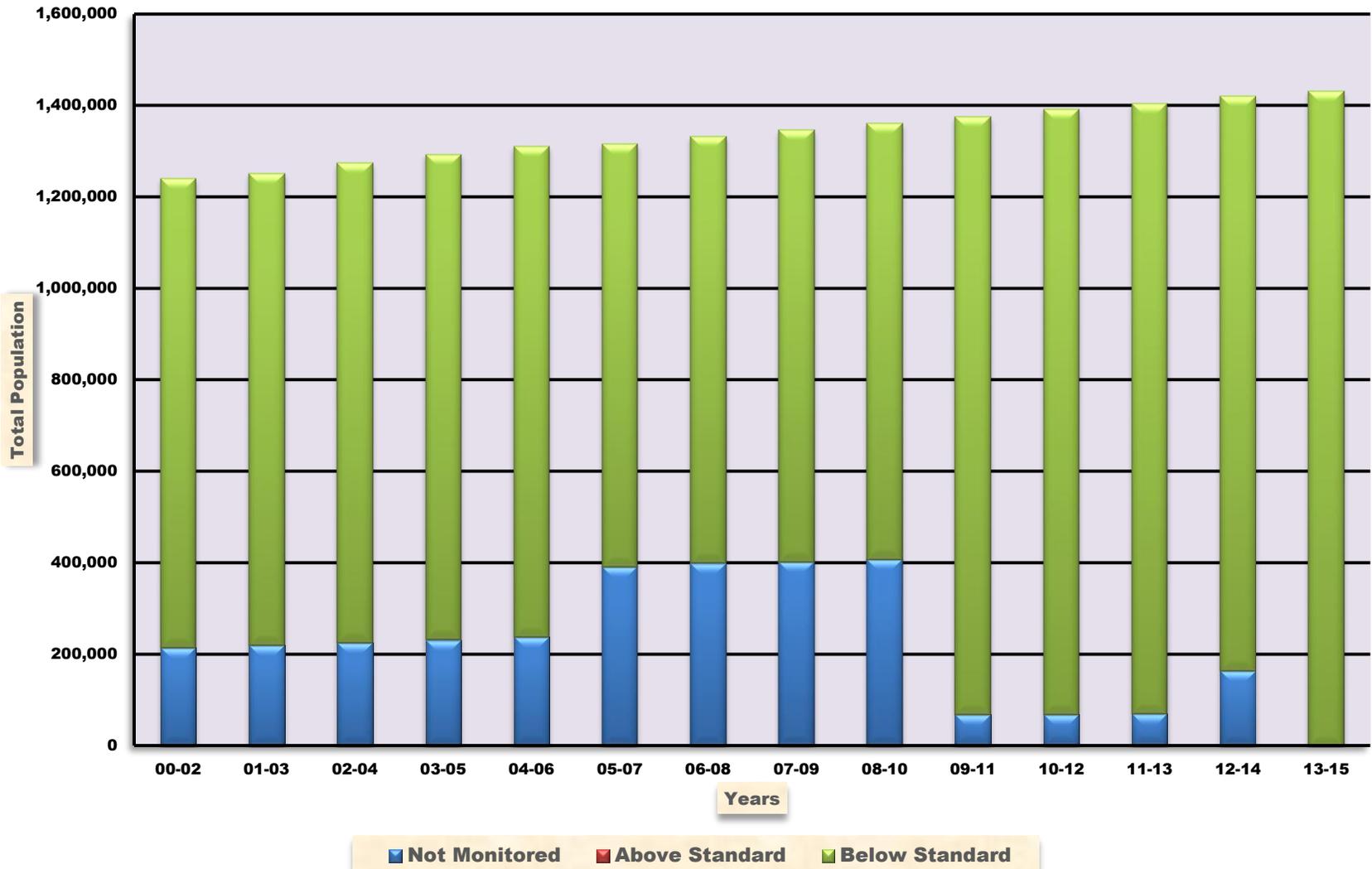
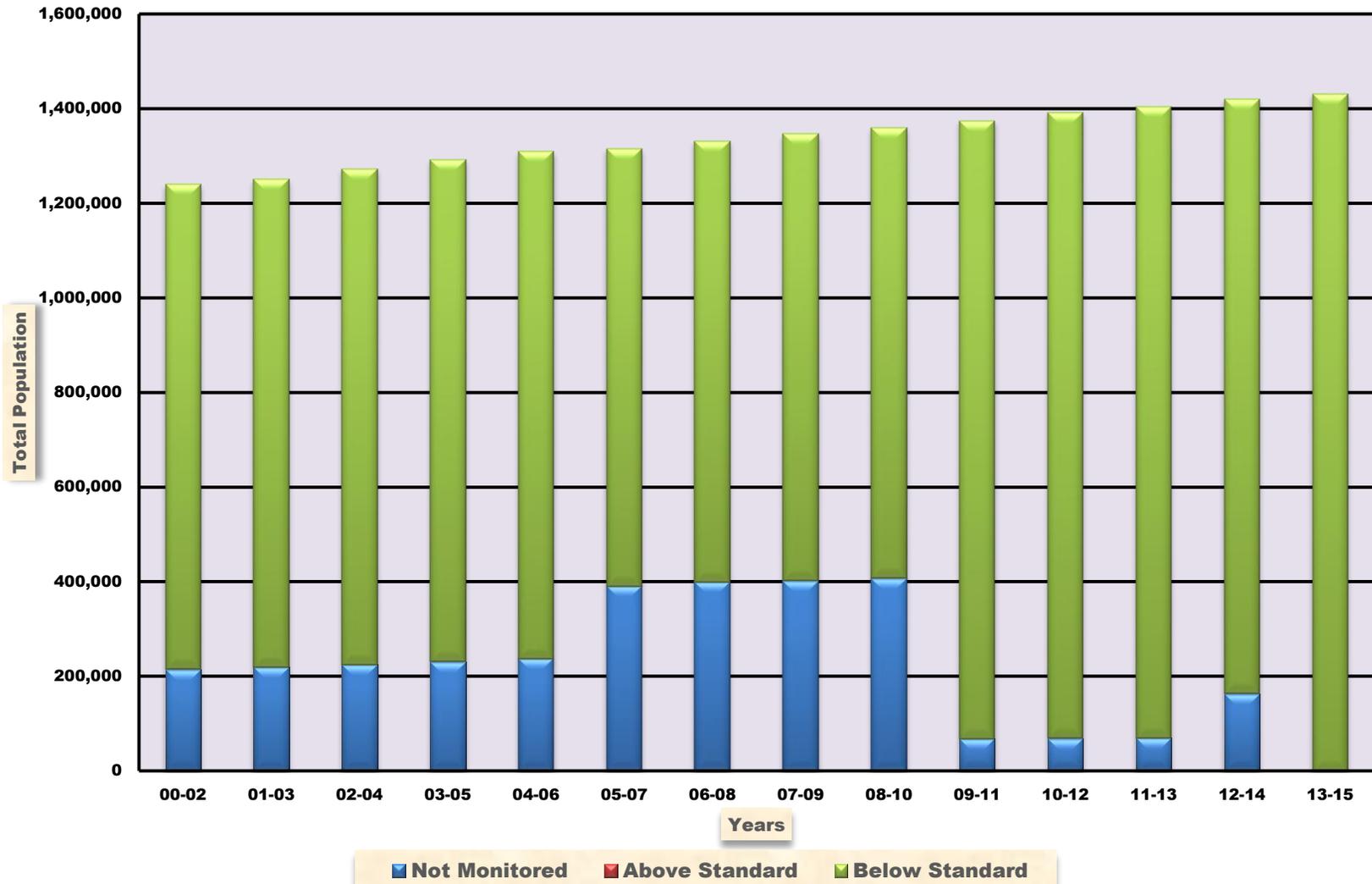


Figure HI-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Hawaii



# IDAHO

## Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 437,000 people (26.4%) and the rest of the population lived in areas where ozone is not monitored. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure ID-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.071 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 9.9 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.7 million people (50.3%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 84,000 people (5.1%). The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure ID-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29 µg/m<sup>3</sup>. By 2013 – 2013 this had lowered to a value of 22 µg/m<sup>3</sup>, a reduction of 24.1 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 675,000 people (50.3%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 84,000 people (5.1%). The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure ID-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.2 µg/m<sup>3</sup>. By 2013 this was still 8.2 µg/m<sup>3</sup>.

**Table ID-1**  
**2013 – 2015**

County	Population	Ozone			Particle Pollution (Pm-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Ada	434,211	0.064	C	Y	ND	--	ND	--	--
Bannock	83,744	ND	--	--	20	A	7.6	A	N
Butte	2,501	0.061	B	N	ND	--	ND	--	--
Lemhi	7,735	ND	--	--	40	F	14.9	F	N
<b>Subtotal</b>	<b>528,191</b>								
Not Monitored	1,126,739								
<b>Total</b>	<b>1,654,930</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table ID-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	ND	29	8.2
2001 – 2003	ND	34	9.6
2002 – 2004	0.071	34	9.0
2003 – 2005	0.071	29	8.4
2004 – 2006	0.077	31	8.5
2005 – 2007	0.074	28	8.4
2006 – 2008	0.072	31	10.8
2007 – 2009	0.060	31	10.9
2008 - 2010	0.067	36	11.1
2009 – 2011	0.063	19	8.2
2010 – 2012	0.067	20	6.7
2011 – 2013	0.067	39	8.8
2012 - 2014	0.066	28	8.6
2013 - 2015	0.064	22	8.2

# IDAHO

**Table ID-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	29,167	189,866	0	0	0	0	0	141,132	0	0	0	0
B	0	0	292,056	348,755	0	132,811	135,627	140,242	141,385	203,243	411,801	419,106	215,740	2,501
C	0	0	0	0	363,498	375,368	382,618	0	392,365	200,421	0	0	213,118	434,211
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	321,223	538,621	363,498	508,179	518,245	140,242	533,750	544,796	411,801	419,106	428,858	436,712
NM	1,340,372	1,363,380	1,070,579	889,620	1,105,171	996,926	1,016,075	1,414,197	1,033,832	1,040,189	1,183,927	1,193,030	1,205,606	1,218,218
Total	1,340,372	1,363,380	1,391,802	1,428,241	1,468,669	1,505,105	1,534,320	1,554,439	1,567,582	1,584,985	1,595,728	1,612,136	1,634,464	1,654,930

**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	2011-2013	2012-2014	2013-2015
A	674,835	171,585	177,343	622,389	0	0	0	9,286	0	676,227	686,749	83,249	83,347	83,744
B	0	0	0	0	623,437	391,138	9,385	0	0	0	0	207,915	0	0
C	0	0	0	0	0	9,296	13,031	12,862	7,936	0	0	0	0	0
D	0	0	0	0	0	12,949	0	0	12,765	20,639	7,758	14,139	7,726	0
F	0	0	0	0	13,014	0	0	0	0	0	12,702	422,891	3,021	7,735
Subtotal	674,835	171,585	177,343	622,389	636,451	413,383	22,416	22,148	20,701	696,866	707,209	728,194	104,094	91,479
NM	665,537	1,191,795	1,214,459	805,852	832,218	1,091,722	1,511,904	1,532,291	1,546,881	888,119	888,519	883,942	1,530,370	1,563,451
Total	1,340,372	1,363,380	1,391,802	1,428,241	1,468,669	1,505,105	1,534,320	1,554,439	1,567,582	1,584,985	1,595,728	1,612,136	1,634,464	1,654,930

**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	2011-2013	2012-2014	2013-2015
A	654,420	157,688	164,562	609,477	623,437	400,434	22,416	22,148	20,701	696,666	694,507	512,567	96,368	83,744
B	13,044	12,897	12,781	12,912	13,014	12,949	0	0	0	0	12,702	207,915	0	0
C	7,371	0	0	0	0	0	0	0	0	0	0	7,712	7,726	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	7,735
Subtotal	674,835	171,585	177,343	622,389	636,451	413,383	22,416	22,148	20,701	696,666	707,209	728,194	104,094	91,479
NM	665,537	1,191,795	1,214,459	805,852	832,218	1,091,722	1,511,904	1,532,291	1,546,881	888,119	888,519	883,942	1,530,370	1,563,451
Total	1,340,372	1,363,380	1,391,802	1,428,241	1,468,669	1,505,105	1,534,320	1,554,439	1,567,582	1,584,985	1,595,728	1,612,136	1,634,464	1,654,930

NM = Not Monitored

Figure ID-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Idaho

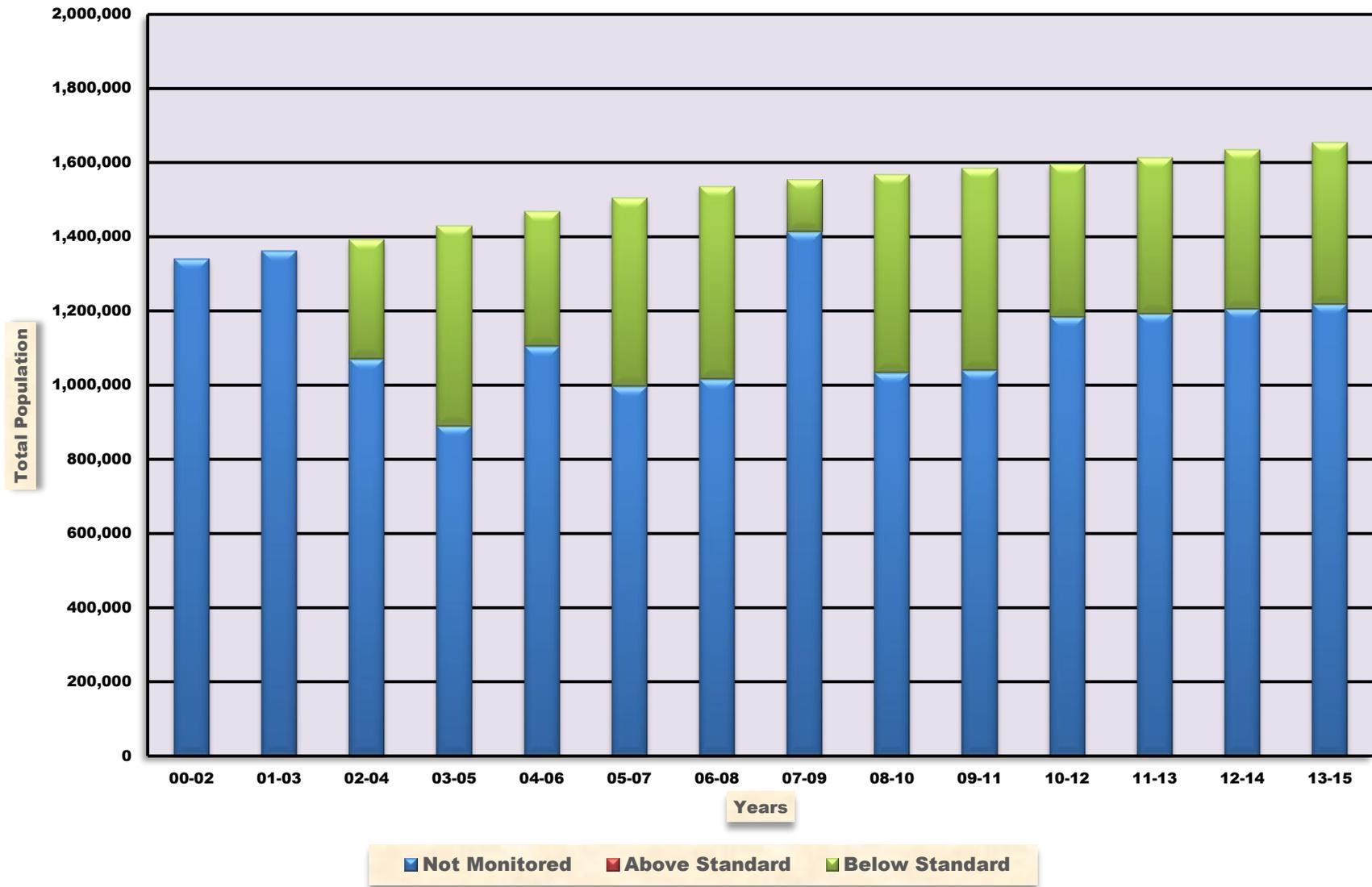


Figure ID-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Idaho

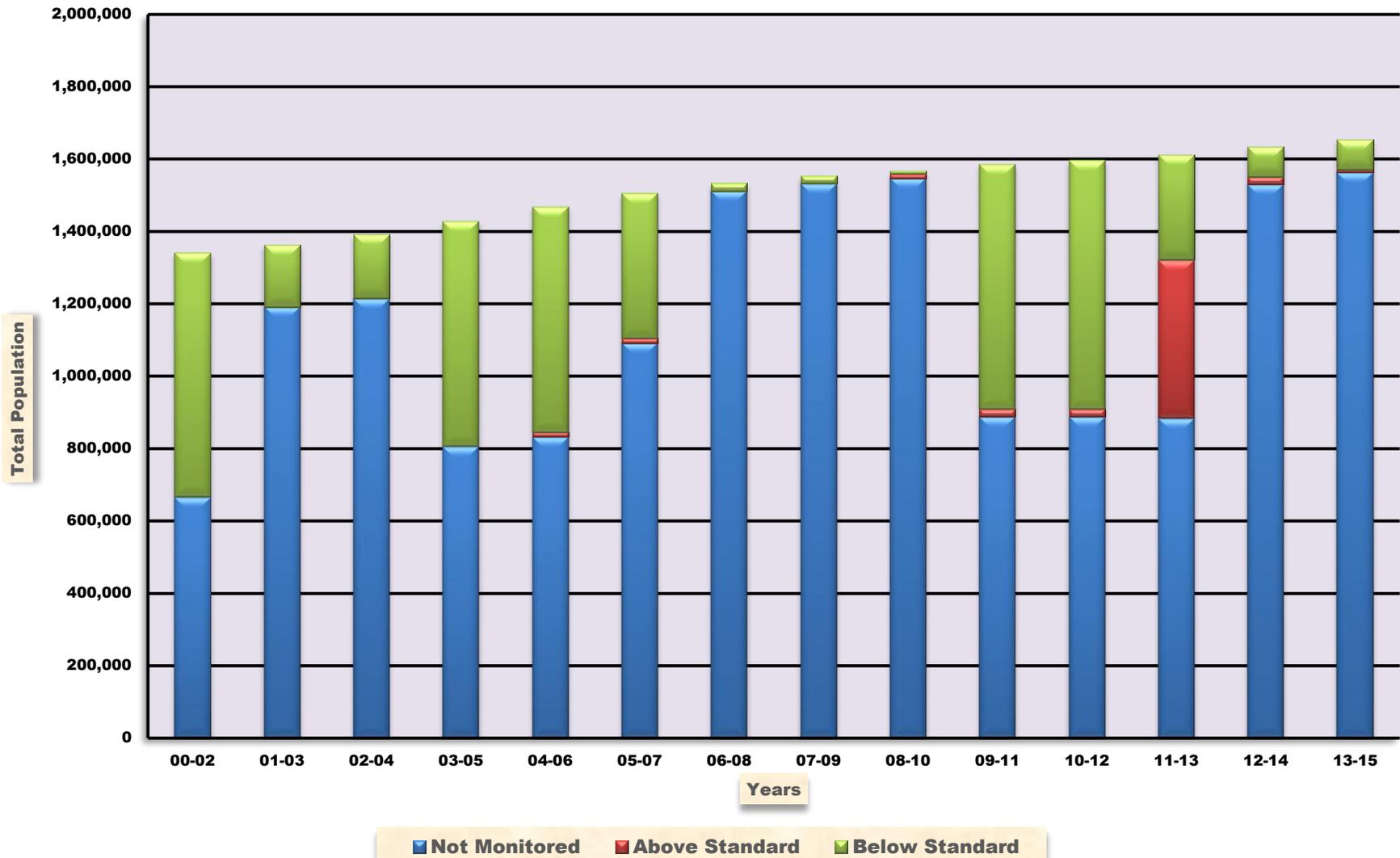
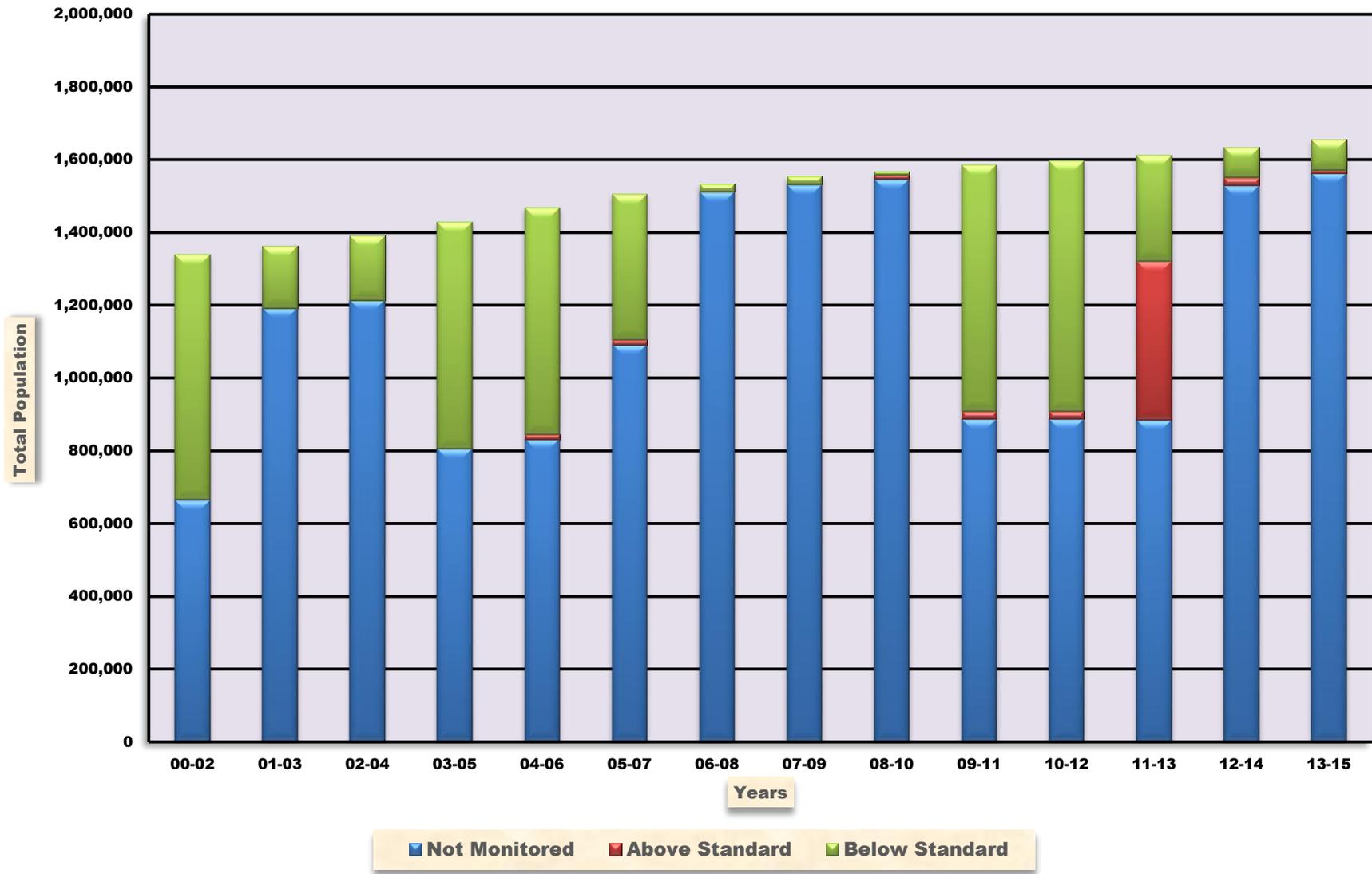


Figure ID-3

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Idaho



## ILLINOIS

### Ozone

In the 2000 – 2002 time period, approximately 9.2 million people (73.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to 9.7 million people (75.6%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure IL-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.077 ppm. By 2013 – 2015 this had lowered to a value of 0.070, a reduction of 15.6 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 10.2 million people (81.2%) lived in counties where 24-hour PM-2.5 levels met the standard. Data for 2012 and 2013 have been removed. By 2009 -2011 this had lowered to a value of 9.6 million people (74.8%). The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure IL-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 -2002 was 36  $\mu\text{g}/\text{m}^3$ . By 2009 – 2011 this had lowered to a value of 27  $\mu\text{g}/\text{m}^3$ , a reduction of 25.0 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 3.5 million people (27.6%) lived in counties where annual PM-2.5 levels met the standard. Data for 2012 and 2013 have been removed. By 2009 – 2011 this had increased to 8.6 million people (74.8%). The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure IL-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.5  $\mu\text{g}/\text{m}^3$ . By 2009 – 2011 this had lowered to 11.2  $\mu\text{g}/\text{m}^3$ , a reduction of 27.7 percent.

**Table IL-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Adams	62,013	0.062	B	N	ND	--	ND	--	--
Champaign	208,861	0.064	C	Y	ND	--	ND	--	--
Clark	15,979	0.062	B	N	ND	--	ND	--	--
Cook	5,238,216	0.065	C	Y	ND	--	ND	--	--
DuPage	933,736	0.064	C	N	ND	--	ND	--	--
Effingham	34,371	0.063	B	N	ND	--	ND	--	--
Hamilton	8,200	0.063	C	N	ND	--	ND	--	--
Jersey	22,372	0.066	C	N	ND	--	ND	--	--
Jo Daviess	22,086	0.064	C	N	ND	--	ND	--	--
Kane	530,847	0.065	C	N	ND	--	ND	--	--
<b>Lake</b>	<b>703,910</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	<b>ND</b>	<b>--</b>	<b>ND</b>	<b>--</b>	<b>--</b>
McHenry	307,343	0.065	C	N	ND	--	ND	--	--
McLean	173,166	0.066	C	N	ND	--	ND	--	--
Macon	107,303	0.065	C	N	ND	--	ND	--	--
Macoupin	46,045	0.064	C	N	ND	--	ND	--	--
Madison	266,209	0.069	C	Y	ND	--	ND	--	--
Peoria	186,221	0.062	B	Y	ND	--	ND	--	--
Randolph	32,852	0.067	C	N	ND	--	ND	--	--
Rock Island	146,133	0.060	B	N	ND	--	ND	--	--
St Clair	264,052	0.066	C	N	ND	--	ND	--	--
Sangamon	198,712	0.061	B	N	ND	--	ND	--	--
Will	687,263	0.063	C	N	ND	--	ND	--	--
Winnebago	287,078	0.066	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>10,487,968</b>								
Not Monitored	2,372,027								
<b>Total</b>	<b>12,859,995</b>								

**DV = Design Value**

**ND = No Data**

**MM = Multiple Monitors**

**Table IL-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.077	36	15.5
2001 – 2003	0.079	36	14.9
2002 – 2004	0.075	34	13.9
2003 – 2005	0.073	37	14.2
2004 – 2006	0.071	35	13.8
2005 – 2007	0.074	36	14.1
2006 – 2008	0.069	31	12.8
2007 – 2009	0.067	30	12.0
2008 - 2010	0.065	27	11.3
2009 – 2011	0.068	27	11.2
2010 – 2012	0.073	ND	ND
2011 – 2013	0.072	ND	ND
2012 - 2014	0.070	ND	ND
2013 - 2015	0.065	ND	ND

# ILLINOIS

## Table IL-3 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	2011-2013	2012-2014	2013-2015
A	0	0	147,291	255,229	1,208,362	859,039	0	0	713,036	240,973	147,457	0	0	0
B	3,945,254	3,760,688	5,930,855	7,791,898	8,481,598	5,161,324	4,745,572	5,343,329	6,495,884	3,272,945	1,251,722	275,780	2,411,741	2,360,284
C	5,225,664	5,060,048	4,146,578	2,181,149	552,345	4,254,616	4,798,660	4,930,403	2,984,542	5,924,878	5,661,190	7,774,903	6,109,204	7,357,222
D	841,813	1,384,827	0	0	0	0	737,489	89,659	0	795,708	3,172,282	2,422,167	1,959,918	770,462
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	10,012,781	10,205,563	10,224,723	10,228,276	10,242,305	10,274,979	10,281,721	10,363,391	10,193,462	10,234,504	10,232,652	10,472,849	10,480,863	10,482,968
NM	2,512,825	2,350,443	2,365,050	2,381,627	2,401,650	2,420,887	2,465,317	2,433,387	2,637,170	2,634,753	2,642,603	2,409,286	2,399,717	2,372,027
Total	12,525,556	12,556,006	12,589,773	12,609,903	12,643,995	12,695,866	12,747,038	12,796,778	12,830,632	12,869,257	12,875,255	12,882,135	12,880,580	12,859,995

## 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	2011-2013	2012-2014	2013-2015
A	10,167,076	10,186,107	10,206,134	10,210,359	33,688	0	1,526,684	2,467,023	3,742,726	5,036,069	0	0	0	0
B	0	0	0	0	2,189,335	725,645	6,339,604	5,146,515	5,801,620	4,121,490	0	0	0	0
C	0	0	0	0	4,448,045	5,112,927	2,397,936	2,496,538	865,779	474,280	0	0	0	0
D	0	0	0	0	1,424,456	2,998,269	0	0	0	0	0	0	0	0
F	0	0	0	0	2,152,290	1,377,686	0	0	0	0	0	0	0	0
Subtotal	10,167,076	10,186,107	10,206,134	10,210,359	10,247,813	10,214,526	10,264,223	10,110,076	10,410,125	9,631,839	0	0	0	0
NM	2,358,480	2,369,899	2,383,639	2,399,544	2,396,142	2,481,340	2,482,815	2,686,702	2,420,507	3,237,418	12,875,255	12,882,135	12,880,580	12,859,995
Total	12,525,556	12,556,006	12,589,773	12,609,903	12,643,955	12,695,866	12,747,038	12,796,778	12,830,632	12,869,257	12,875,255	12,882,135	12,880,580	12,859,995

## 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	2011-2013	2012-2014	2013-2015
A	0	0	1,604,607	998,224	1,162,412	332,024	3,592,806	5,066,815	7,773,660	7,330,231	0	0	0	0
B	1,292,550	1,866,690	2,845,352	3,111,978	3,342,528	2,881,618	3,348,269	3,720,146	2,501,824	2,234,494	0	0	0	0
C	2,166,042	3,823,119	4,443,803	1,671,058	3,756,237	3,772,737	3,233,738	1,323,115	134,641	67,115	0	0	0	0
D	3,951,763	3,306,067	1,180,511	3,775,958	1,427,096	3,228,146	89,411	0	0	0	0	0	0	0
F	2,756,721	1,190,231	131,861	653,141	563,540	0	0	0	0	0	0	0	0	0
Subtotal	10,167,076	10,186,107	10,206,134	10,210,359	10,247,813	10,214,526	10,264,223	10,110,076	10,410,125	9,631,839	0	0	0	0
NM	2,358,480	2,369,899	2,383,639	2,399,544	2,396,142	2,481,340	2,482,815	2,686,702	2,420,507	3,237,418	12,875,255	12,882,135	12,880,580	12,859,995
Total	12,525,556	12,556,006	12,589,773	12,609,903	12,643,955	12,695,866	12,747,038	12,796,778	12,830,632	12,869,257	12,875,255	12,882,135	12,880,580	12,859,995

NM = Not Monitored

Figure IL-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Illinois

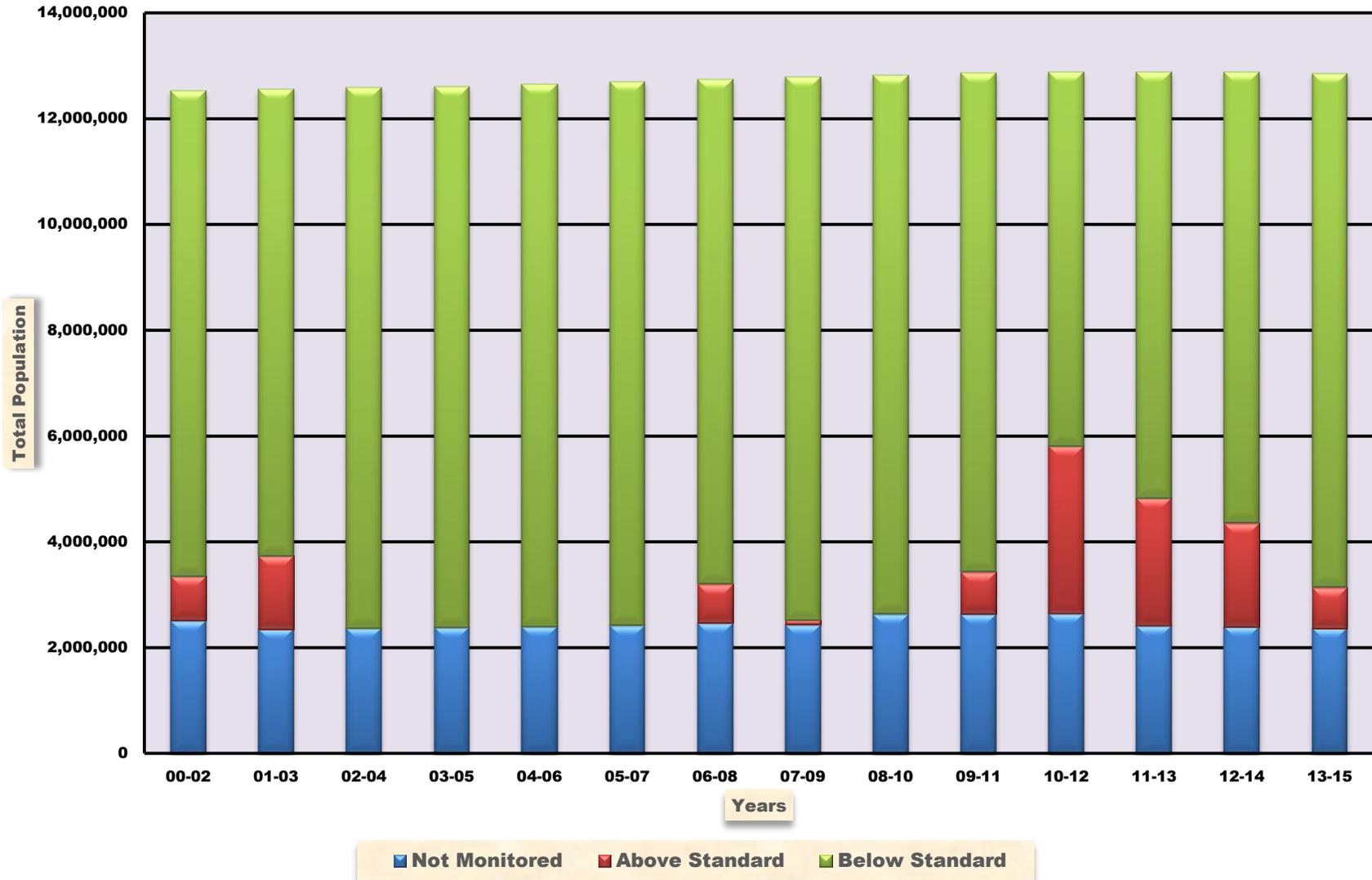


Figure IL-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Illinois

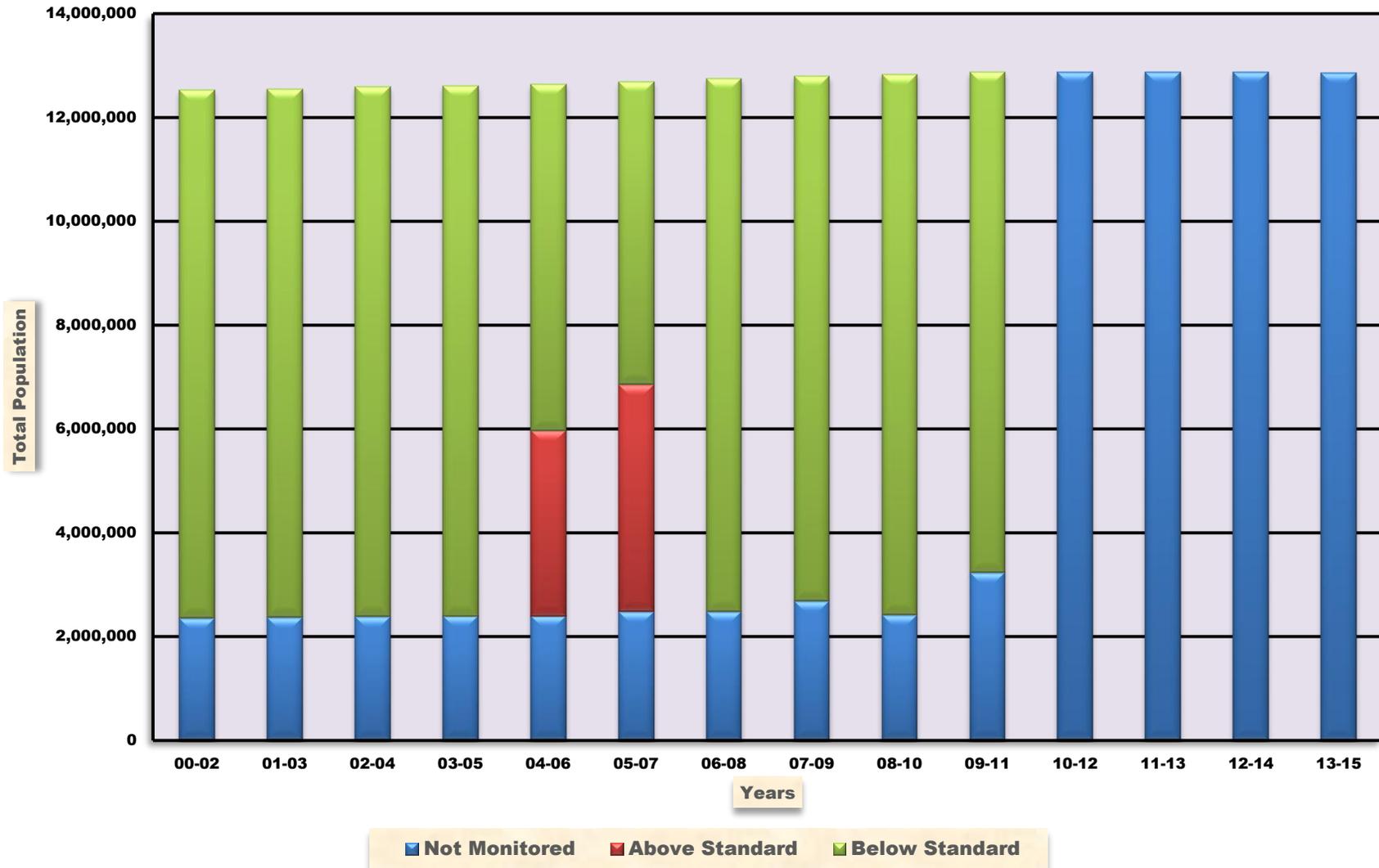
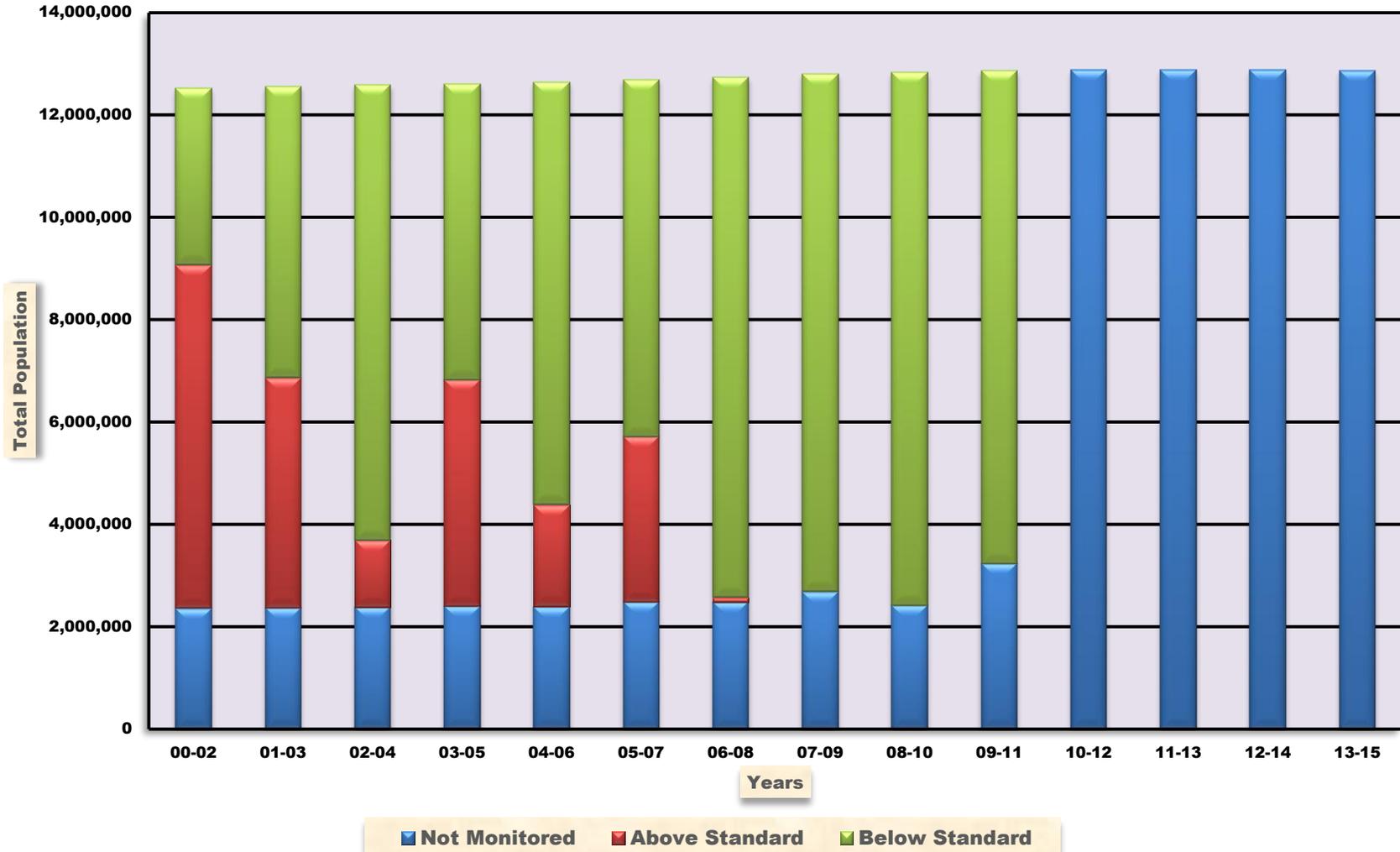


Figure IL-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Illinois



# INDIANA

## Ozone

Significant progress has been made in ozone levels in Indiana. In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 4.5 million people (67.2%). Figure IN-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 Indiana. In the 2000 – 2002 time period, approximately 2.1 million people (33.5%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.8 million people (57.1%) and the rest of the population lived in areas where PM-2.5 was not measured. Figure IN-2 shows the distribution of people by year.

## Annual PM-2.5

Significant progress has been made in annual PM-2.5 levels in Indiana. In the 2000 – 2002 time period, approximately 1.4 million people (23.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 3.8 million people (57.1%). Figure IN-3 shows the distribution of people by year.

**INDIANA**  
**Table IN-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Allen	368,450	0.061	B	Y	25	A	10.2	B	N
Boone	63,344	0.066	B	N	ND	--	ND	--	--
Carroll	19,856	0.064	B	N	ND	--	ND	--	--
Clark	115,371	0.069	C	N	22	A	9.3	A	N
Delaware	116,852	0.057	A	N	23	A	9.7	B	N
Dubois	42,461	ND	--	--	25	A	10.6	B	N
Elkhart	203,474	0.056	A	N	27	A	10.4	B	N
Floyd	76,778	0.066	B	N	22	A	10.0	B	N
Greene	32,441	0.066	B	N	23	A	9.5	A	N
Hamilton	309,697	0.061	B	N	ND	--	ND	--	--
Hancock	72,520	0.058	A	N	ND	--	ND	--	--
Hendricks	158,192	0.056	A	N	ND	--	ND	--	--
Henry	48,985	ND	--	--	22	A	9.1	B	N
Huntington	36,630	0.056	A	N	ND	--	ND	--	--
Jackson	44,069	0.063	B	N	ND	--	ND	--	--
Johnson	149,633	0.060	B	N	ND	--	ND	--	--
Knox	37,927	0.063	B	N	ND	--	ND	--	--
Lake	487,865	0.064	B	Y	25	A	10.7	B	Y
La Porte	110,884	0.065	B	Y	22	A	9.5	A	N
Madison	129,723	0.057	A	N	22	A	9.7	B	N
Marion	939,020	0.063	B	Y	25	A	11.3	C	Y
Monroe	144,705	ND	--	--	20	A	9.4	A	N
Morgan	69,648	0.064	B	N	ND	--	ND	--	Y
Perry	19,347	0.066	B	N	ND	--	ND	--	--
Porter	167,688	0.065	B	Y	22	A	9.8	B	N
Posey	25,512	0.065	B	N	ND	--	ND	--	--
St Joseph	268,441	0.062	B	Y	23	A	9.6	B	N
Shelby	44,478	0.062	B	N	ND	--	ND	--	--
Spencer	20,715	ND	--	--	23	A	10.1	B	N
Tippecanoe	185,826	ND	--	--	24	A	9.8	B	N
Vanderburgh	181,877	0.068	C	Y	24	A	10.6	B	Y
Vigo	107,896	0.061	B	Y	24	A	10.3	B	N
Wabash	32,138	0.067	B	N	ND	--	ND	--	--
Warrick	61,897	0.064	B	Y	ND	--	ND	--	--
Whitley	33,406	ND	--	--	22	A	9.3	A	N
<b>Subtotal</b>	<b>4,927,746</b>								
Not Monitored	1,691,934								
<b>Total</b>	<b>6,619,680</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table IN-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.086	36	15.5
2001 – 2003	0.086	36	15.2
2002 – 2004	0.083	34	14.4
2003 – 2005	0.077	35	14.8
2004 – 2006	0.074	33	14.2
2005 – 2007	0.078	34	14.3
2006 – 2008	0.073	30	13.2
2007 – 2009	0.071	29	12.8
2008 - 2010	0.066	29	12.3
2009 – 2011	0.067	28	12.1
2010 – 2012	0.071	28	12.0
2011 – 2013	0.070	24	10.7
2012 - 2014	0.067	25	10.6
2013 - 2015	0.062	24	10.4

# INDIANA

## Table IN-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	88,977	0	0	0	71,978	806,871
B	0	0	0	160,781	141,666	53,443	131,537	622,582	2,925,391	1,936,762	705,918	790,747	2,321,562	3,208,243
C	0	0	139,888	523,515	2,611,995	560,066	2,833,363	2,907,703	1,276,613	2,207,650	3,324,068	3,272,236	1,990,803	0
D	336,195	555,100	1,224,054	2,799,659	1,751,273	3,282,362	1,186,522	692,557	0	0	220,174	221,963	55,722	0
F	3,661,236	3,410,496	2,682,843	598,900	0	270,140	0	0	0	0	55,623	55,641	0	0
Subtotal	3,997,431	3,965,646	4,046,785	4,082,855	4,504,934	4,166,010	4,201,422	4,222,842	4,290,981	4,144,412	4,305,783	4,340,586	4,440,065	4,451,648
NM	2,158,536	2,231,042	2,186,222	2,195,761	1,827,735	2,213,589	2,223,384	2,236,483	2,192,821	2,372,510	2,231,551	2,230,315	2,156,790	2,168,032
Total	6,155,967	6,196,638	6,233,007	6,278,616	6,332,669	6,379,599	6,424,806	6,459,325	6,483,802	6,516,922	6,537,334	6,570,902	6,596,855	6,619,680

## 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	2011-2013	2012-2014	2013-2015
A	48,258	0	0	0	53,099	0	54,309	+65,019	1,322,253	1,984,732	2,041,292	3,630,112	3,372,884	3,782,858
B	282,122	68,674	805,129	20,896	939,795	496,235	2,544,254	2,076,175	2,349,907	1,860,142	1,595,905	98,291	398,062	0
C	1,733,725	1,601,353	2,211,629	1,788,321	1,844,126	1,824,861	1,027,975	750,798	95,578	0	0	0	0	0
D	948,579	1,346,268	349,670	1,575,391	712,717	765,847	0	0	0	0	0	0	0	0
F	469,029	478,332	139,259	139,856	0	484,354	0	0	0	0	0	0	0	0
Subtotal	3,481,713	3,494,627	3,505,687	3,524,474	3,569,737	3,871,296	3,626,538	3,782,995	3,767,738	3,844,874	3,737,197	3,728,403	3,770,946	3,782,858
NM	2,674,254	2,702,011	2,727,320	2,754,142	2,762,932	2,608,303	2,798,268	2,678,330	2,716,064	2,672,048	2,800,137	2,842,499	2,825,909	2,836,822
Total	6,155,967	6,196,638	6,233,007	6,278,616	6,332,669	6,379,599	6,424,806	6,459,325	6,483,802	6,516,922	6,537,334	6,570,902	6,596,855	6,619,680

## 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	33,290	194,018	790,069	1,957,183	2,252,934	2,682,307	0	139,529	485,792
B	103,036	183,057	451,273	353,853	1,144,686	638,592	1,957,594	1,938,830	1,153,178	1,536,155	1,021,950	1,893,203	2,088,873	2,195,424
C	1,317,105	2,018,306	2,390,802	2,355,711	1,949,498	2,349,713	1,421,223	1,052,085	857,377	55,785	0	1,778,731	1,542,544	1,101,642
D	1,524,300	1,086,432	613,394	733,321	455,567	530,155	53,703	0	0	0	0	56,469	0	0
F	537,274	206,832	50,218	81,588	0	52,836	0	0	0	0	0	0	0	0
Subtotal	3,481,713	3,494,627	3,505,687	3,524,473	3,549,738	3,604,585	3,626,538	3,780,992	3,767,738	3,844,874	3,704,257	3,728,403	3,770,946	3,782,858
NM	2,674,252	2,702,011	2,727,320	2,754,143	2,782,931	2,775,014	2,798,268	2,678,333	2,716,064	2,672,048	2,833,077	2,842,499	2,825,909	2,836,822
Total	6,155,967	6,196,638	6,233,007	6,278,616	6,332,669	6,379,599	6,424,806	6,459,325	6,483,802	6,516,922	6,537,334	6,570,902	6,596,855	6,619,680

NM = Not Monitored

Figure IN-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Indiana

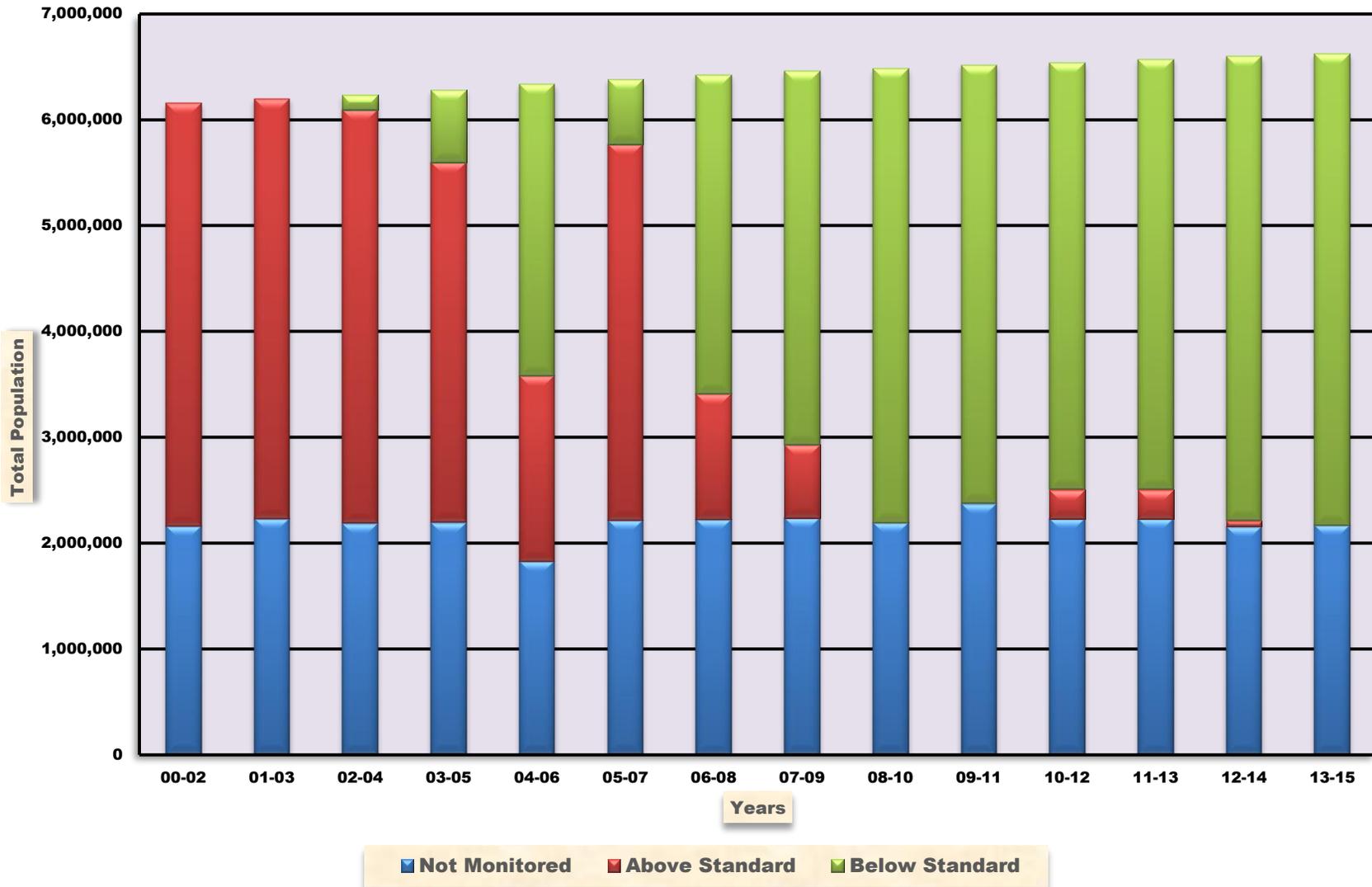


Figure IN-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Indiana

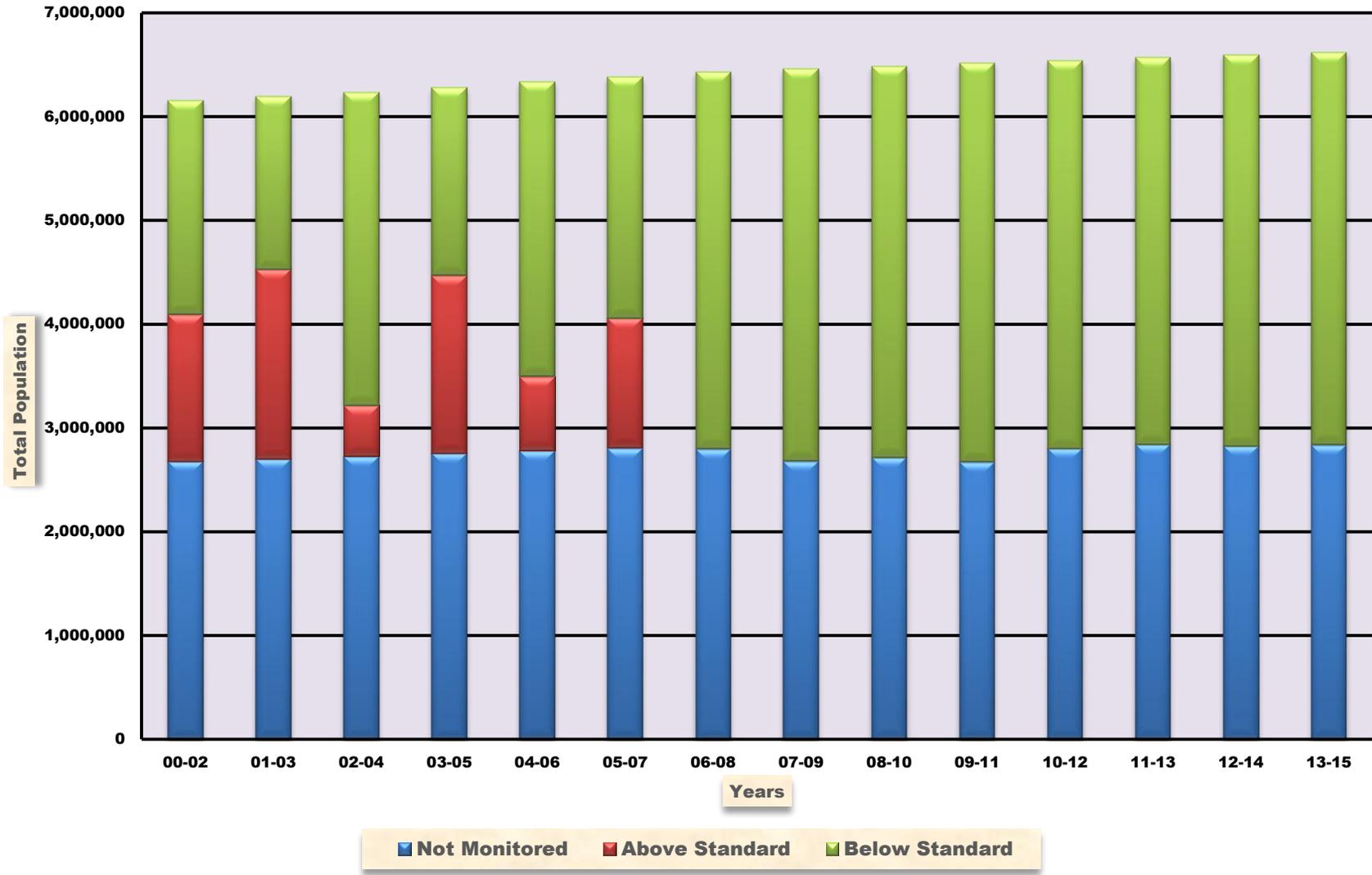
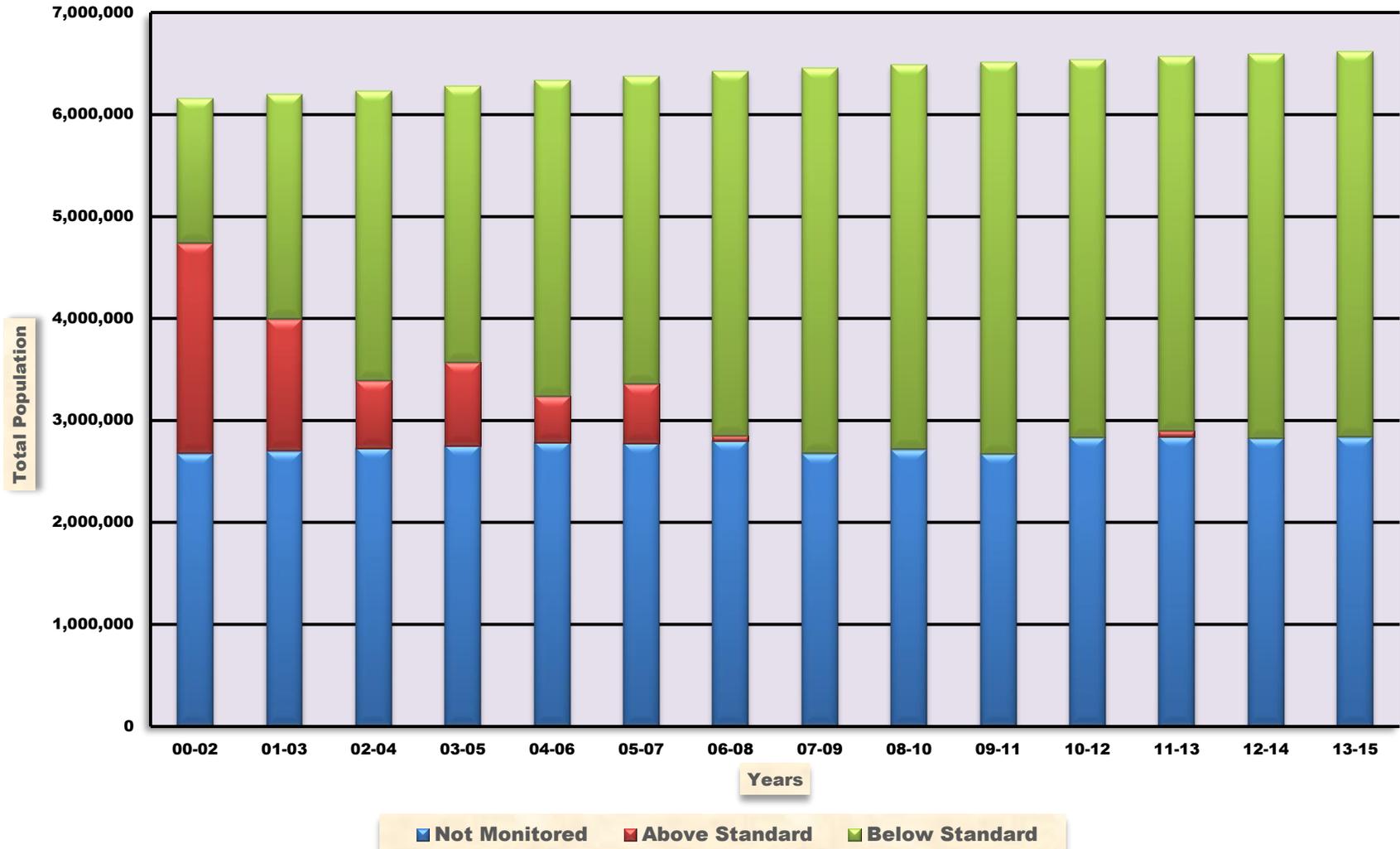


Figure IN-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Indiana



## IOWA

### Ozone

In the 2000 – 2002 time period, approximately 0.7 million people (25.4%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 1.1 million people (35.6%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure IA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.069 ppm. By 2013 – 2015 this had lowered to a value of 0.059 ppm, a reduction of 14.5 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.4 million people (46.5%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.5 million people (48.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standards was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure IA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 28  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 22  $\mu\text{g}/\text{m}^3$ , a reduction of 21.4 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.4 million people (46.5%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 1.5 million people (48.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure IA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 10.9  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.9  $\mu\text{g}/\text{m}^3$ , a reduction of 18.3 percent.

**Table IA-1  
2013 – 2015**

County	Population	Ozone			Particle Pollution (PM-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Black Hawk	133,455	ND	--	--	20	A	9.1	A	N
Bremer	24,722	0.060	B	N	ND	--	ND	--	--
Clinton	47,768	0.062	B	N	25	A	9.8	B	Y
Delaware	17,403	ND	--	--	22	A	8.7	A	N
Harrison	14,265	0.062	B	N	ND	--	ND	--	--
Johnson	144,251	ND	--	--	22	A	8.8	A	N
Lee	35,089	ND	--	--	25	A	10.0	B	N
Linn	219,916	0.059	B	N	24	A	9.4	A	N
Montgomery	10,234	0.059	B	N	19	A	7.6	A	N
Muscatine	43,011	ND	--	--	26	A	9.9	B	Y
Palo Alto	9,133	0.063	B	N	19	A	7.8	A	N
Polk	467,711	0.059	B	N	20	A	8.3	A	Y
Pottawattamie	93,671	ND	--	--	20	A	9.0	A	N
Scott	172,126	0.060	B	N	25	A	9.7	B	Y
Story	96,021	0.060	B	N	ND	--	ND	--	--
Van Buren	7,344	0.061	B	N	20	A	8.1	A	N
Warren	48,626	0.059	B	N	ND	--	ND	--	--
Woodbury	102,782	ND	--	--	22	A	8.4	A	N
<b>Subtotal</b>	<b>1,687,528</b>								
Not Monitored	1,436,371								
<b>Total</b>	<b>3,123,899</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table IA-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.069	28	10.9
2001 – 2003	0.065	29	11.1
2002 – 2004	0.063	29	10.8
2003 – 2005	0.065	31	11.1
2004 – 2006	0.066	29	10.7
2005 – 2007	0.069	29	11.3
2006 – 2008	0.065	27	10.8
2007 – 2009	0.063	28	10.7
2008 - 2010	0.059	29	10.5
2009 – 2011	0.060	28	10.4
2010 – 2012	0.064	27	10.3
2011 – 2013	0.063	23	9.7
2012 - 2014	0.063	23	9.4
2013 - 2015	0.059	22	8.9

# IOWA

**Table IA-3  
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	2011-2013	2012-2014	2013-2015
A	317,558	522,280	760,488	770,397	790,095	120,354	9,486	9,510	520,182	437,399	0	0	0	0
B	227,095	322,609	230,720	231,018	224,430	493,975	506,317	1,041,480	538,726	633,058	1,000,880	1,029,584	1,105,113	1,101,601
C	223,166	128,609	0	0	0	0	104,279	0	0	0	79,989	62,851	0	16,266
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	767,819	973,498	991,208	1,001,415	1,014,525	614,329	620,082	1,050,990	1,058,908	1,070,457	1,080,869	1,092,435	1,105,113	1,117,866
NM	2,166,415	1,968,501	1,962,427	1,963,039	1,968,119	2,384,883	2,396,652	1,981,880	1,987,447	1,991,852	1,993,317	1,997,981	2,002,013	2,006,033
Total	2,934,234	2,941,999	2,953,635	2,964,454	2,982,644	2,999,212	3,016,734	3,032,870	3,046,355	3,062,309	3,074,186	3,090,416	3,107,126	3,123,899

**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	2011-2013	2012-2014	2013-2015
A	1,366,876	1,332,316	1,295,248	1,312,376	303,638	216,089	747,834	683,510	372,077	696,616	894,436	1,525,540	1,479,483	1,493,141
B	0	0	0	0	808,421	817,361	503,135	617,566	949,955	723,115	536,951	10,709	10,726	10,753
C	0	0	0	0	213,858	227,242	121,108	79,101	55,075	14,272	14,293	0	0	0
D	0	0	0	0	0	95,684	0	42,783	42,745	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,366,876	1,332,316	1,295,248	1,312,376	1,325,967	1,356,376	1,372,077	1,422,960	1,419,846	1,434,003	1,445,680	1,536,249	1,490,209	1,503,894
NM	1,567,358	1,609,683	1,658,387	1,652,078	1,656,677	1,642,836	1,644,657	1,609,910	1,626,509	1,628,306	1,628,506	1,554,167	1,616,917	1,620,005
Total	2,934,234	2,941,999	2,953,635	2,964,454	2,982,644	2,999,212	3,016,784	3,032,870	3,046,355	3,062,309	3,074,186	3,090,416	3,107,126	3,123,899

**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	2011-2013	2012-2014	2013-2015
A	1,159,131	1,083,029	1,253,490	1,021,436	1,234,335	1,033,450	1,250,969	1,301,076	1,297,468	1,349,761	1,431,387	658,386	905,729	1,297,912
B	207,745	249,287	41,758	290,941	91,632	269,567	96,456	67,357	122,378	84,242	14,293	743,248	527,743	205,982
C	0	0	0	0	0	53,359	24,652	54,527	0	0	0	134,615	56,738	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,366,876	1,332,316	1,295,248	1,312,376	1,325,967	1,356,376	1,372,077	1,422,960	1,419,846	1,434,003	1,445,680	1,536,249	1,490,209	1,503,894
NM	1,567,358	1,609,683	1,658,387	1,652,078	1,656,677	1,642,836	1,644,657	1,609,910	1,626,509	1,628,306	1,628,506	1,554,167	1,616,917	1,620,005
Total	2,934,234	2,941,999	2,953,635	2,964,454	2,982,644	2,999,212	3,016,784	3,032,870	3,046,355	3,062,309	3,074,186	3,090,416	3,107,126	3,123,899

NM = Not Monitored

Figure IA-1

People Breathing Various Air Quality Levels - 8 Hour Ozone  
Iowa

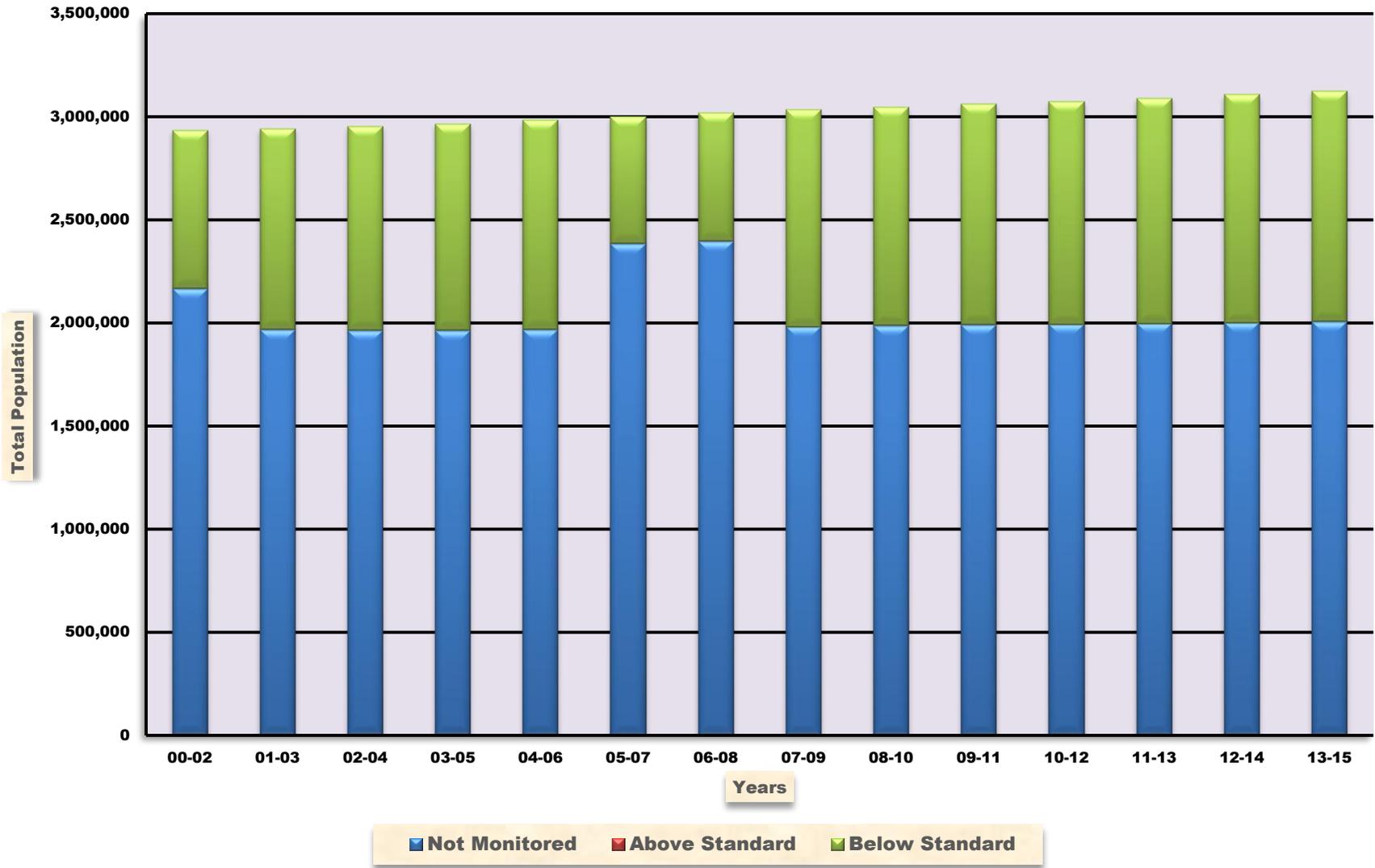


Figure IA-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Iowa

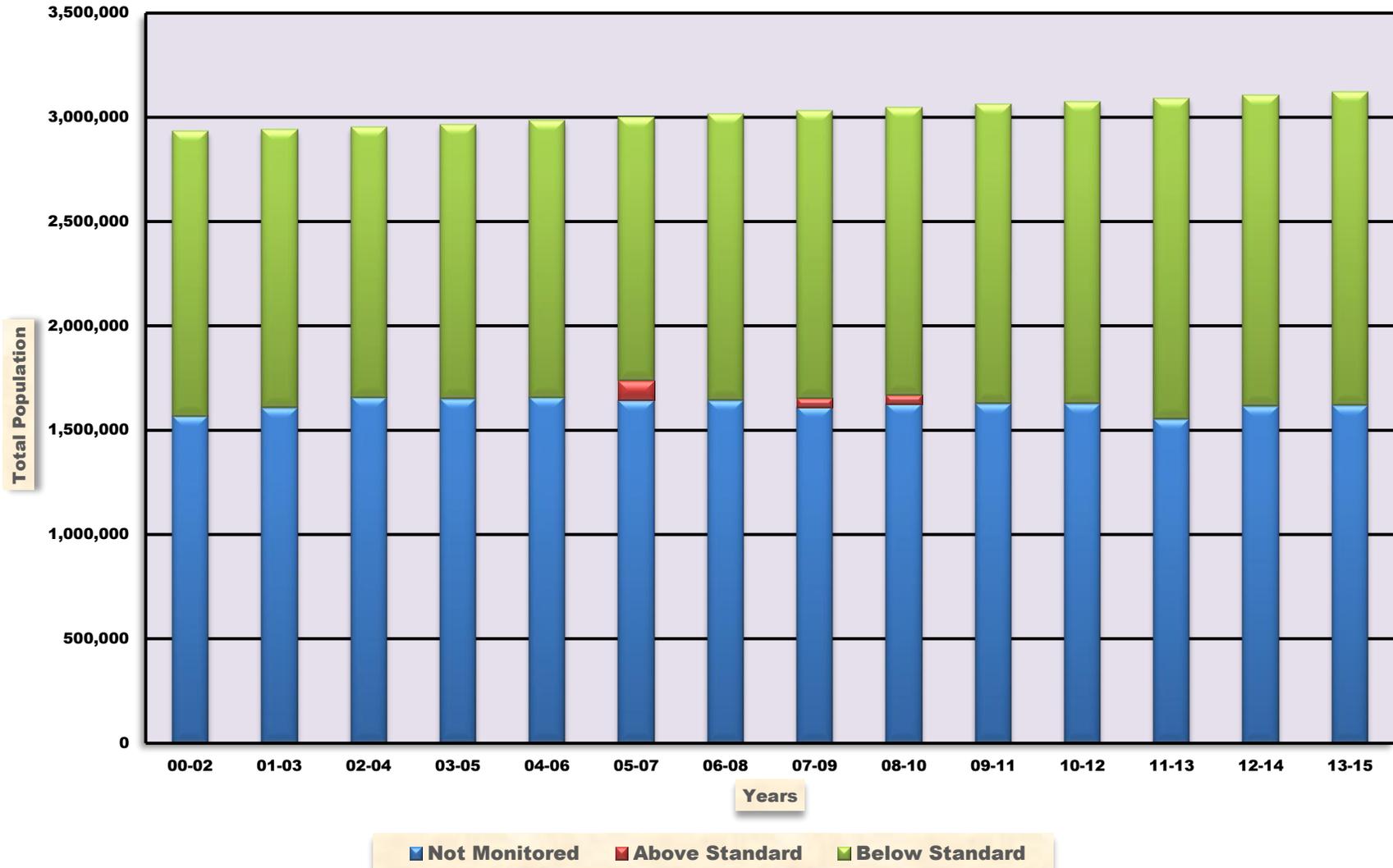
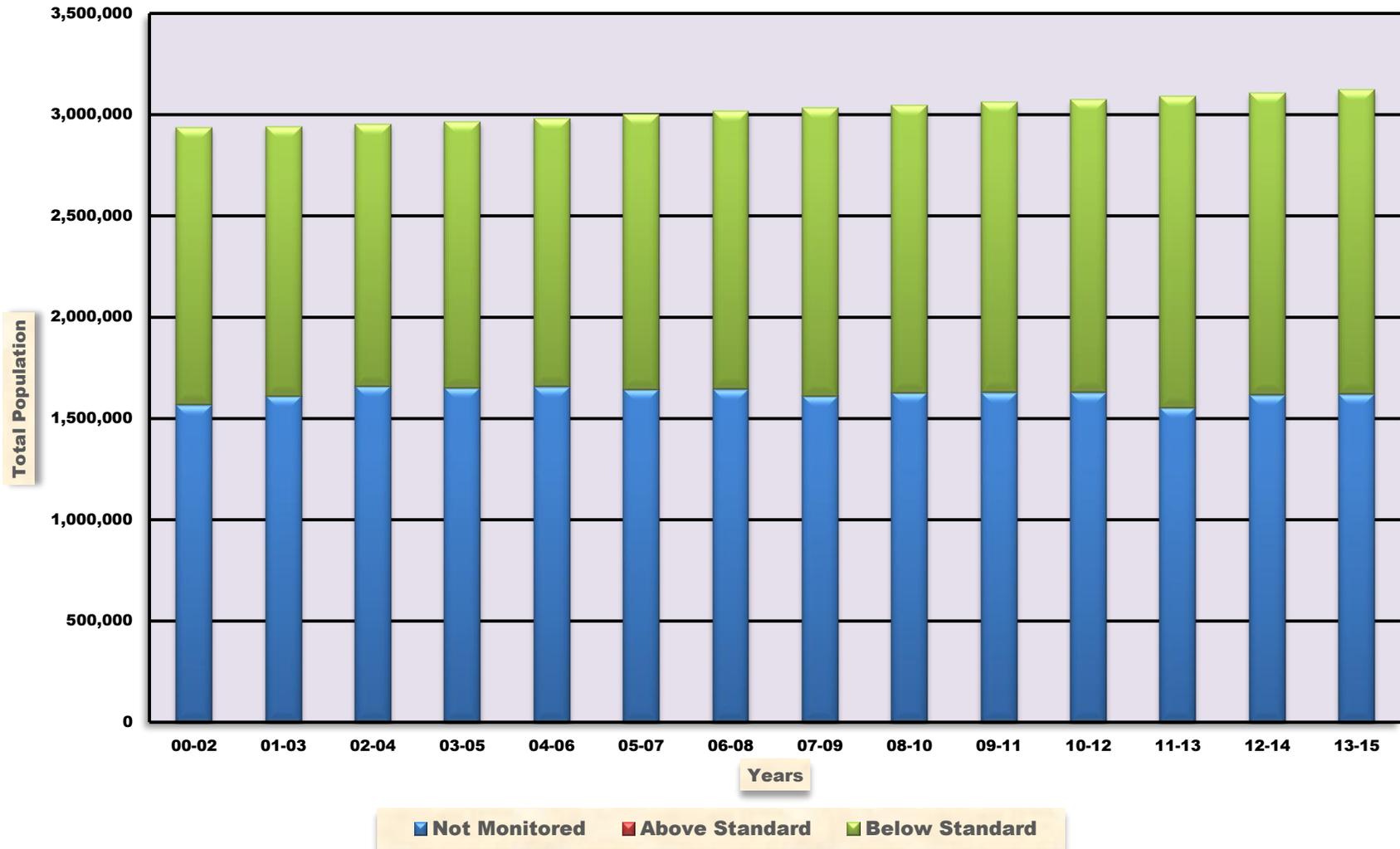


Figure IA-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Iowa



# KANSAS

## Ozone

In the 2000 – 2002 time period, approximately 657 thousand people (24.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 880,000 people (30.2%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure KS-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.077 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 16.9 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.3 million people (48.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.5 million people (50.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure KS-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 26 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 20 µg/m<sup>3</sup>, a reduction of 23.1 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.3 million people (48.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 1.5 million people (50.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure KS-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 11.5 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 8.1 µg/m<sup>3</sup>, a reduction of 29.6 percent.

**Table KS-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Johnson	580,159	0.062	B	N	17	A	7.4	A	Y
Leavenworth	79,315	0.064	C	N	ND	--	ND	--	--
Sedgwick	511,574	0.067	C	Y	23	A	8.6	A	Y
Shawnee	178,725	0.064	C	N	20	A	8.0	A	N
Sumner	23,535	0.067	C	N	22	A	7.7	A	N
Trego	2,927	0.066	C	N	ND	--	ND	--	--
Wyandotte	163,369	0.064	C	N	20	A	9.1	A	N
<b>Subtotal</b>	<b>1,539,604</b>								
Not Monitored	1,372,037								
<b>Total</b>	<b>2,911,641</b>								

DV = Design Value

ND = No Data

**Table KS-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.077	26	11.5
2001 – 2003	0.076	27	11.5
2002 – 2004	0.071	27	11.1
2003 – 2005	0.073	28	11.1
2004 – 2006	0.071	24	10.2
2005 – 2007	0.072	24	10.2
2006 – 2008	0.067	21	9.5
2007 – 2009	0.065	21	9.6
2008 - 2010	0.065	19	8.8
2009 – 2011	0.069	20	8.8
2010 – 2012	0.075	19	8.5
2011 – 2013	0.074	20	8.6
2012 - 2014	0.071	20	8.4
2013 - 2015	0.064	20	8.1

# KANSAS

**Table KS-3  
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	2011-2013	2012-2014	2013-2015
A	3,137	3,097	235,131	233,557	235,830	239,240	0	0	0	0	0	0	0	0
B	240,234	240,996	421,861	425,765	427,016	276,359	486,077	840,862	597,279	167,836	159,129	0	0	0
C	413,508	412,745	0	0	0	154,267	192,004	24,160	273,315	806,734	191,418	604,419	875,275	880,130
D	0	0	0	0	0	0	0	0	0	0	527,563	276,299	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	656,879	656,838	656,991	659,321	662,845	669,865	678,081	865,022	870,593	974,570	878,110	880,717	875,275	880,130
NM	2,056,656	2,066,166	2,077,382	2,085,978	2,100,086	2,113,920	2,129,995	1,967,682	1,982,525	1,896,668	2,007,795	2,013,240	2,028,746	2,031,511
Total	2,713,535	2,723,004	2,734,373	2,745,299	2,762,931	2,783,785	2,808,076	2,832,704	2,853,118	2,871,238	2,885,905	2,893,957	2,904,021	2,911,641

**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	2011-2013	2012-2014	2013-2015
A	1,299,330	1,310,284	1,320,645	1,332,630	1,270,809	1,113,640	1,207,313	1,401,433	1,411,771	1,424,631	1,435,037	1,444,670	1,446,645	1,457,362
B	0	0	0	0	76,845	77,134	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,299,330	1,310,284	1,320,645	1,332,630	1,347,653	1,190,773	1,207,313	1,401,433	1,411,771	1,424,631	1,435,037	1,444,670	1,446,643	1,457,362
NM	1,414,205	1,412,720	1,413,728	1,412,669	1,415,278	1,593,012	1,600,763	1,431,271	1,441,347	1,446,607	1,450,868	1,449,287	1,457,376	1,454,279
Total	2,713,535	2,723,004	2,734,373	2,745,299	2,762,931	2,783,785	2,808,076	2,882,704	2,853,118	2,871,238	2,885,905	2,893,957	2,904,021	2,911,641

**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	2011-2013	2012-2014	2013-2015
A	1,062,168	957,906	1,243,208	1,255,452	1,270,809	1,113,640	1,207,313	1,401,433	1,411,771	1,424,631	1,435,037	1,284,286	1,446,645	1,457,362
B	237,162	196,102	77,437	77,178	76,845	77,134	0	0	0	0	0	160,384	0	0
C	0	156,276	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,299,330	1,310,284	1,320,645	1,332,630	1,347,653	1,190,773	1,207,313	1,401,433	1,411,771	1,424,631	1,435,037	1,444,670	1,446,645	1,457,362
NM	1,414,205	1,412,720	1,413,728	1,412,669	1,415,278	1,593,012	1,600,763	1,431,271	1,441,347	1,446,607	1,450,868	1,449,287	1,457,376	1,454,279
Total	2,713,535	2,723,004	2,734,373	2,745,299	2,762,931	2,783,785	2,808,076	2,882,704	2,853,118	2,871,238	2,885,905	2,893,957	2,904,021	2,911,641

NM = Not Monitored

Figure KS-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Kansas

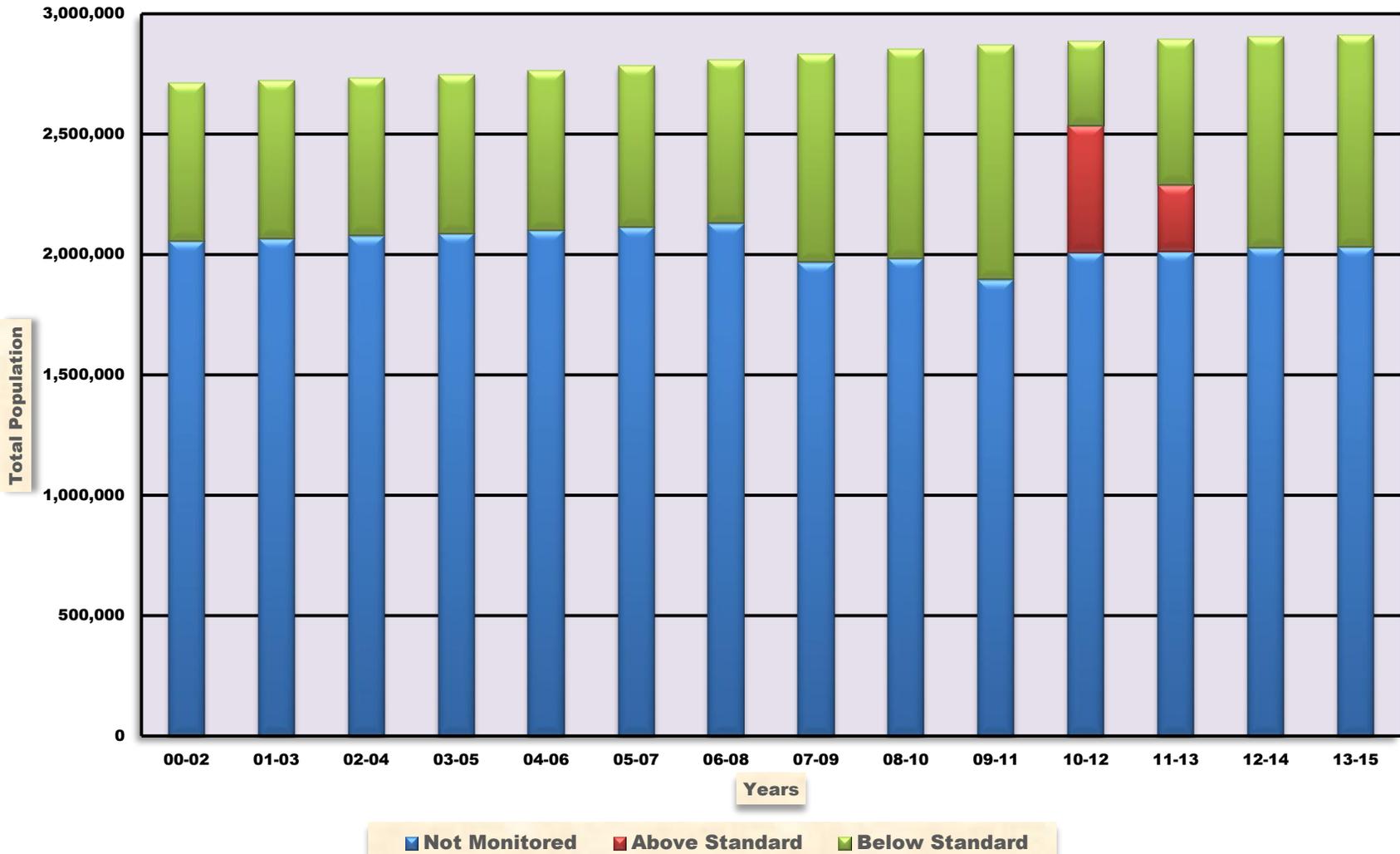


Figure KS-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Kansas

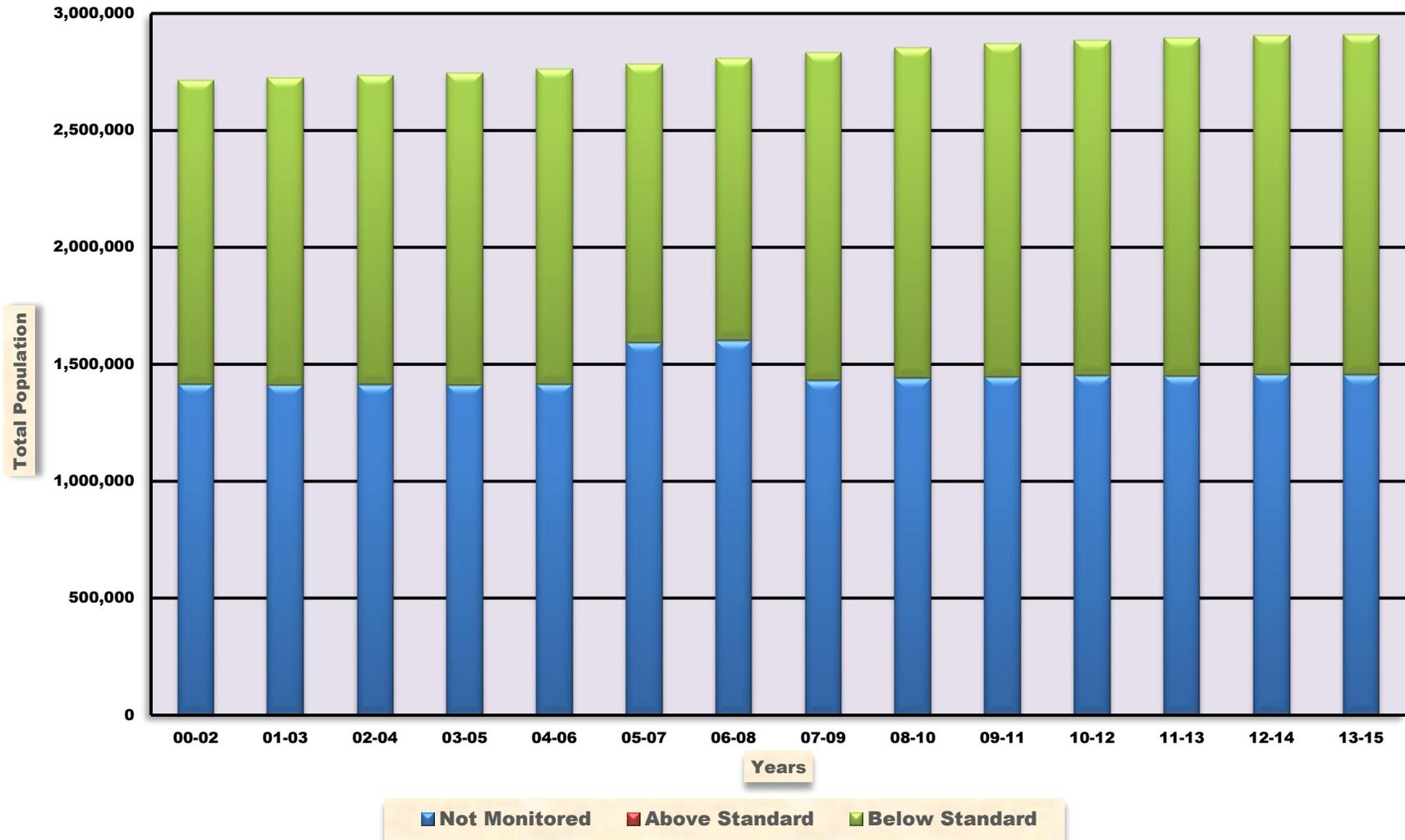
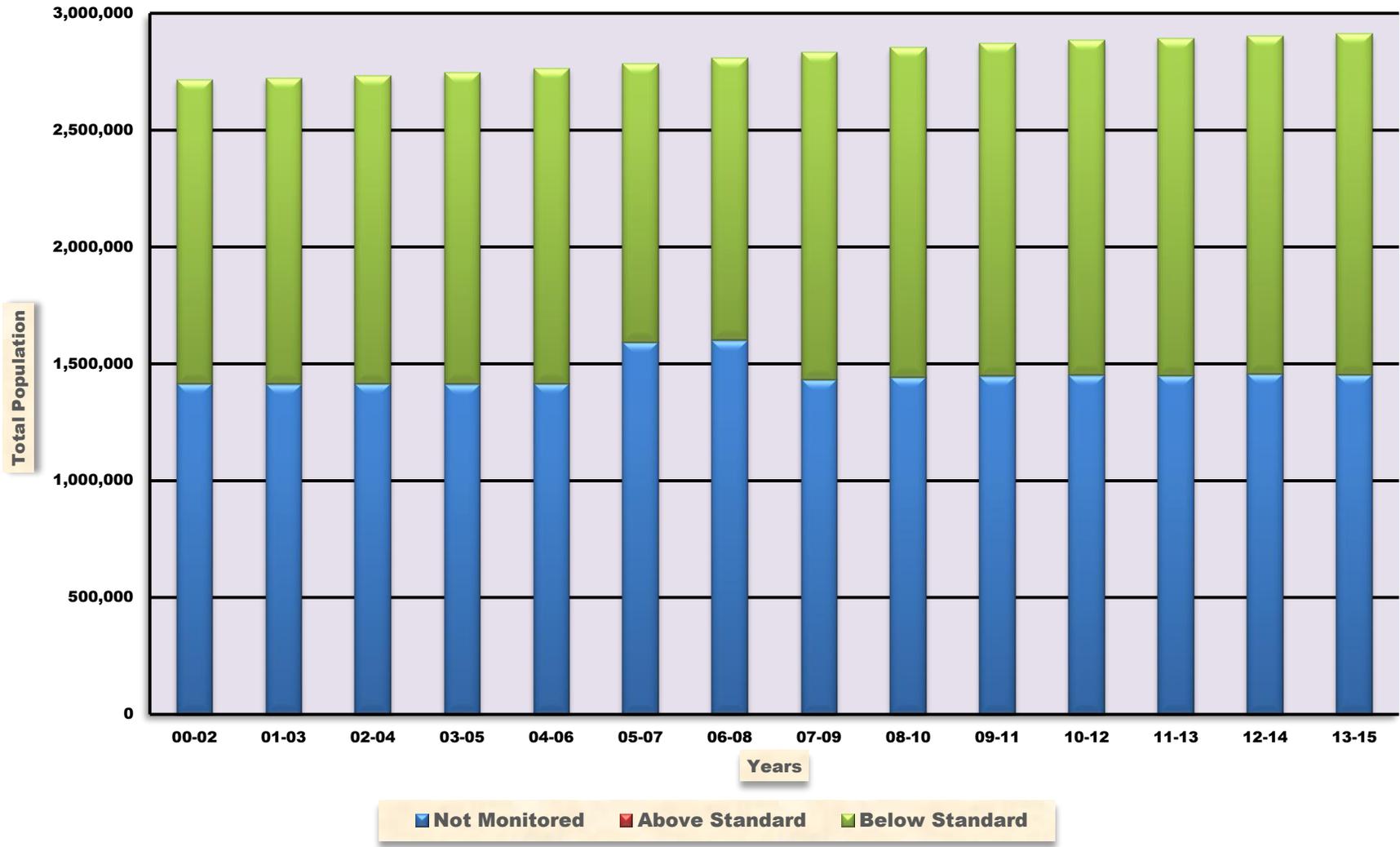


Figure KS-3

**People Breathing Various Air Quality Levels - Annual PM-2.5  
Kansas**



# KENTUCKY

## Ozone

In the 2000 – 2002 time period, approximately 1.9 million people (45.4%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.3 million people (51.8%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure KY-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.082 ppm. By 2013 – 2015 this had lowered to a value of 0.065 ppm, a reduction of 20.7 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.8 million people (45.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.9 million people (43.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure KY-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 36 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 21 µg/m<sup>3</sup>, a reduction of 41.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.4 million people (33.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 1.9 million people (43.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure KY-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.6 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.4 µg/m<sup>3</sup>, a reduction of 39.7 percent.

# KENTUCKY

**Table KY-1  
2013 – 2015**

County	Population	Ozone			Particle Pollution (Pm-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bell	27,337	0.059	B	N	18	A	8.9	A	N
Boone	127,712	0.061	B	N	ND	--	ND	--	--
Boyd	48,325	0.068	C	N	21	A	9.1	A	N
Bullitt	78,702	0.065	C	N	ND	--	ND	--	--
<b>Campbell</b>	<b>92,066</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	<b>22</b>	<b>A</b>	<b>9.6</b>	<b>B</b>	<b>N</b>
Carter	27,158	0.061	B	N	18	A	7.6	A	N
Christian	73,309	0.063	C	N	22	A	9.7	B	N
Daviess	99,259	0.065	C	N	23	A	10.3	B	N
Edmonson	12,007	0.067	C	N	ND	--	ND	--	--
Fayette	314,488	0.065	C	N	20	A	9.1	A	N
Greenup	36,068	0.062	B	N	ND	--	ND	--	--
Hancock	8,692	0.066	C	N	ND	--	ND	--	--
Hardin	106,439	0.063	C	N	22	A	9.8	B	N
Henderson	46,407	0.067	C	N	22	A	10.3	B	N
Jefferson	763,623	0.067	C	Y	22	A	9.8	B	Y
Jessamine	51,961	0.063	C	N	ND	--	ND	--	--
Livingston	9,316	0.064	C	N	ND	--	ND	--	--
Madison	87,824	ND	--	--	17	A	8.1	A	N
McCracken	65,018	0.064	C	N	ND	--	ND	--	--
Morgan	13,275	0.062	B	N	ND	--	ND	--	--
Oldham	64,875	0.068	C	N	ND	--	ND	--	--
Perry	27,565	0.058	B	N	ND	--	ND	--	--
Pike	61,792	0.058	B	N	17	A	8.0	A	Y
Pulaski	63,782	0.062	B	N	20	A	8.7	A	N
Simpson	18,006	0.063	C	N	ND	--	ND	--	--
Trigg	14,233	0.063	C	N	ND	--	ND	--	--
Warren	122,851	0.061	B	N	20	A	9.2	A	N
Washington	12,063	0.064	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>2,474,153</b>								
Not Monitored	1,950,939								
<b>Total</b>	<b>4,425,092</b>								

**DV = Design Value**

**ND = No Data**

**MM = Multiple Monitors**

**Table KY-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.082	36	15.6
2001 – 2003	0.080	35	15.0
2002 – 2004	0.077	33	14.2
2003 – 2005	0.077	33	14.3
2004 – 2006	0.073	32	14.1
2005 – 2007	0.076	34	14.4
2006 – 2008	0.074	30	13.4
2007 – 2009	0.072	28	12.7
2008 - 2010	0.070	25	12.1
2009 – 2011	0.071	25	11.6
2010 – 2012	0.076	23	10.7
2011 – 2013	0.073	21	9.9
2012 - 2014	0.069	20	9.6
2013 - 2015	0.065	21	9.4

# KENTUCKY

**Table KY-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	38,051	203,489	205,618	141,646	0	0	0	0	0	0	0	0
B	181,412	508,120	1,250,072	1,720,042	1,612,222	1,026,998	0	203,753	447,486	499,923	28,183	365,999	947,435	507,540
C	1,674,067	1,677,931	968,161	418,377	450,269	1,127,164	1,325,582	1,601,987	1,845,115	1,379,829	1,045,051	1,062,851	1,308,420	1,786,723
D	394,992	139,555	137,524	0	0	0	994,520	464,584	0	434,095	810,046	802,472	0	92,066
F	27,262	0	0	0	0	0	0	0	0	0	311,688	0	0	0
Subtotal	2,277,733	2,325,606	2,393,808	2,341,908	2,268,108	2,295,807	2,320,102	2,270,324	2,292,601	2,313,847	2,194,968	2,231,322	2,255,855	2,386,329
NM	1,812,142	1,791,564	1,752,293	1,840,834	1,951,131	1,960,865	1,969,776	2,046,750	2,046,766	2,055,509	2,185,447	2,163,975	2,157,602	2,038,763
Total	4,089,875	4,117,170	4,146,101	4,182,742	4,219,239	4,256,672	4,289,878	4,317,074	4,339,367	4,369,356	4,380,415	4,395,295	4,413,457	4,425,092

## 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	2011-2013	2012-2014	203-2015
A	1,844,029	2,025,885	2,092,991	2,016,176	0	28,794	260,679	1,193,423	1,607,165	1,838,128	1,042,417	979,282	1,047,920	1,934,660
B	0	0	0	0	947,592	678,600	1,079,932	556,791	494,064	186,727	0	0	0	0
C	0	0	0	0	450,025	715,938	365,097	245,568	0	0	0	0	0	0
D	0	0	0	0	357,575	180,760	182,549	0	0	0	0	0	0	0
F	0	0	0	0	178,787	361,520	0	0	0	0	0	0	0	0
Subtotal	1,844,029	2,025,885	2,092,991	2,016,176	1,933,978	1,965,612	1,888,256	1,995,782	2,101,229	2,024,854	1,042,417	979,282	1,047,920	1,934,660
NM	2,245,846	2,091,285	2,053,110	2,166,566	2,285,261	2,291,060	2,401,622	2,321,292	2,238,138	2,344,502	3,337,998	3,416,013	3,365,537	2,490,432
Total	4,089,875	4,117,170	4,146,101	4,182,742	4,219,239	4,256,672	4,289,878	4,317,074	4,339,367	4,369,356	4,380,415	4,395,295	4,413,457	4,425,092

## 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	278,941	0	109,273	256,682	1,142,908	1,105,605	1,042,417	176,172	628,829	753,557
B	27,262	102,502	606,615	433,029	823,515	259,295	976,051	1,247,963	958,321	919,249	0	596,701	419,091	1,181,103
C	556,314	1,084,461	956,255	1,022,867	831,523	983,277	802,932	491,137	0	0	0	206,409	0	0
D	793,913	604,265	530,121	532,514	0	723,040	0	0	0	0	0	0	0	0
F	466,540	234,657	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,844,029	2,025,885	2,092,991	2,016,176	1,933,978	1,965,612	1,888,256	1,995,782	2,101,229	2,024,854	1,042,417	978,282	1,047,920	1,934,660
NM	2,245,846	2,091,285	2,053,110	2,166,566	2,285,261	2,291,060	2,401,622	2,321,292	2,238,138	2,344,502	3,337,998	3,416,013	3,365,537	2,490,432
Total	4,089,875	4,117,170	4,146,101	4,182,742	4,219,239	4,256,672	4,289,878	4,317,074	4,339,367	4,369,356	4,380,415	4,395,295	4,413,457	4,425,092

NM = Not Monitored

Figure KY-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Kentucky

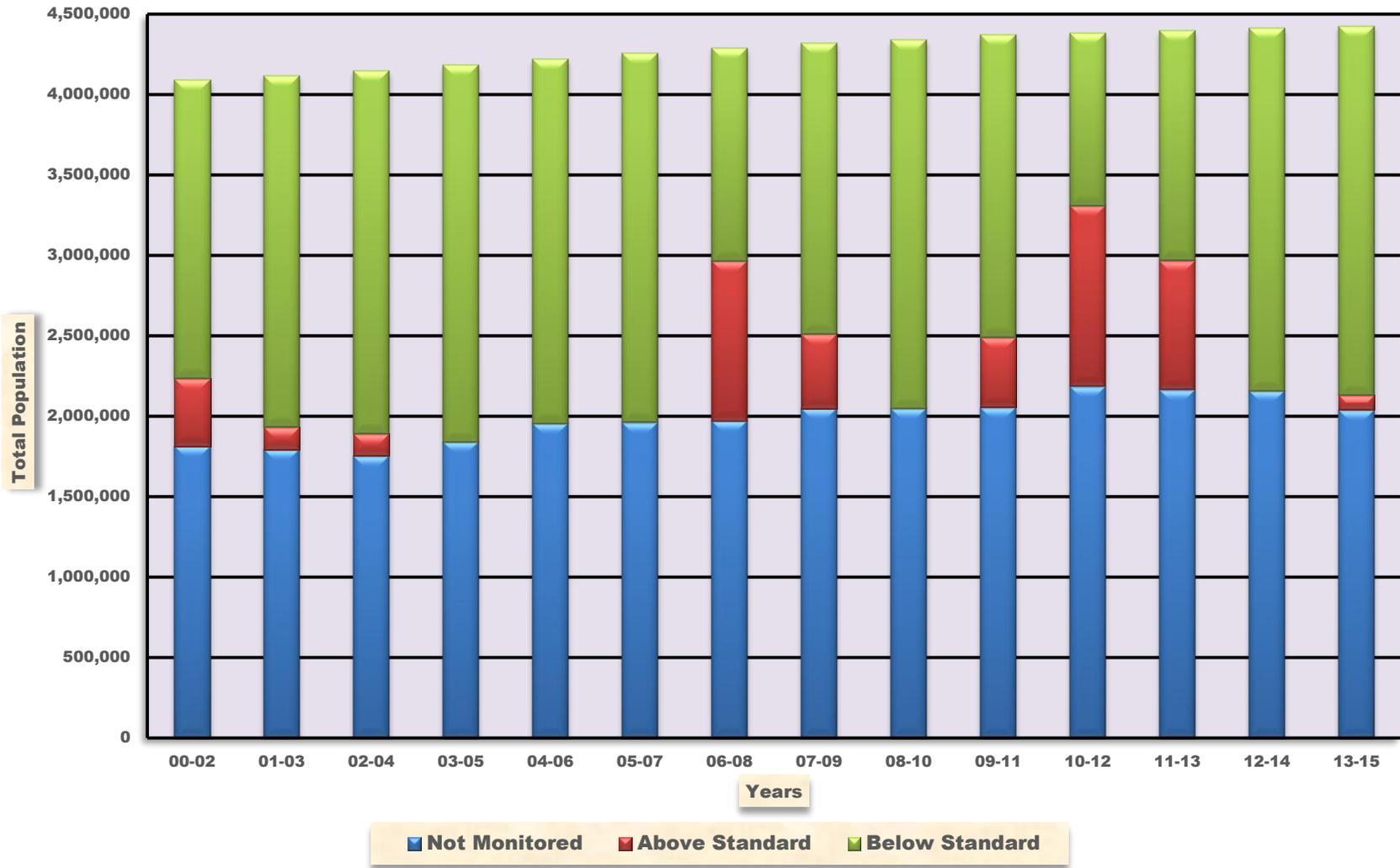


Figure KY-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Kentucky**

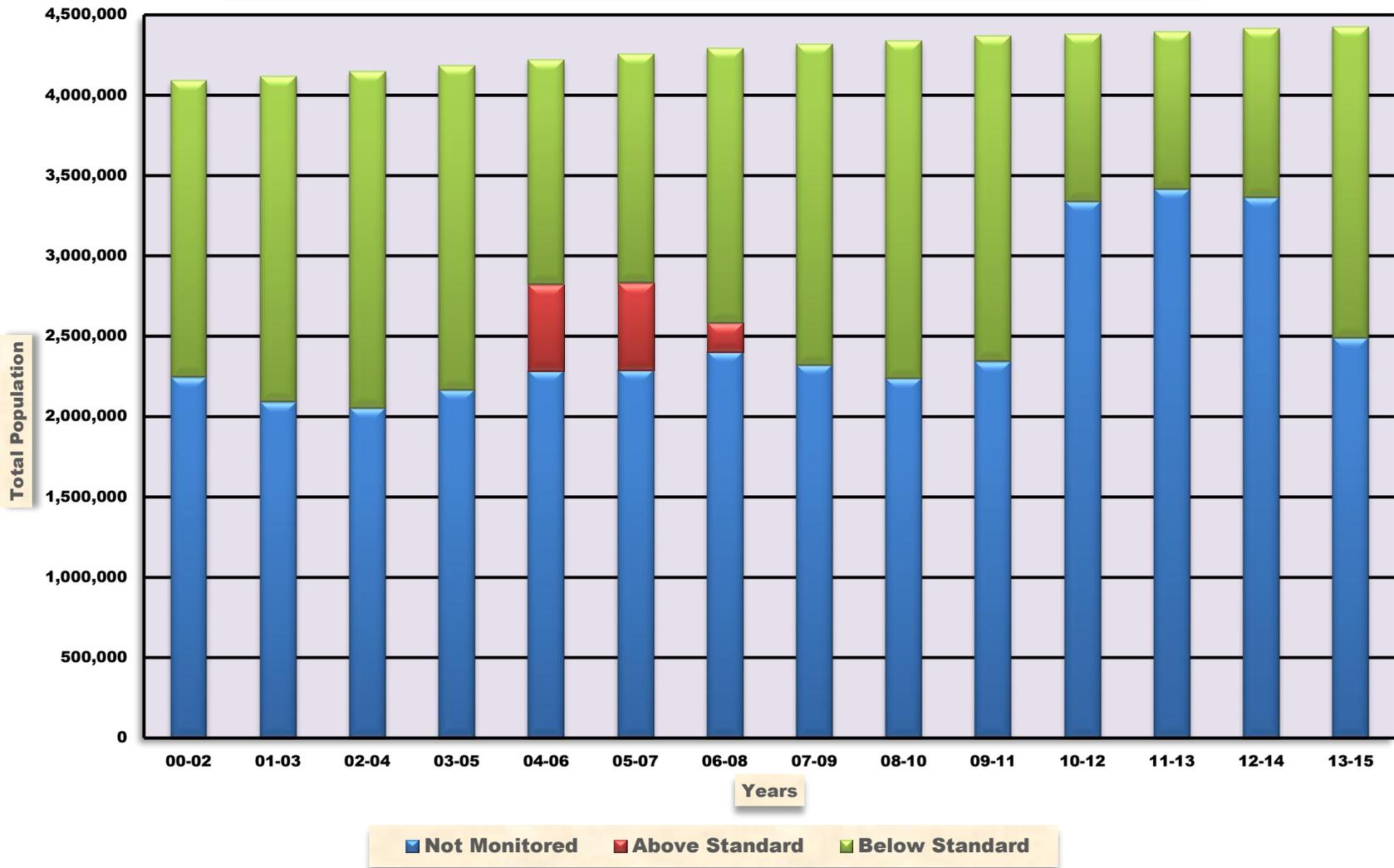
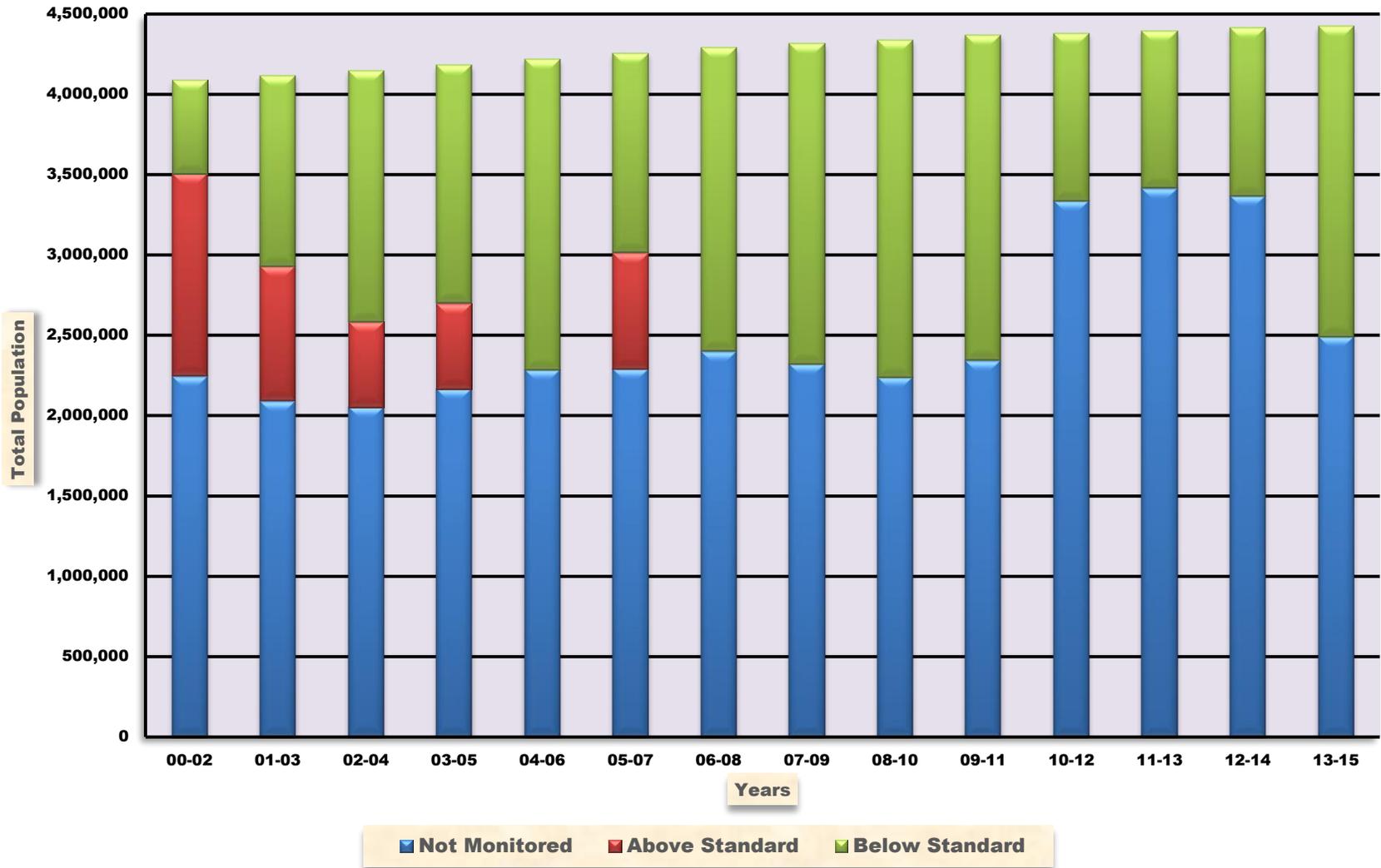


Figure KY-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Kentucky



# LOUISIANA

## Ozone

In the 2000 – 2002 time period, approximately 2.8 million people (61.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had decreased to approximately 2.5 million people (53.6%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure LA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.080 ppm. By 2013 – 2015 this had lowered to a value of 0.067 ppm, a reduction of 16.3 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.6 million people (57.5%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 2.1 million people (45.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure LA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 19  $\mu\text{g}/\text{m}^3$ , a reduction of 34.5 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.6 million people (57.5%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 2.1 million people (45.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure LA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 12.2  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.6  $\mu\text{g}/\text{m}^3$ , a reduction of 29.5 percent.

# LOUISIANA

**Table LA-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg.24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Ascension	119,453	0.068	C	N	ND	--	ND	--	--
Bossier	125,175	0.066	C	N	ND	--	ND	--	--
Caddo	251,460	0.066	C	N	22	A	10.3	B	N
Calcasieu	198,788	0.067	C	Y	16	A	7.2	A	Y
E. Baton Rouge	446,753	0.067	C	Y	19	A	8.7	A	N
Iberville	33,095	0.066	C	Y	21	A	8.7	A	Y
Jefferson	436,275	0.068	C	N	19	A	7.9	A	Y
Lafayette	240,098	0.067	C	N	18	A	8.8	A	N
Lafourche	98,325	0.065	C	N	ND	--	ND	--	--
Livingston	137,788	0.070	C	N	ND	--	ND	--	--
Ouachita	156,761	0.060	B	N	21	A	10.5	B	N
Pointe Coupee	22,251	0.068	C	N	ND	--	ND	--	--
Rapides	132,141	ND	--	--	18	A	8.5	A	N
St Bernard	45,408	0.065	C	N	ND	--	ND	--	--
St James	21,567	0.065	C	N	ND	--	ND	--	--
St John the Baptist	43,626	0.066	C	N	ND	--	ND	--	--
St Tammany	250,088	0.070	C	N	ND	--	ND	--	--
Tangipahoa	128,755	ND	--	--	16	A	7.6	A	N
Terrebonne	113,972	ND	--	--	16	A	7.2	A	N
W. Baton Rouge	25,490	0.064	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>2,907,816</b>								
Not Monitored	1,762,908								
<b>Total</b>	<b>4,670,724</b>								

**DV = Design Value**

**ND = No Data**

**MM = Multiple Monitors**

**Table LA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.080	29	12.2
2001 – 2003	0.077	26	11.8
2002 – 2004	0.077	25	11.4
2003 – 2005	0.081	27	11.8
2004 – 2006	0.080	28	11.9
2005 – 2007	0.080	27	11.9
2006 – 2008	0.076	24	11.1
2007 – 2009	0.073	20	9.8
2008 - 2010	0.072	19	9.5
2009 – 2011	0.074	20	9.5
2010 – 2012	0.073	21	10.0
2011 – 2013	0.070	20	9.2
2012 - 2014	0.068	19	8.8
2013 - 2015	0.067	19	8.6

# LOUISIANA

**Table LA-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	156,325	0
B	627,700	703,283	1,225,912	170,683	234,930	213,517	214,703	216,751	217,976	219,616	155,363	295,689	876,305	156,761
C	2,126,838	2,079,924	1,475,747	1,747,657	1,615,151	1,728,526	422,818	1,293,024	2,396,786	1,635,122	2,217,853	2,754,063	2,040,272	2,346,724
D	113,837	103,138	207,081	114,352	216,737	142,385	1,547,456	853,043	110,043	1,003,520	827,267	0	0	148,918
F	0	0	0	103,453	0	0	125,857	0	0	0	0	0	0	0
Subtotal	2,868,375	2,886,345	2,908,740	2,136,145	2,066,818	2,084,428	2,310,834	2,362,818	2,724,805	2,858,258	3,200,483	3,049,751	3,072,902	2,652,403
NM	1,628,892	1,634,697	1,643,498	2,440,483	2,235,847	2,291,153	2,124,752	2,128,830	1,808,567	1,716,578	1,401,210	1,575,719	1,576,774	2,018,321
Total	4,497,267	4,521,042	4,552,238	4,576,628	4,302,665	4,375,581	4,435,586	4,491,648	4,533,372	4,574,836	4,601,693	4,625,470	4,649,676	4,670,724

**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	2011-2013	2012-2014	2013-2015
A	2,587,207	2,472,101	2,505,313	1,947,214	741,820	1,089,616	1,839,072	2,115,457	2,129,612	2,144,180	2,178,882	2,189,548	2,085,892	2,138,098
B	0	0	0	0	1,094,595	740,948	251,953	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,587,207	2,472,101	2,505,313	1,947,214	1,836,415	1,830,564	2,091,025	2,115,457	2,129,612	2,144,180	2,178,882	2,189,548	2,085,892	2,138,098
NM	1,911,060	2,048,941	2,046,925	2,629,414	2,466,250	2,545,017	2,344,561	2,376,191	2,403,760	2,430,656	2,423,011	2,435,922	2,563,784	2,532,626
Total	4,497,267	4,521,042	4,552,238	4,576,628	4,302,665	4,375,581	4,435,586	4,491,648	4,533,372	4,574,836	4,601,893	4,625,470	4,649,676	4,670,724

**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	2011-2013	2012-2014	2013-2015
A	477,592	1,053,408	2,010,668	1,245,532	1,253,008	872,944	2,013,875	2,115,457	2,129,612	2,144,180	2,137,247	1,643,993	1,387,247	1,729,877
B	1,835,600	1,418,694	494,646	701,683	344,004	934,436	508,909	0	0	0	41,635	24,573	446,042	408,221
C	274,016	0	0	0	239,403	23,184	0	0	0	0	0	520,983	252,603	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,587,207	2,472,101	2,505,313	1,947,214	1,836,415	1,830,564	2,522,784	2,115,457	2,129,612	2,144,180	2,178,882	2,189,548	2,085,892	2,138,098
NM	1,911,060	2,048,941	2,046,925	2,629,414	2,466,250	2,545,017	1,912,802	2,376,191	2,403,760	2,430,656	2,423,011	2,435,922	2,563,784	2,532,626
Total	4,497,267	4,521,042	4,552,238	4,576,628	4,302,665	4,375,581	4,435,586	4,491,648	4,533,372	4,574,836	4,601,893	4,625,470	4,649,676	4,670,724

NM = Not Monitored

Figure LA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Louisiana

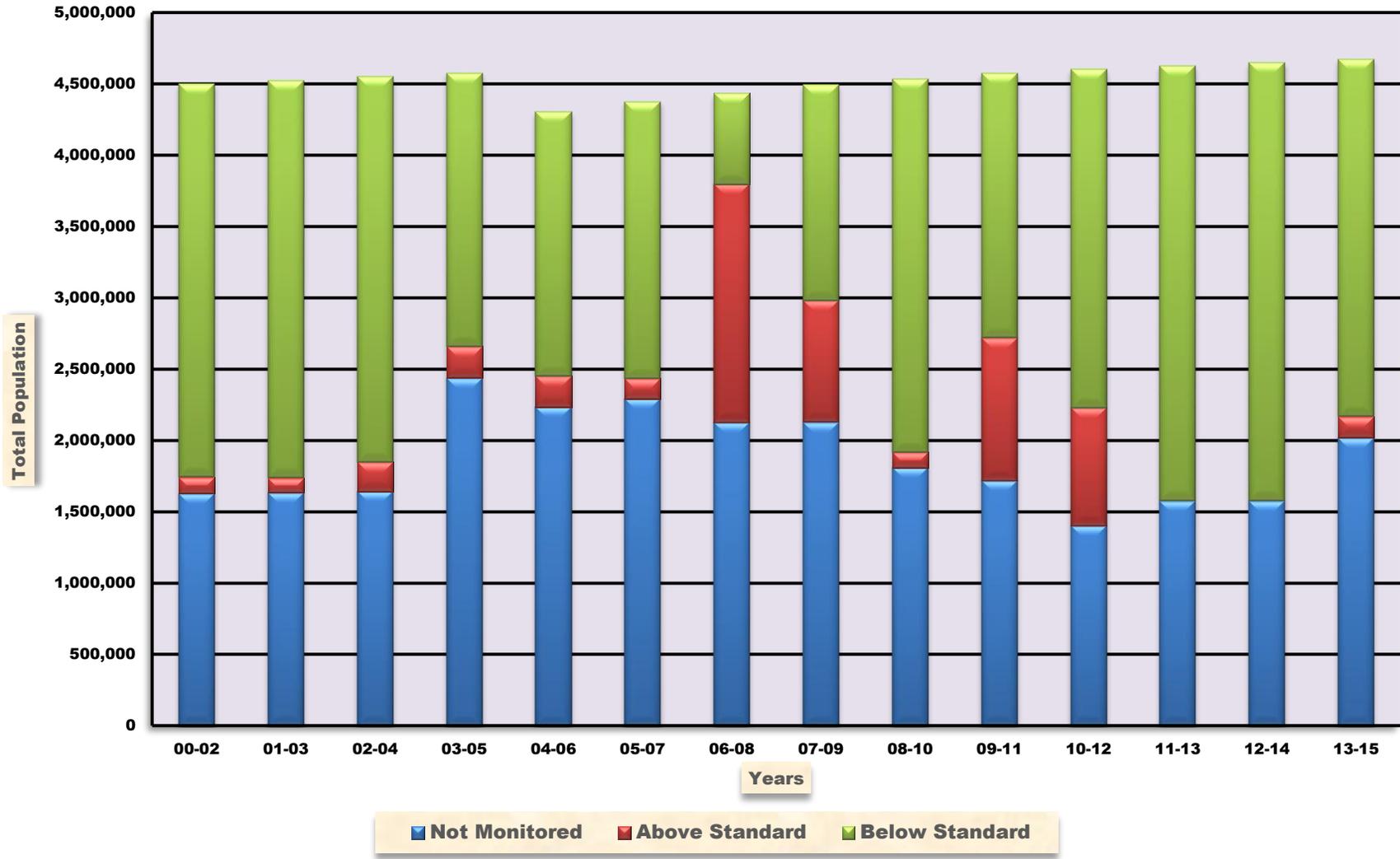


Figure LA-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Louisiana**

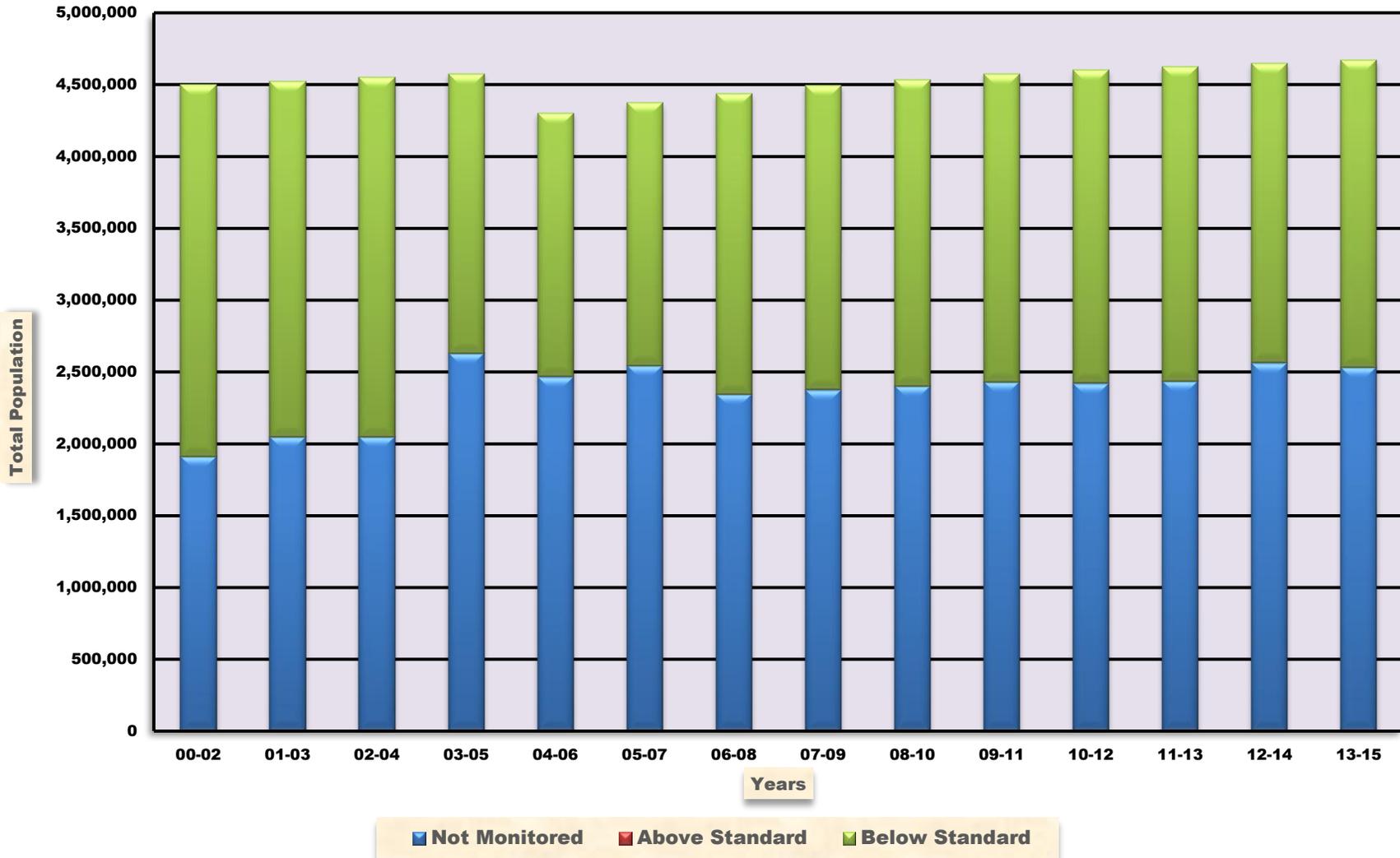
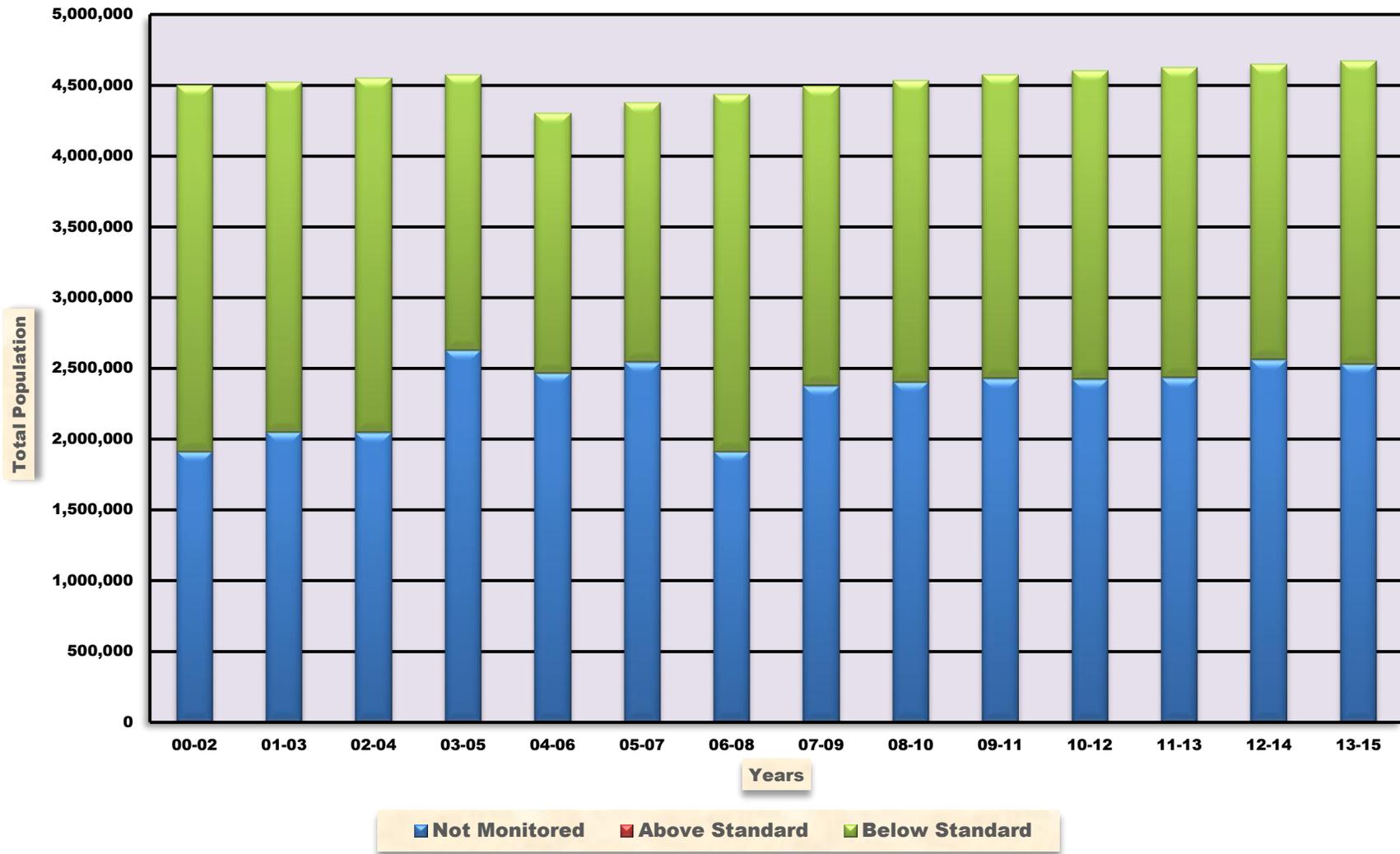


Figure LA-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Louisiana



# MAINE

## Ozone

In the 2000 – 2002 time period, approximately 240 thousand people (18.6%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 1.1 million people (83.7%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure ME-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.083 ppm. By 2013 – 2015 this had lowered to a value of 0.062 ppm, a reduction of 25.3 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.0 million people (74.4%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.33 million people (24.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure ME-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 28  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 16  $\mu\text{g}/\text{m}^3$ , a reduction of 42.9 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.0 million people (74.4%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 0.33 million people (24.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure ME-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 10.1  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 6.1  $\mu\text{g}/\text{m}^3$ , a reduction of 39.6 percent.

**Table ME-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Androscoggin	107,233	0.060	B	N	18	A	6.5	A	N
Aroostook	68,628	0.053	A	N	13	A	5.0	A	Y
Cumberland	279,977	0.067	C	N	ND	--	ND	--	--
Hancock	54,659	0.066	C	Y	ND	--	ND	--	--
Kennebec	119,980	0.061	B	N	ND	--	ND	--	--
Knox	39,855	0.068	C	N	ND	--	ND	--	--
Oxford	57,202	0.052	A	N	ND	--	ND	--	--
Penobscot	152,692	0.060	B	N	17	A	6.4	A	N
Sagadahoc	35,149	0.058	B	N	ND	--	ND	--	--
Washington	31,625	0.059	B	N	ND	--	ND	--	--
York	201,169	0.063	C	Y	ND	--	ND	--	--
<b>Subtotal</b>	<b>1,148,169</b>								
Not Monitored	181,159								
<b>Total</b>	<b>1,329,328</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table ME-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.083	28	10.1
2001 – 2003	0.085	30	10.8
2002 – 2004	0.077	29	10.7
2003 – 2005	0.071	28	10.8
2004 – 2006	0.067	26	10.1
2005 – 2007	0.072	24	9.7
2006 – 2008	0.070	22	9.1
2007 – 2009	0.069	21	8.5
2008 - 2010	0.063	22	7.9
2009 – 2011	0.062	21	7.4
2010 – 2012	0.062	20	7.4
2011 – 2013	0.062	19	7.3
2012 - 2014	0.062	18	7.1
2013 - 2015	0.062	16	6.1

# MAINE

**Table ME-3  
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	2011-2013	2012-2014	2013-2015
A	55,843	56,206	56,763	57,235	401,442	91,390	89,187	88,721	283,626	522,867	314,557	312,886	311,637	125,830
B	0	0	388,891	750,734	576,105	826,845	228,155	228,156	541,848	295,399	571,040	598,350	600,629	545,643
C	185,033	304,263	464,910	124,552	18,003	18,100	470,239	776,249	293,821	301,553	235,575	209,701	210,802	441,547
D	490,797	535,800	17,871	0	0	0	224,836	27,250	0	0	0	0	0	0
F	0	26,515	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	731,672	922,784	928,435	932,521	935,550	936,335	1,012,415	1,120,374	1,119,294	1,119,819	1,121,171	1,120,936	1,123,068	1,113,020
NM	564,288	383,729	385,253	386,266	388,069	390,705	318,094	209,216	209,067	208,369	208,021	207,366	207,021	216,308
Total	1,295,960	1,306,513	1,313,688	1,318,787	1,323,619	1,327,040	1,330,509	1,329,590	1,328,361	1,328,188	1,329,192	1,328,302	1,330,089	1,329,328

**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	2011-2013	2012-2014	2013-2015
A	964,390	972,479	780,626	784,426	453,713	791,170	795,146	795,834	795,153	849,275	850,036	849,765	803,906	328,553
B	0	0	0	0	334,640	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	964,390	972,479	780,626	784,426	788,353	791,170	795,146	795,834	795,153	849,275	850,036	849,765	803,906	328,553
NM	331,570	334,034	533,062	534,361	535,266	535,870	535,363	533,756	533,208	478,913	479,156	478,537	526,183	1,000,775
Total	1,295,960	1,306,513	1,313,688	1,318,787	1,323,619	1,327,040	1,330,509	1,329,590	1,328,361	1,328,188	1,329,192	1,328,302	1,330,089	1,329,328

**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	2011-2013	2012-2014	2013-2015
A	964,390	972,479	780,626	646,289	788,353	791,170	795,146	795,834	795,153	849,275	850,036	849,765	803,906	328,553
B	0	0	0	138,138	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	964,390	972,479	780,626	784,426	788,353	791,170	795,146	795,834	795,153	849,275	850,036	849,765	803,906	328,553
NM	331,570	334,034	533,062	534,361	535,266	535,870	535,363	533,756	533,208	478,913	479,156	478,537	526,183	1,000,775
Total	1,295,960	1,306,513	1,313,688	1,318,787	1,323,619	1,327,040	1,330,509	1,329,590	1,328,361	1,328,188	1,329,192	1,328,302	1,330,089	1,329,328

NM = Monitored

Figure ME-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Maine

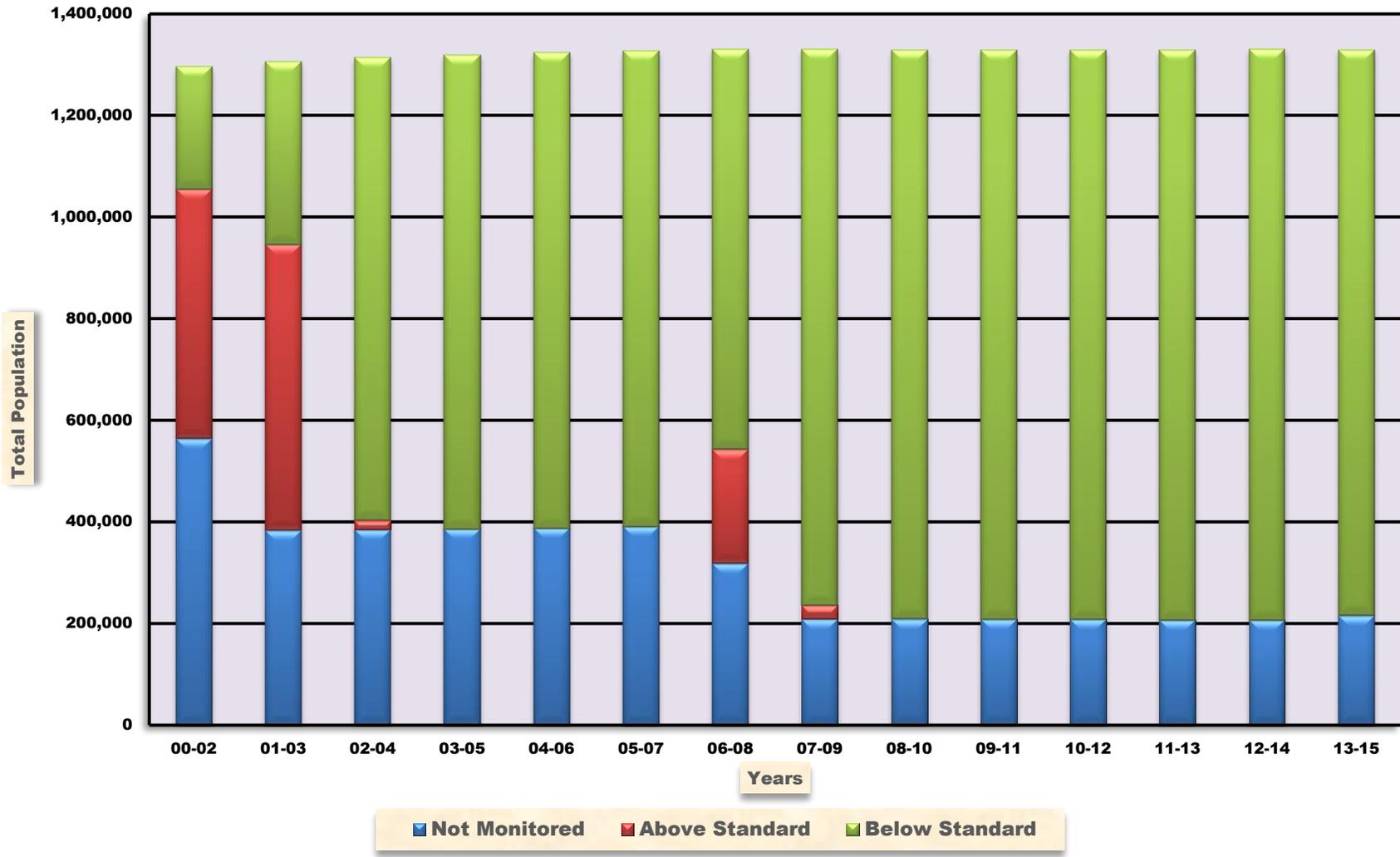


Figure ME-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Maine

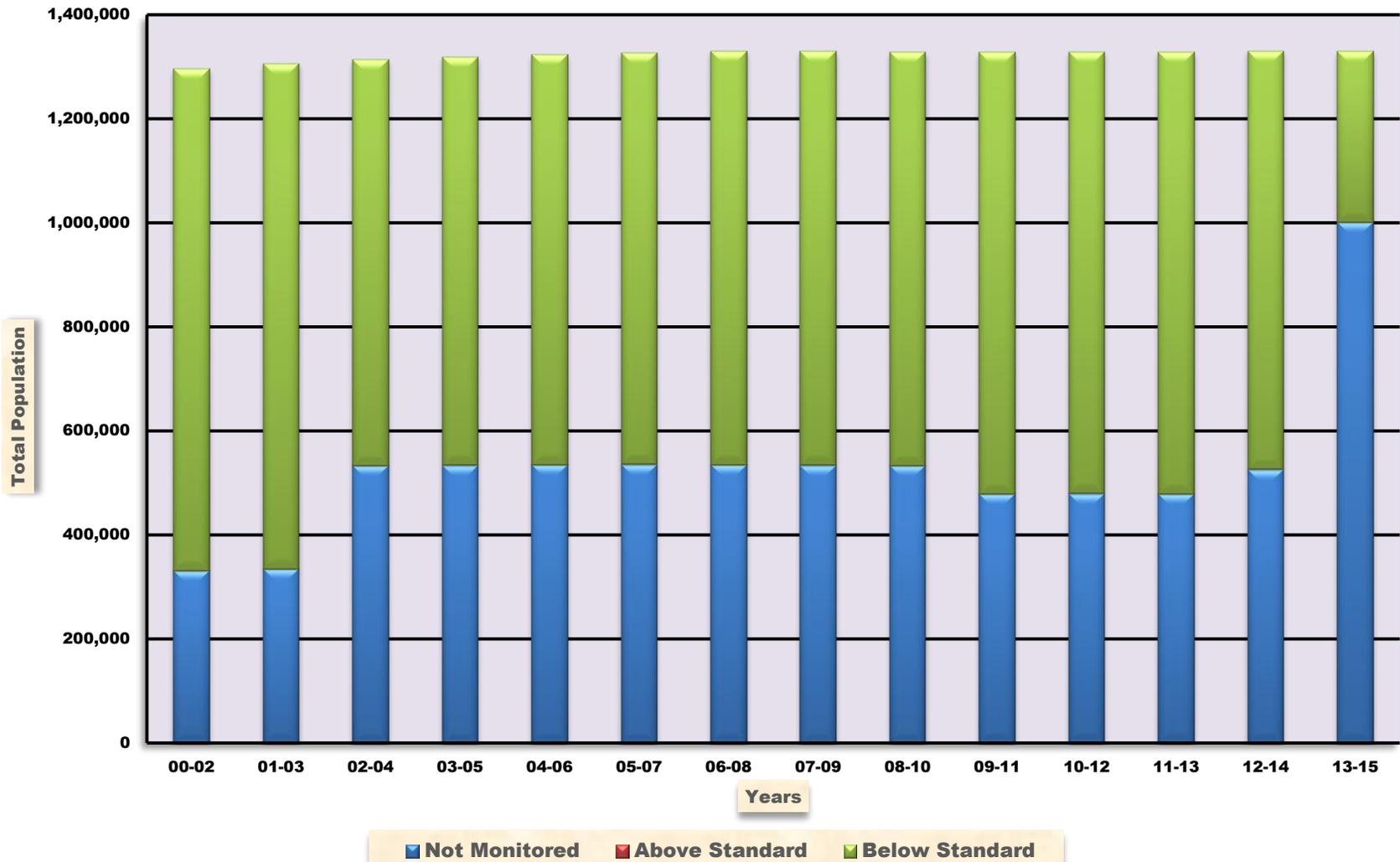
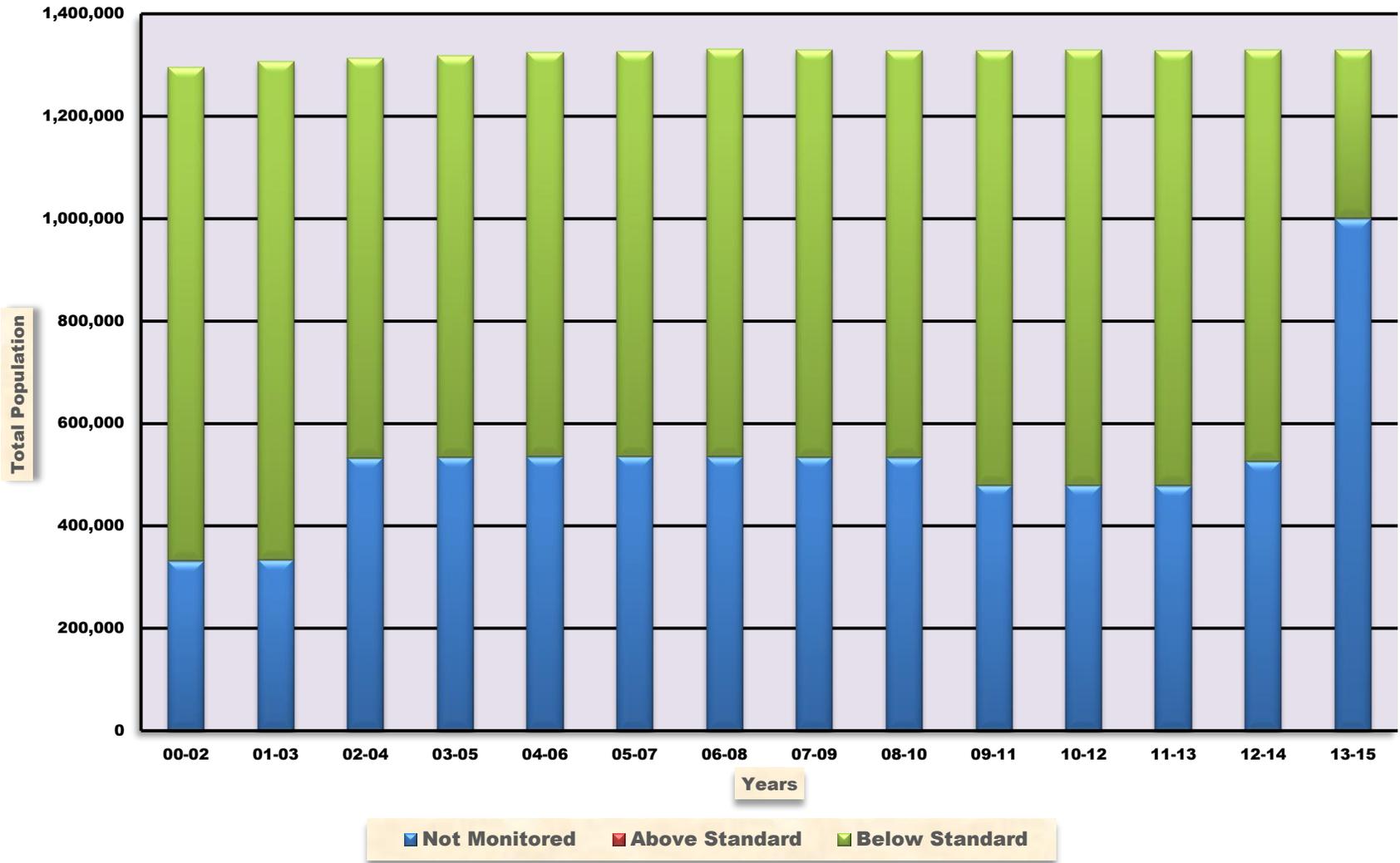


Figure ME-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Maine



## MARYLAND

### Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 4.6 million people (76.0%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MD-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.094 ppm. By 2013 – 2015 this had lowered to a value of 0.068 ppm, a reduction of 27.7 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 4.1 million people (75.2%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 4.5 million people (74.7%). The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure MD-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 37  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 22  $\mu\text{g}/\text{m}^3$ , a reduction of 40.5n percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.1 million people (39.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 4.5 million people (74.7%). The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure MD-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.1  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 9.1  $\mu\text{g}/\text{m}^3$ , a reduction of 39.7 percent.

**Table MD-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Anne Arundel	564,195	0.069	C	N	23	A	9.3	A	N
Baltimore	831,128	0.069	C	Y	23	A	9.3	A	Y
Calvert	90,595	0.068	C	N	ND	--	ND	--	--
Carroll	167,627	0.067	C	N	ND	--	ND	--	--
Cecil	<b>102,382</b>	<b>0.073</b>	<b>D</b>	N	25	A	9.4	A	N
Charles	156,118	0.066	C	N	ND	--	ND	--	--
Dorchester	32,384	0.065	C	Y	19	A	7.9	A	N
Frederick	245,322	0.067	C	N	ND	--	ND	--	--
Garrett	29,460	0.064	C	N	16	A	6.6	A	N
Harford	250,290	0.070	C	Y	23	A	9.4	A	N
Kent	19,787	0.069	C	N	21	A	8.8	A	N
Montgomery	1,040,116	0.068	C	N	21	A	8.9	A	N
Prince Georges	909,535	0.068	C	Y	19	A	8.6	A	Y
Washington	149,585	0.065	C	N	26	A	9.4	A	N
Baltimore (city)	621,849	0.065	C	N	25	A	9.8	B	Y
<b>Subtotal</b>	<b>5,210,373</b>								
Not Monitored	796,028								
<b>Total</b>	<b>6,006,401</b>								

**DV = Design Value**

**ND = No Data**

**MM = Multiple Monitors**

**Table MD-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.094	37	15.1
2001 – 2003	0.092	37	13.9
2002 – 2004	0.088	36	13.7
2003 – 2005	0.084	35	13.8
2004 – 2006	0.086	33	13.7
2005 – 2007	0.087	32	13.3
2006 – 2008	0.084	31	12.3
2007 – 2009	0.076	28	11.6
2008 - 2010	0.076	25	10.7
2009 – 2011	0.078	25	10.5
2010 – 2012	0.081	24	10.2
2011 – 2013	0.077	24	9.9
2012 - 2014	0.070	22	9.3
2013 - 2015	0.068	22	9.1

# MARYLAND

**Table MD-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	30,147	30,148	0	620,509	620,961	0	0	0	772,366	0
C	0	0	1,828,291	2,259,140	2,019,756	1,021,640	30,222	811,050	949,437	817,951	800,376	2,259,891	4,009,505	4,567,282
D	2,175,242	2,619,166	1,016,163	1,843,240	2,106,646	2,156,291	1,006,857	2,329,405	2,685,497	4,082,729	2,405,307	2,758,652	403,860	643,091
F	1,798,729	1,401,895	1,220,004	0	0	120,817	2,305,391	222,659	122,413	123,245	1,866,012	124,608	0	0
Subtotal	3,973,971	4,021,061	4,064,457	4,102,380	4,156,548	3,328,895	3,342,469	3,983,622	4,378,308	5,023,924	5,071,694	5,143,150	5,185,731	5,210,373
NM	1,466,410	1,475,208	1,482,478	1,489,999	1,470,819	2,324,513	2,342,496	1,746,766	1,395,244	804,365	812,869	785,664	790,676	796,028
Total	5,440,389	5,496,269	5,546,935	5,592,379	5,627,367	5,653,408	5,684,965	5,730,388	5,773,552	5,828,289	5,884,563	5,928,814	5,976,407	6,006,401

**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	2011-2013	2012-2014	2013-2015
A	4,093,440	3,193,339	3,211,115	4,082,129	0	0	0	2,021,241	3,041,556	3,120,147	3,668,018	4,220,912	4,466,639	4,281,584
B	0	0	0	0	1,266,476	1,844,087	2,282,600	1,684,068	1,250,651	816,411	207,114	207,368	0	207,283
C	0	0	0	0	2,411,972	1,989,656	1,944,139	556,031	0	0	0	0	0	0
D	0	0	0	0	248,444	372,184	0	0	0	0	0	0	0	0
F	0	0	0	0	124,222	0	0	0	0	0	0	0	0	0
Subtotal	4,093,440	3,193,339	3,211,115	4,082,129	4,051,113	4,205,927	4,226,739	4,261,340	4,292,207	3,936,558	3,875,132	4,428,280	4,466,639	4,488,867
NM	1,346,949	2,302,930	2,335,820	1,510,250	1,576,254	1,447,481	1,458,226	1,469,048	1,481,345	1,891,731	2,009,431	1,500,534	1,509,768	1,517,534
Total	5,440,389	5,496,269	5,546,935	5,592,379	5,627,367	5,653,408	5,684,965	5,730,388	5,773,552	5,828,289	5,884,563	5,928,814	5,976,407	6,006,401

**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	2011-2013	2012-2014	2013-2015
A	0	0	0	172,057	0	0	2,135,926	2,577,272	4,292,207	3,781,685	3,668,018	1,063,916	3,144,424	3,562,842
B	993,201	1,395,794	1,406,470	2,013,204	2,118,573	2,269,045	1,381,396	1,684,068	0	154,873	207,114	3,156,996	1,114,617	718,742
C	1,132,347	904,305	1,260,183	915,883	1,559,875	1,688,760	709,418	0	0	0	0	0	207,598	207,283
D	1,138,999	767,433	544,463	877,392	372,665	248,122	0	0	0	0	0	207,368	0	0
F	828,893	125,807	0	103,593	0	0	0	0	0	0	0	0	0	0
Subtotal	4,093,440	3,193,339	3,211,115	4,082,129	4,051,113	4,205,927	4,226,739	4,261,340	4,292,207	3,936,558	3,875,132	4,428,280	4,466,639	4,488,867
NM	1,346,949	2,302,930	2,335,820	1,510,250	1,576,254	1,447,481	1,458,226	1,469,048	1,481,345	1,891,731	2,009,431	1,500,534	1,509,768	1,517,534
Total	5,440,389	5,496,269	5,546,935	5,592,379	5,627,367	5,653,408	5,684,965	5,730,388	5,773,552	5,828,289	5,884,563	5,928,814	5,976,407	6,006,401

NM = Not Monitored

Figure MD-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Maryland

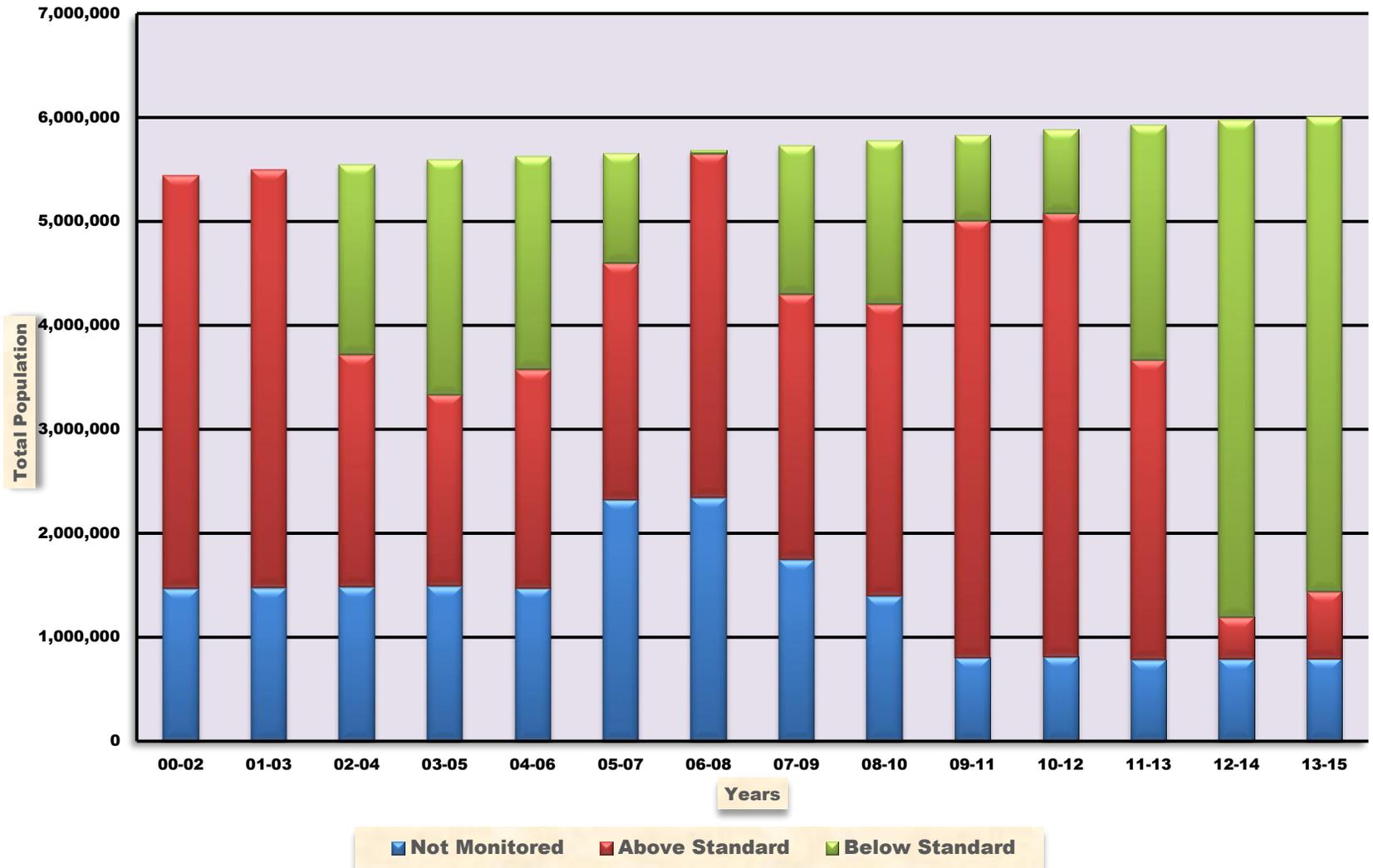


Figure MD-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Maryland

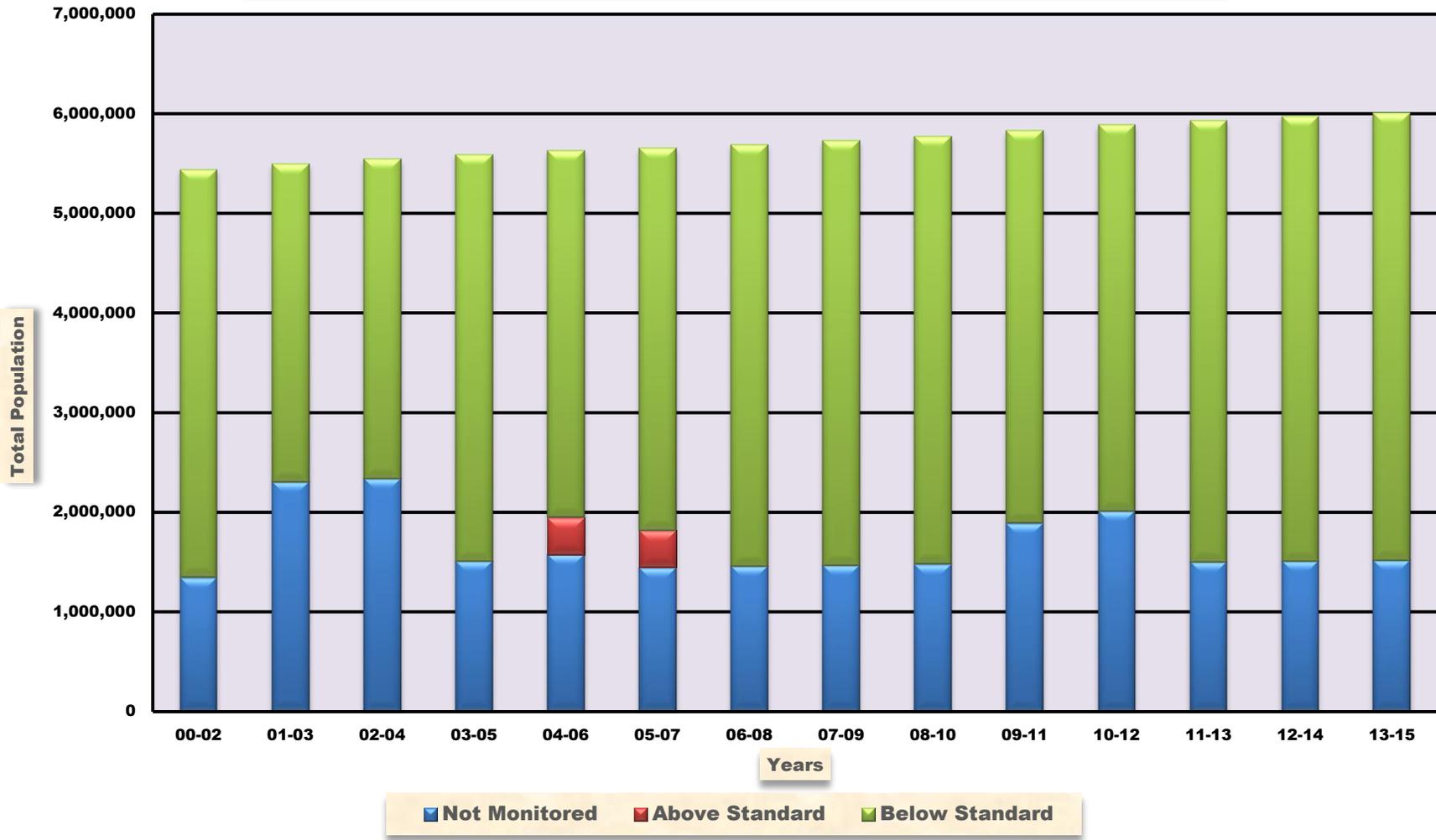
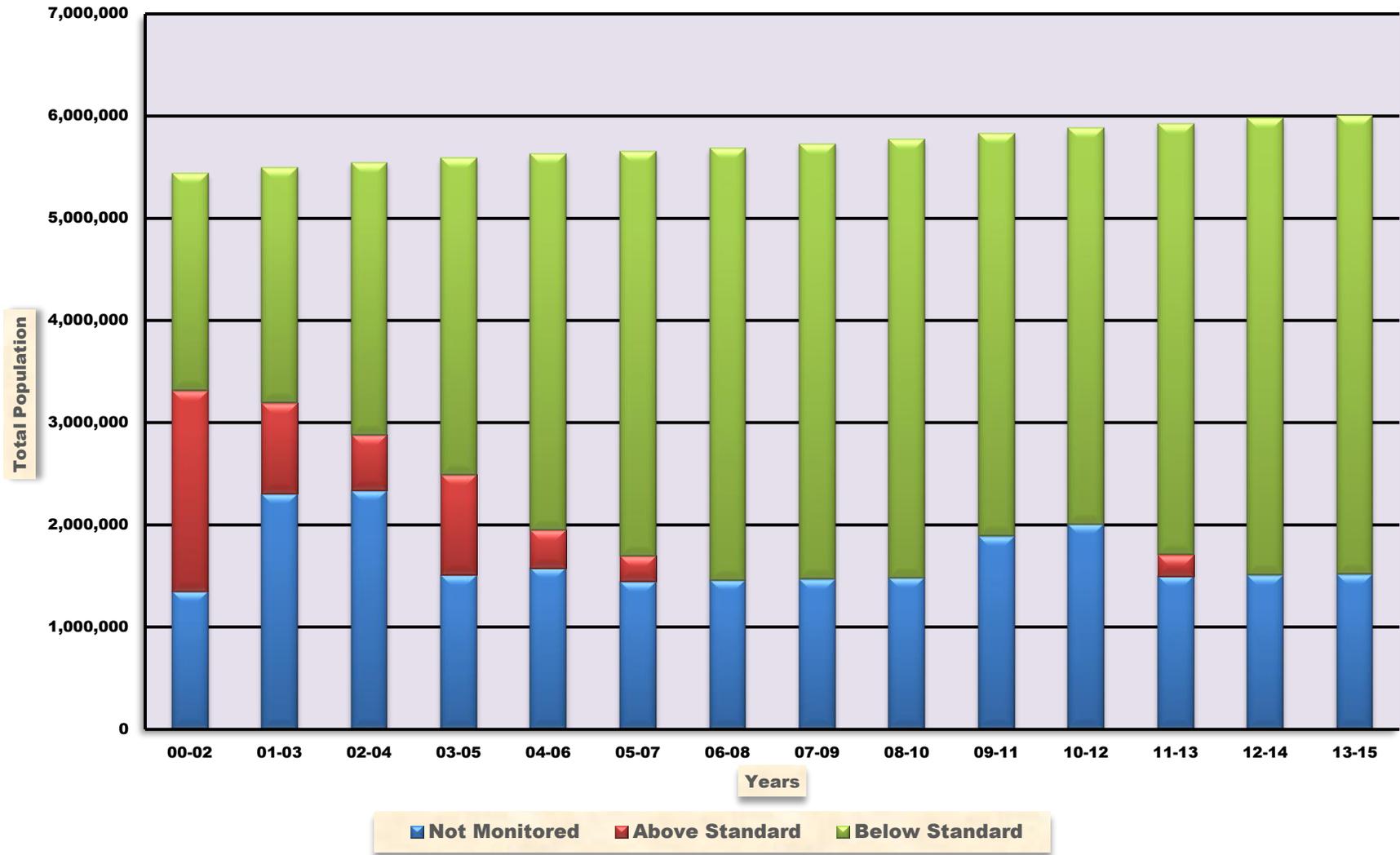


Figure MD-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Maryland



# MASSACHUSETTS

## Ozone

In the 2000 – 2002 time period, approximately 1 million people (16.1%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 5.7 million people (83.6%). The remainder of the population lived in counties where ozone was no monitored. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.086 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 25.6 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 6.1 million people (95.0%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.5 million people (51.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure MA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 16 µg/m<sup>3</sup>, a reduction of 44.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 6.1 million people (95.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 3.5 million people (51.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure MA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 11.3 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 6.3 µg/m<sup>3</sup>, a reduction of 44.2 percent.

**Table MA-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Berkshire	127,828	ND	--	--	17	A	6.8	A	N
Bristol	556,772	0.069	C	N	16	A	5.8	A	N
Essex	776,043	0.065	C	Y	14	A	5.6	A	Y
Hampden	470,690	0.068	C	N	18	A	6.7	A	Y
Middlesex	1,585,139	0.064	C	N	ND	--	ND	--	--
Norfolk	696,023	0.068	C	N	ND	--	ND	--	--
Suffolk	778,121	0.056	B	N	18	A	7.0	A	Y
Worcester	818,963	0.064	C	Y	16	A	6.3	A	Y
<b>Subtotal</b>	<b>5,809,579</b>								
Not Monitored	984,843								
<b>Total</b>	<b>6,794,422</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table MA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.086	29	11.3
2001 – 2003	0.090	33	11.8
2002 – 2004	0.084	32	11.2
2003 – 2005	0.079	30	10.9
2004 – 2006	0.079	28	10.3
2005 – 2007	0.081	27	10.0
2006 – 2008	0.078	25	9.5
2007 – 2009	0.076	24	9.2
2008 - 2010	0.072	23	8.7
2009 – 2011	0.069	21	8.2
2010 – 2012	0.069	21	8.3
2011 – 2013	0.068	19	7.9
2012 - 2014	0.068	17	6.9
2013 - 2015	0.064	16	6.3

# MASSACHUSETTS

**Table MA-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	77,692	343,596	0	0	0	0	0	0	0	383,627	0
B	594,744	348,540	423,146	1,798,168	2,031,317	693,368	702,201	716,214	361,012	1,212,191	824,324	2,414,905	2,896,132	778,121
C	439,650	77,311	2,034,709	3,176,382	2,927,382	3,971,941	817,332	1,504,925	4,036,650	3,79,259	4,542,085	3,018,020	2,876,909	4,903,630
D	3,381,572	1,754,901	2,594,251	767,432	539,492	1,196,437	3,820,330	3,259,342	1,556,970	0	17,041	0	0	0
F	0	1,232,965	0	0	0	0	556,993	462,777	0	0	0	0	0	0
Subtotal	4,415,965	3,413,716	5,052,105	5,819,673	5,841,786	5,861,746	5,896,855	5,943,258	5,954,631	5,991,450	5,383,449	5,432,924	6,156,668	5,681,751
NM	2,001,241	3,008,849	1,360,176	583,617	568,298	569,813	572,112	574,355	481,998	596,086	1,262,695	1,259,900	588,740	1,112,671
Total	6,417,206	6,422,565	6,412,281	6,403,290	6,410,084	6,431,559	6,468,967	6,517,613	6,547,629	6,587,536	6,646,144	6,692,824	6,745,408	6,794,422

**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	2011-2013	2012-2014	2013-2015
A	6,094,986	3,281,441	2,499,982	3,822,181	1,184,593	2,495,503	2,933,416	4,191,847	5,404,732	5,440,002	3,952,987	3,678,758	4,007,912	3,528,417
B	0	0	0	0	2,642,050	2,652,959	2,401,294	487,572	0	0	0	0	0	0
C	0	0	0	0	0	153,811	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	6,094,986	3,281,441	2,499,982	3,822,181	3,826,643	5,302,274	5,334,710	4,679,418	5,404,732	5,440,002	3,952,987	3,678,758	4,007,912	3,528,417
NM	322,220	3,141,124	3,912,299	2,581,109	2,583,441	1,129,285	1,134,257	1,838,195	1,142,897	1,147,534	2,693,157	3,013,866	2,737,496	3,266,005
Total	6,417,206	6,422,565	6,412,281	6,403,290	6,410,084	6,431,559	6,468,967	6,517,613	6,547,629	6,587,536	6,646,144	6,692,824	6,745,408	6,794,422

**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	2011-2013	2012-2014	2013-2015
A	4,170,584	2,345,025	1,827,914	2,999,800	3,329,244	2,649,315	5,334,710	4,679,418	5,404,732	5,440,002	3,952,987	3,678,758	4,007,912	3,528,417
B	1,092,549	578,877	499,250	650,731	497,399	2,652,959	0	0	0	0	0	0	0	0
C	831,853	348,540	172,818	171,650	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	6,094,986	3,284,441	2,499,982	3,822,181	3,826,643	5,302,274	5,334,710	4,679,418	5,404,732	5,440,002	3,952,987	3,678,725	4,007,912	3,528,417
NM	322,220	3,141,124	3,912,299	2,581,109	2,583,441	1,129,285	1,134,257	1,838,195	1,142,897	1,147,534	2,693,157	3,013,866	2,737,496	3,526,005
Total	6,417,206	6,422,565	6,412,281	6,403,290	5,410,084	6,431,559	6,468,967	6,517,613	6,547,629	6,587,536	6,646,144	6,692,824	6,745,408	6,794,422

NM = Not Monitored

Figure MA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Massachusetts

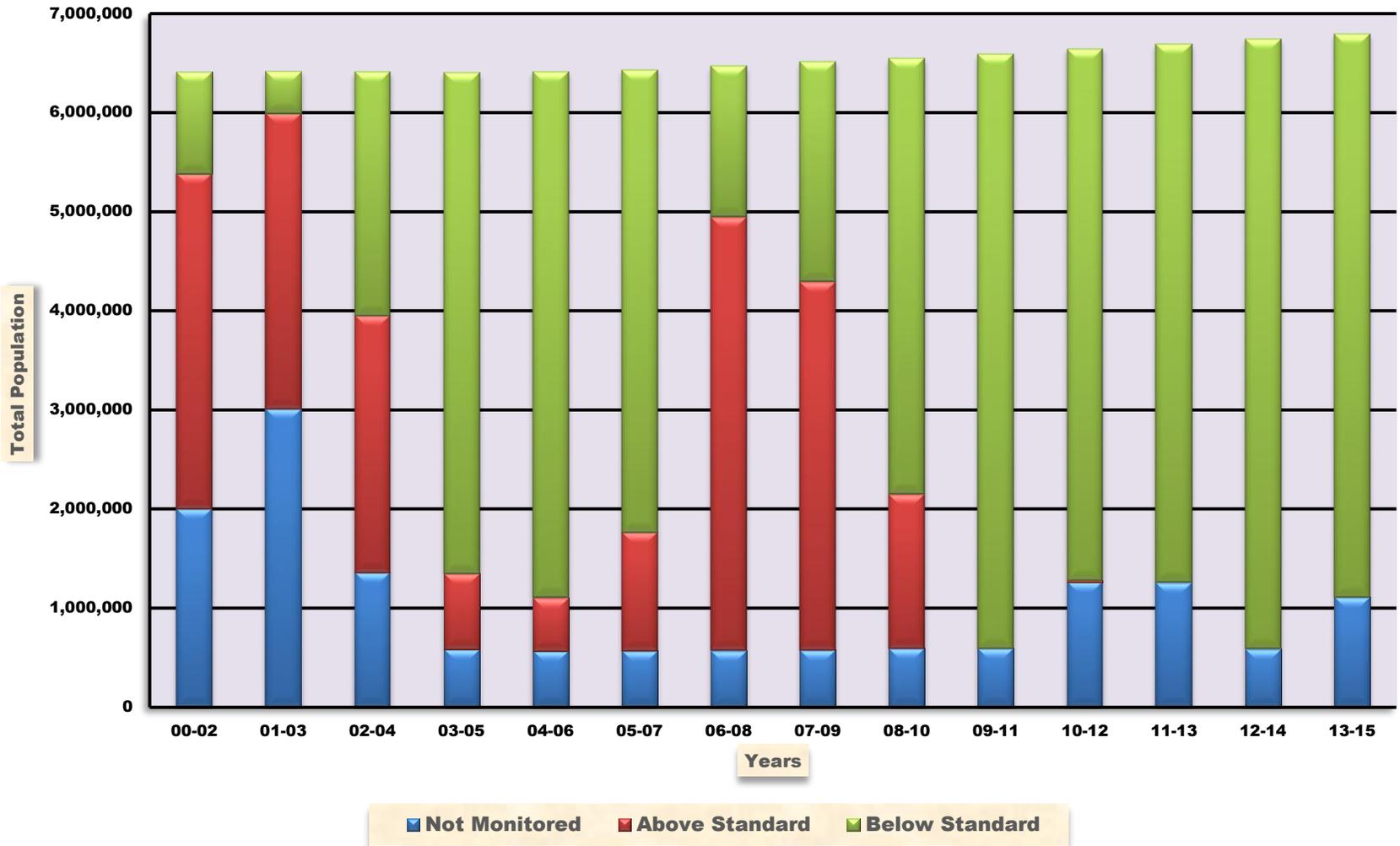


Figure MA-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Massachusetts**

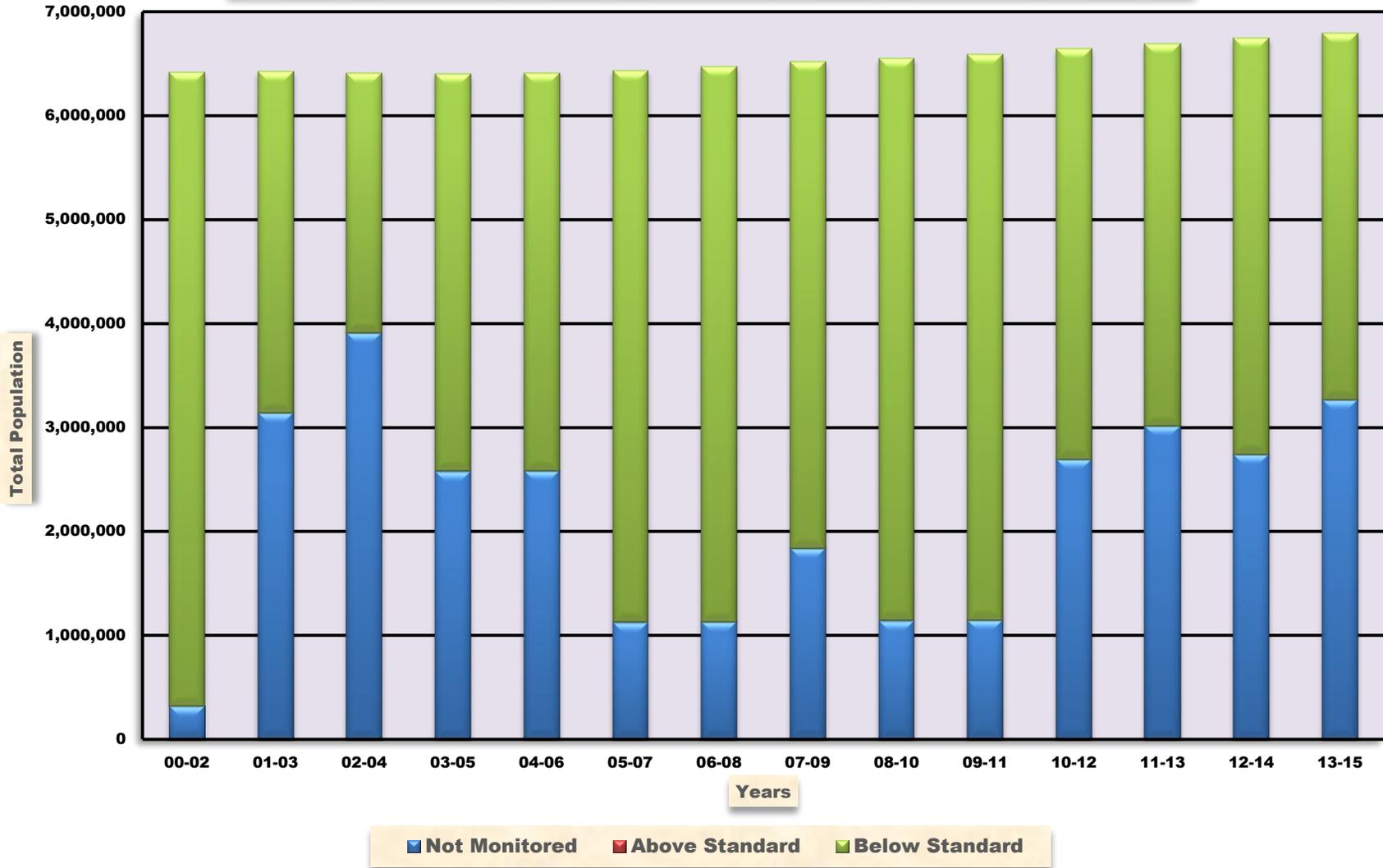
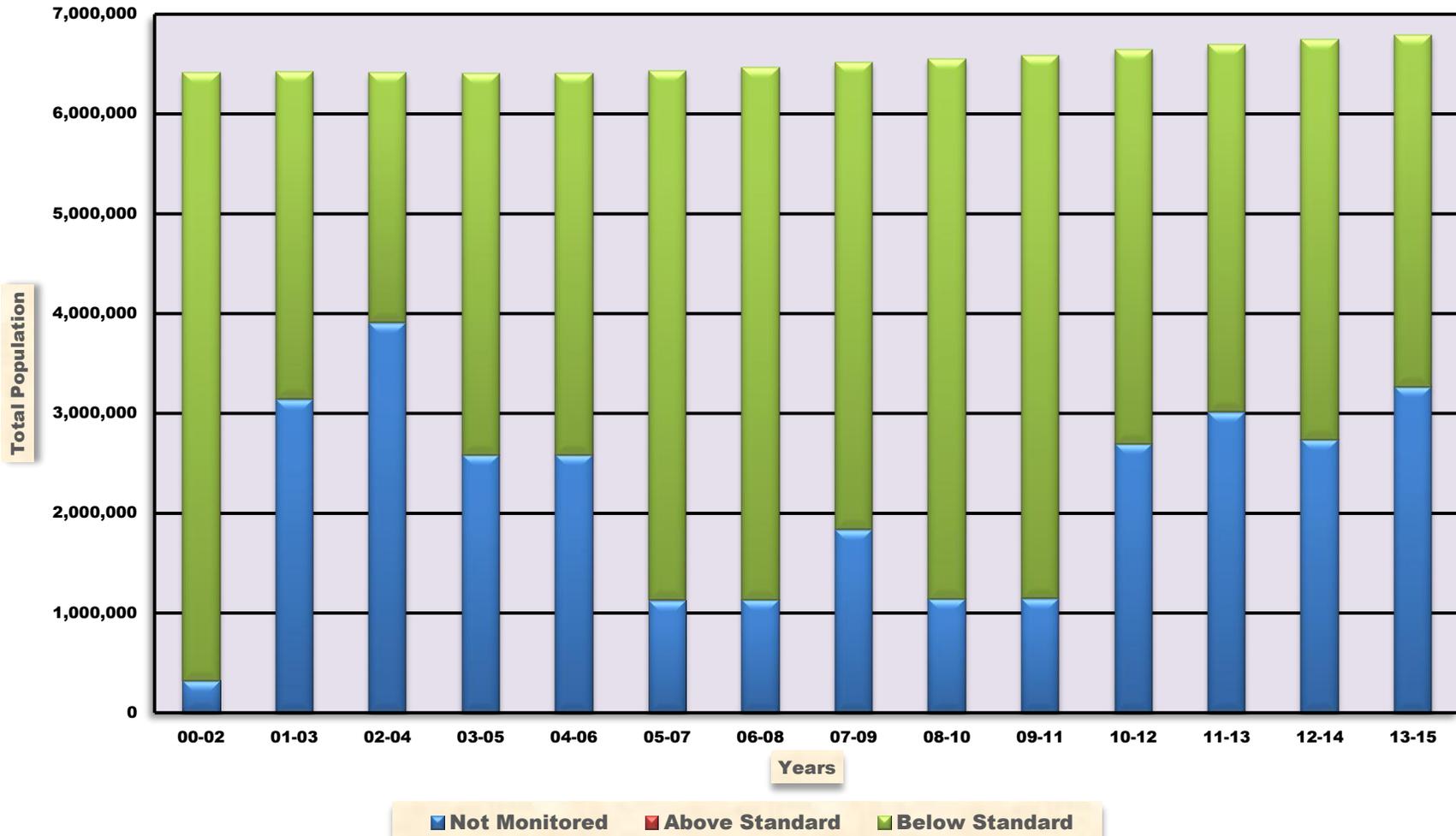


Figure MA-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Massachusetts



## MICHIGAN

### Ozone

In the 2000 – 2002 time period, 5.9 million people (59.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 6.5 million people (65.9%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MI-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.084 ppm. By 2013 – 2015 this had lowered to a value of 0.067 ppm, a reduction of 20.2 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 5.9 million people (59.2%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 6.5 million people (65.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure MI-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 37  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 37.8 percent

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 3.8 million people (38.4%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 6.5 million people (65.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure MI-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 14.6  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 9.1  $\mu\text{g}/\text{m}^3$ , a reduction of 37.7 percent.

# MICHIGAN

**Table MI-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Allegan	114,625	0.075	D	N	21	A	8.1	A	N
Bay	105,659	ND	--	--	20	A	7.8	A	N
Benzie	17,457	0.068	C	N	ND	--	ND	--	--
<b>Berrien</b>	<b>154,636</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	19	A	8.2	A	N
Cass	51,657	0.068	C	N	ND	--	ND	--	--
Chippewa	38,033	0.069	C	N	15	A	6.0	A	N
Clinton	77,390	0.064	C	N	ND	--	ND	--	--
Genesee	410,849	0.066	C	Y	21	A	8.2	A	N
Huron	31,883	0.065	C	N	ND	--	ND	--	--
Ingham	286,085	0.065	C	N	21	A	8.5	A	N
Kalamazoo	260,263	0.067	C	N	21	A	8.9	A	N
Kent	636,369	0.066	C	Y	23	A	9.3	A	Y
Lenawee	98,573	0.065	C	N	22	A	8.4	A	N
Macomb	864,840	0.068	C	Y	26	A	9.0	A	N
Manistee	24,461	0.067	C	N	18	A	6.4	A	N
Mason	28,783	0.068	C	N	ND	--	ND	--	--
Missaukee	14,903	0.064	C	N	17	A	5.6	A	N
<b>Muskegon</b>	<b>172,790</b>	<b>0.074</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Oakland	242,304	0.066	C	N	24	A	9.0	A	N
Ottawa	279,955	0.068	C	N	ND	--	ND	--	--
<b>St Clair</b>	<b>159,875</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	24	A	9.1	A	N
Schoolcraft	8,173	0.068	C	N	ND	--	ND	--	--
Tuscola	53,777	0.063	C	N	ND	---	ND	--	--
Washtenaw	358,880	0.065	C	Y	23	A	9.3	A	N
Wayne	1,759,335	0.067	C	Y	24	A	9.8	B	Y
Wexford	33,003	0.065	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>6,284,558</b>								
Not Monitored	3,617,033								
<b>Total</b>	<b>9,901,591</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table MI-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m<sup>3</sup>)</b>	<b>Annual PM-2.5 (µg/m<sup>3</sup>)</b>
2000 – 2002	0.084	37	14.6
2001 – 2003	0.089	40	16.4
2002 – 2004	0.084	34	13.4
2003 – 2005	0.081	37	13.7
2004 – 2006	0.075	37	13.8
2005 – 2007	0.080	36	13.9
2006 – 2008	0.077	31	12.5
2007 – 2009	0.075	30	11.2
2008 - 2010	0.070	27	10.1
2009 – 2011	0.073	26	9.4
2010 – 2012	0.077	25	9.3
2011 – 2013	0.075	22	9.0
2012 - 2014	0.072	22	9.1
2013 - 2015	0.067	23	9.1

# MICHIGAN

## Table MI-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	15,127	1,343,754	4,471,448	1,284,676	0	0	1,712,961	90,380	38,917	38,696	38,321	38,033
C	4,038,978	591,109	4,396,538	4,778,551	2,514,604	4,663,995	2,354,399	3,526,122	5,277,624	5,292,714	2,809,753	3,280,313	3,374,152	5,106,520
D	3,043,570	5,352,267	2,638,425	939,630	111,156	1,120,868	4,587,490	3,400,159	0	1,604,657	4,080,648	3,624,917	3,635,859	1,034,346
F	0	1,097,443	0	0	0	0	111,589	0	0	0	112,039	112,531	113,847	0
Subtotal	7,082,548	7,040,819	7,050,090	7,061,935	7,097,208	7,069,539	7,053,478	6,926,281	6,990,585	6,987,750	7,041,356	7,056,456	7,162,179	6,178,899
NM	2,933,162	3,000,333	3,005,225	2,989,202	2,938,873	2,931,745	2,893,211	2,975,310	2,893,055	2,888,437	2,842,004	2,839,166	2,747,698	3,743,677
Total	10,015,710	10,041,152	10,055,315	10,051,137	10,036,081	10,001,284	9,946,689	9,901,591	9,883,640	9,876,187	9,883,360	9,895,622	9,909,877	9,922,576

## 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	2011-2013	2012-2014	2013-2015
A	5,926,299	6,079,788	6,076,954	7,284,911	15,043	15,009	729,425	1,354,510	3,768,148	6,250,532	6,646,925	6,777,127	6,517,352	6,529,690
B	0	0	0	0	685,342	683,540	1,474,538	3,268,490	2,503,267	514,885	398,303	0	0	0
C	0	0	0	0	393,260	393,133	1,243,372	1,889,966	227,573	0	0	0	0	0
D	0	0	0	0	1,712,205	913,821	0	0	0	0	0	0	0	0
F	0	0	0	0	1,312,954	1,485,905	0	0	0	0	0	0	0	0
Subtotal	5,926,299	6,079,788	6,076,954	7,284,911	4,118,804	3,491,408	3,447,335	6,512,966	6,498,988	6,765,417	7,045,228	6,777,127	6,517,352	6,529,690
NM	4,089,411	3,961,364	3,978,361	2,766,226	5,917,277	6,509,876	6,099,554	3,388,625	3,384,652	3,110,770	2,838,132	3,118,495	3,392,525	3,380,187
Total	10,015,710	10,041,152	10,055,315	10,051,137	10,036,081	10,001,284	9,946,889	9,901,591	9,883,640	9,876,187	9,883,360	9,895,622	9,909,877	9,909,877

## 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	2011-2013	2012-2014	2013-2015
A	209,323	357,103	1,131,792	1,145,248	126,199	564,545	841,014	5,594,198	6,271,415	6,765,417	7,045,228	5,667,581	5,634,950	5,650,023
B	1,855,271	1,949,274	2,640,504	2,484,447	1,562,637	527,137	1,984,635	689,076	227,573	0	0	887,637	661,802	659,751
C	1,783,597	2,190,697	1,171,041	2,255,028	1,656,972	1,639,329	310,843	229,692	0	0	0	221,909	220,601	219,917
D	1,065,542	722,934	850,213	1,120,150	386,498	380,198	310,843	0	0	0	0	0	0	0
F	1,012,567	859,780	283,404	280,038	386,478	380,198	0	0	0	0	0	0	0	0
Subtotal	5,926,299	6,079,788	6,076,954	7,284,911	4,118,804	3,491,408	3,447,335	6,512,966	6,498,988	6,765,417	7,045,228	6,777,127	6,517,352	6,529,690
NM	4,089,411	3,961,364	3,978,361	2,766,226	5,917,277	6,509,876	6,499,554	3,388,625	3,384,652	3,110,770	2,838,132	3,118,495	3,392,525	3,380,187
Total	10,015,710	10,041,152	10,055,315	10,051,137	10,036,081	10,001,284	9,946,889	9,901,591	9,883,640	9,876,187	9,883,360	9,895,622	9,909,877	9,909,877

NM = Not Monitored

Figure MI-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Michigan

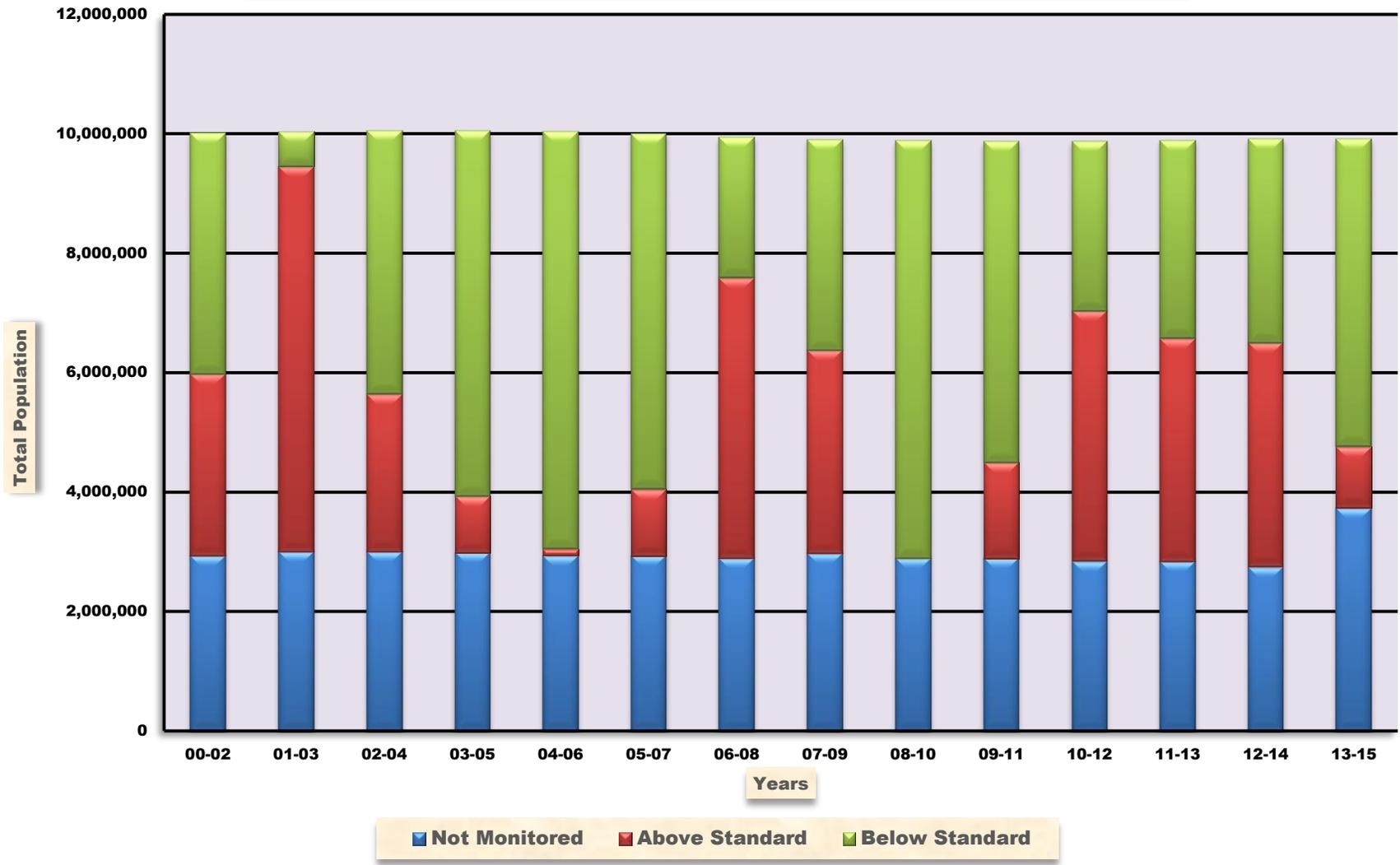


Figure MI-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Michigan

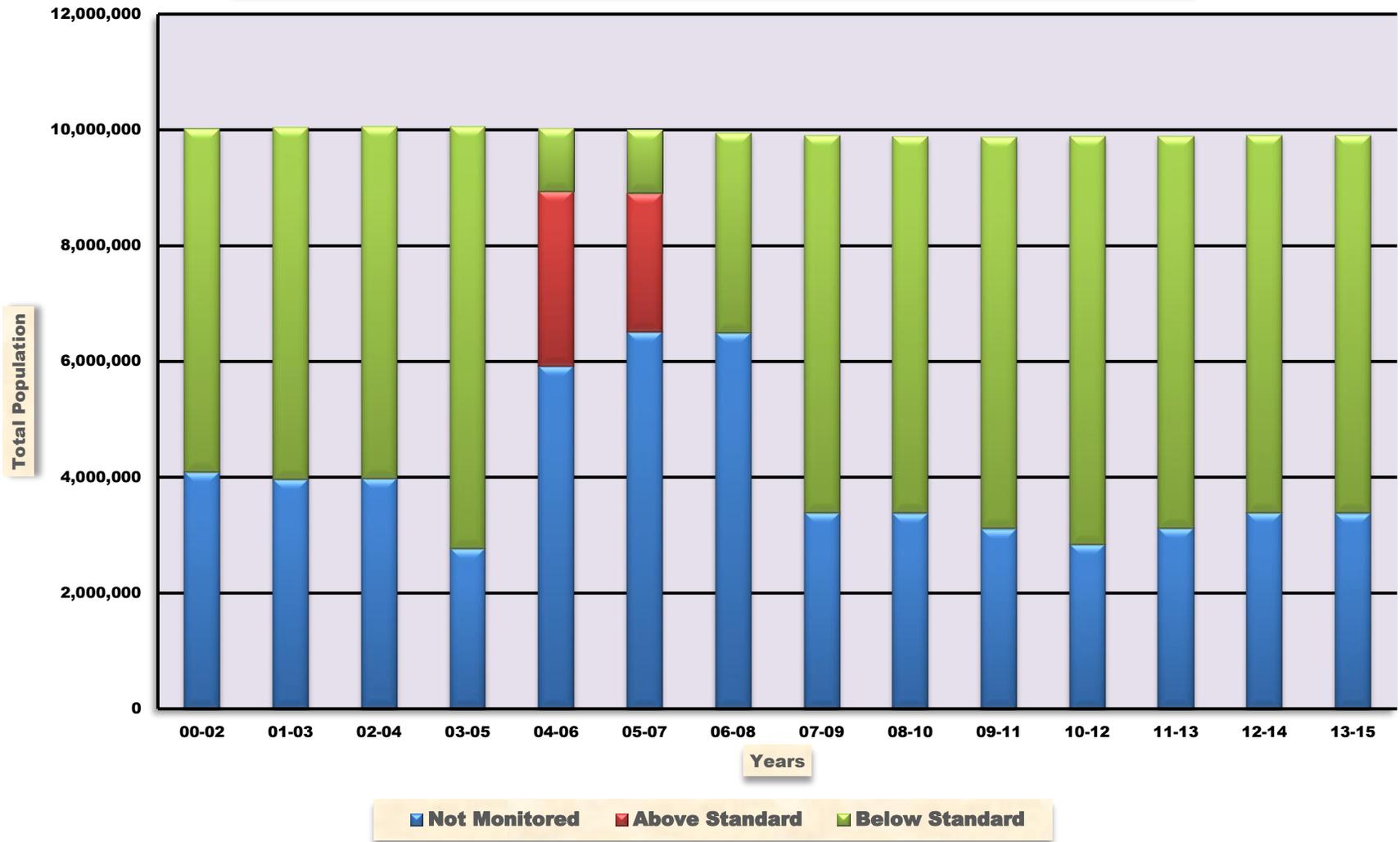
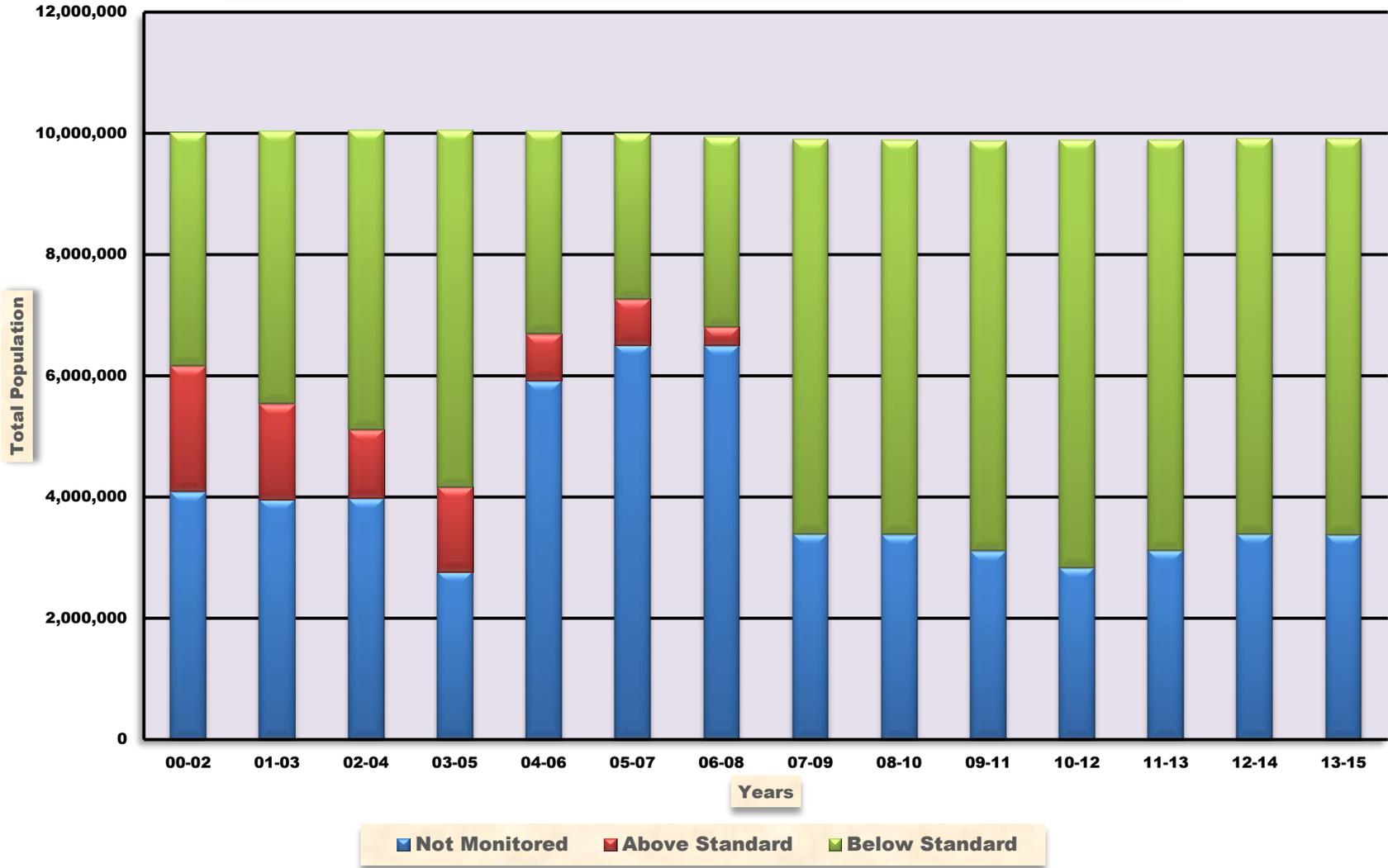


Figure MI-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Michigan



# MINNESOTA

## Ozone

In the 2000 – 2002 time period, approximately 1.1 million people (21.9%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.8 million people (51.7%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MN-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.068 ppm. By 2013 – 2015 this had lowered to a value of 0.059  $\mu\text{g}/\text{m}^3$ , a reduction of 13.2 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.4 million people (46.9%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.7 million people (66.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure MN-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 19  $\mu\text{g}/\text{m}^3$ , a reduction of 34.5 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.4 million people (46.9%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 3.7 million people (66.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure MN-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 -2002 was 10.8  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 7.6  $\mu\text{g}/\text{m}^3$ , a reduction of 29.6 percent.

**Table MN-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Anoka	344,151	0.063	C	Y	19	A	7.8	A	N
Becker	33,386	0.062	B	N	17	A	6.2	A	N
Carlton	35,569	0.058	B	N	ND	--	ND	--	--
Crow Wing	63,428	0.059	B	N	16	A	5.1	A	N
Dakota	414,686	ND	--	--	18	A	6.6	A	N
Goodhue	46,435	0.061	B	N	ND	--	ND	--	--
Hennepin	1,223,149	0.058	B	N	19	A	8.2	A	Y
Lake	10,631	0.056	B	N	14	A	4.8	A	N
Lyon	25,673	0.065	C	N	ND	--	ND	--	--
Mille Lacs	25,788	0.059	B	N	ND	--	ND	--	--
Olmsted	151,436	0.061	B	N	19	A	7.4	A	Y
Ramsey	538,133	ND	--	--	20	A	8.2	A	Y
St. Louis	200,431	0.054	A	Y	18	A	8.7	A	Y
Scott	141,660	0.062	B	N	19	A	7.8	A	N
Stearns	154,708	0.061	B	N	19	A	6.1	A	N
Washington	251,597	0.060	B	N	21	A	8.2	A	Y
Wright	131,311	0.061	B	N	19	A	6.6	A	N
<b>Subtotal</b>	<b>3,792,172</b>								
Not Monitored	1,697,422								
<b>Total</b>	<b>5,489,594</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table MN-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.068	29	10.8
2001 – 2003	0.069	26	10.2
2002 – 2004	0.066	25	9.5
2003 – 2005	0.067	26	9.5
2004 – 2006	0.065	25	9.2
2005 – 2007	0.068	25	9.4
2006 – 2008	0.064	24	9.4
2007 – 2009	0.062	29	9.7
2008 - 2010	0.059	30	9.5
2009 – 2011	0.060	29	9.0
2010 – 2012	0.062	25	8.7
2011 – 2013	0.062	22	8.5
2012 - 2014	0.062	21	8.0
2013 - 2015	0.059	19	7.6

**MINNESOTA**  
**Table MN-3**  
**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	2011-2013	2012-2014	2013-2015
A	579,899	211,238	612,263	637,701	1,104,785	380,090	199,745	382,301	420,335	356,507	356,672	246,777	336,349	100,216
B	518,883	898,037	532,580	675,890	276,987	963,685	770,045	1,095,159	1,076,539	1,188,290	980,889	1,100,777	1,269,283	2,541,389
C	0	0	0	0	0	0	354,859	0	0	0	0	0	0	197,749
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,098,782	1,109,275	1,144,843	1,313,591	1,381,772	1,343,775	1,324,649	1,477,460	1,496,874	1,544,796	1,337,560	1,347,554	1,605,632	2,839,353
NM	3,920,153	3,944,297	3,942,870	3,806,007	3,781,783	3,863,428	3,922,369	3,803,743	3,807,051	3,800,065	4,041,579	4,072,826	3,851,541	2,650,241
Total	5,018,935	5,053,572	5,087,713	5,119,598	5,163,555	5,207,203	5,247,018	5,281,203	5,303,925	5,344,861	5,379,139	5,420,380	5,457,173	5,489,594

**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	2011-2013	2012-2014	2013-2015
A	2,352,794	2,598,792	2,676,611	2,642,821	2,168,851	2,541,290	2,561,072	504,551	350,868	351,598	2,560,221	3,138,112	3,417,880	3,658,707
B	0	0	0	0	352,304	0	0	1,940,443	1,825,153	1,848,762	520,152	0	0	0
C	0	0	0	0	0	0	0	253,295	0	514,696	0	0	0	0
D	0	0	0	0	0	0	0	0	508,640	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,352,794	2,598,792	2,676,611	2,642,821	2,521,155	2,541,290	2,561,072	2,698,289	2,684,661	2,715,056	3,080,373	3,138,112	3,417,880	3,658,707
NM	2,666,141	2,454,780	2,411,102	2,476,777	2,642,400	2,665,913	2,685,946	2,582,914	2,619,264	2,629,805	2,298,766	2,282,268	2,039,293	1,830,887
Total	5,018,935	5,053,572	5,087,713	5,119,598	5,163,555	5,207,203	5,247,018	5,281,203	5,303,925	5,344,861	5,379,139	5,420,380	5,457,173	5,489,594

**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	2011-2013	2012-2014	2013-2015
A	2,097,503	2,345,813	2,676,611	2,642,821	2,521,155	2,541,290	2,561,072	2,698,289	2,684,661	2,715,056	3,080,373	2,874,755	3,241,328	3,658,707
B	255,291	252,979	0	0	0	0	0	0	0	0	0	263,357	177,552	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,352,794	2,598,792	2,676,611	2,642,821	2,521,155	2,541,290	2,561,072	2,698,289	2,684,661	2,715,056	3,080,373	3,138,112	3,417,880	3,658,707
NM	2,666,141	2,454,780	2,411,102	2,476,777	2,642,400	2,665,913	2,685,946	2,582,914	2,619,264	2,629,805	2,298,766	2,282,268	2,039,283	1,830,887
Total	5,018,935	5,053,572	5,087,713	5,119,598	5,163,555	5,207,203	5,247,018	5,281,203	5,303,925	5,344,861	5,379,139	5,420,380	5,457,173	5,489,594

NM = Not Monitored

Figure MN-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Minnesota

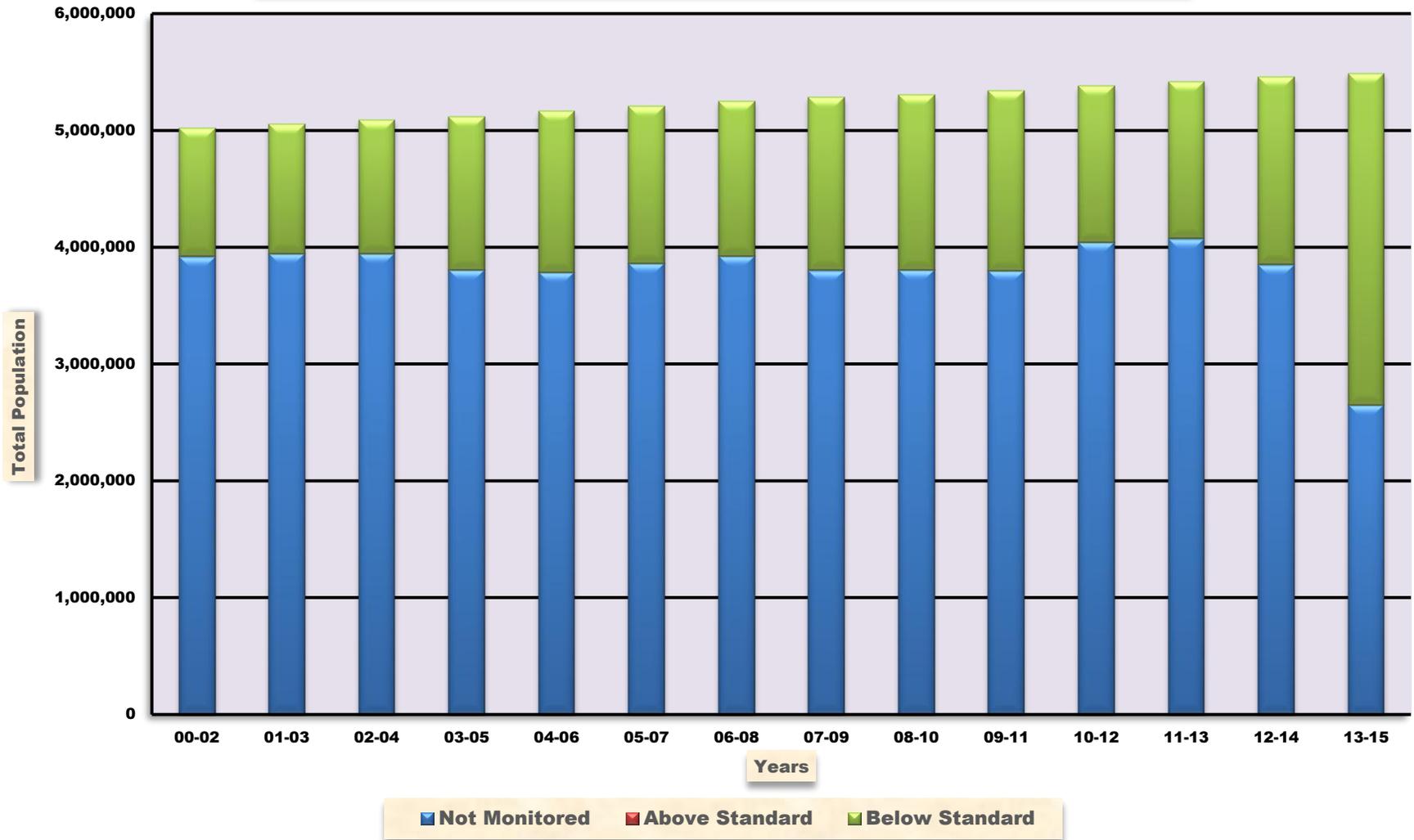


Figure MN-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Minnesota**

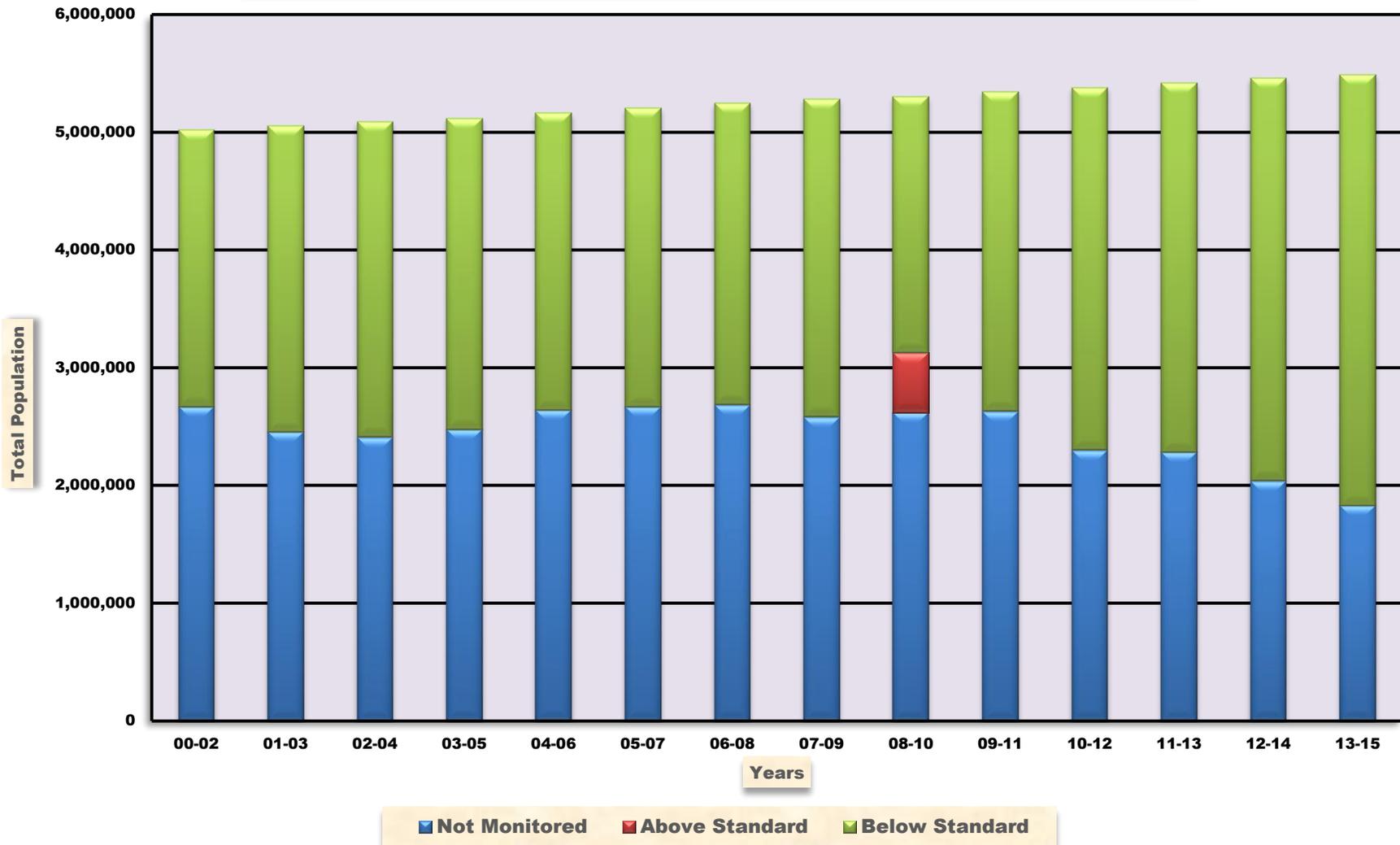
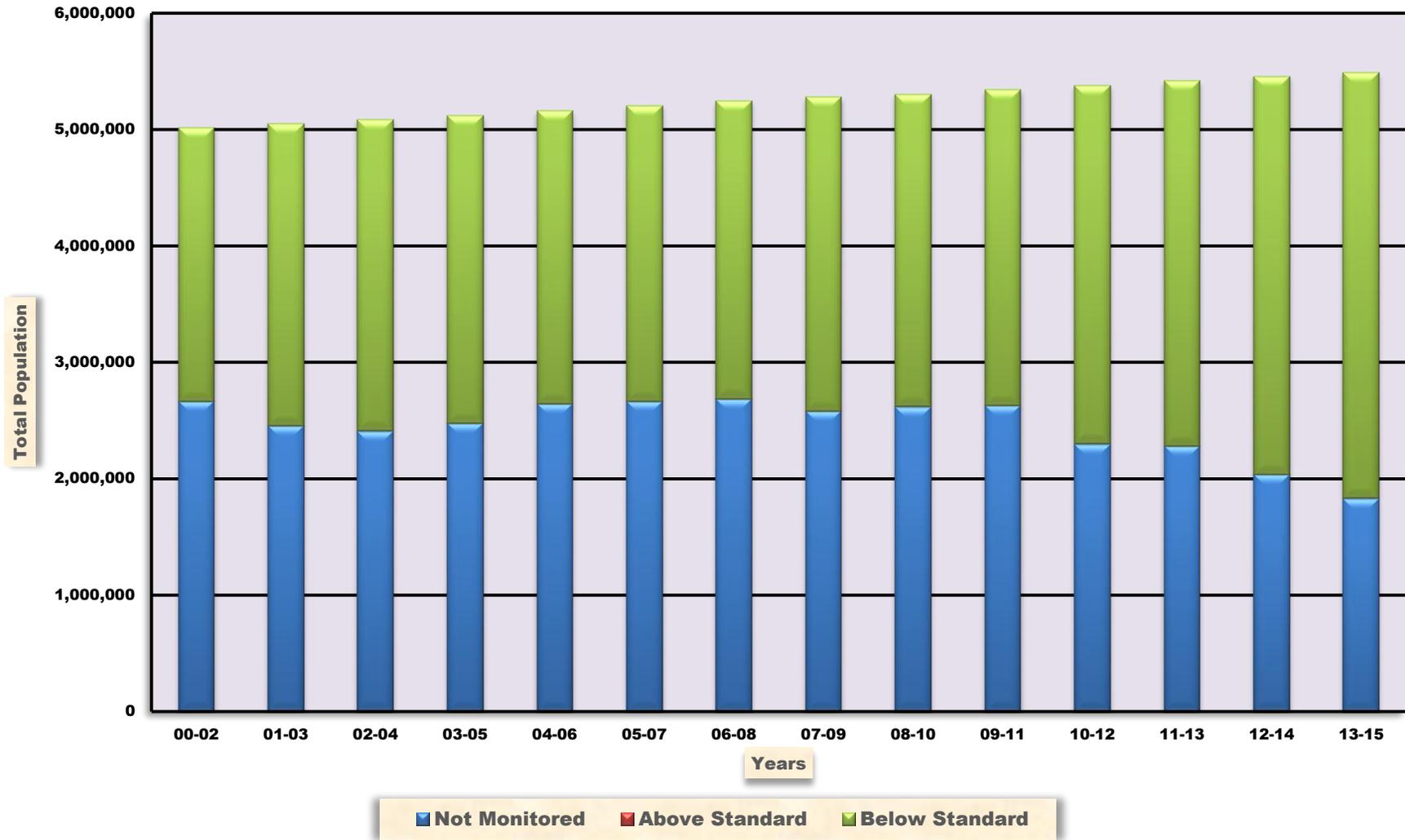


Figure MN-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Minnesota



# MISSISSIPPI

## Ozone

In the 2000 – 2002 time period, approximately 1.0 million people (34.0%) lived in counties that met the ozone standard. By 2013 – 2015 this was approximately 1.0 million people (33.9%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MS-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.080 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 20.0 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.4 million people (47.6%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.9 million people (30.2%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure MS-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 30 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 20 µg/m<sup>3</sup>, a reduction of 33.3 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.4 million people (47.6%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 0.9 million people (30.2%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m<sup>3</sup> to 12 µg/m<sup>3</sup>. Figure MS-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 13.0 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.4 µg/m<sup>3</sup>, a reduction of 27.7percent.

**Table MS-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg.24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bolivar	33,322	0.062	B	N	ND	--	ND	--	--
Desoto	173,323	0.064	C	N	20	A	9.4	A	N
Forrest	75,944	ND	--	--	20	A	10.0	B	N
Grenada	21,758	ND	--	--	19	A	8.1	A	N
Hancock	46,420	0.064	B	N	18	A	8.6	A	N
Harrison	201,410	0.067	C	N	19	A	8.8	A	N
Hinds	242,891	0.062	B	N	21	A	10.2	B	N
Jackson	141,425	0.068	C	N	19	A	9.2	A	N
Lauderdale	78,524	0.058	B	N	ND	--	ND	--	--
Lee	85,300	0.059	B	N	ND	--	ND	--	--
Yalobusha	12,447	0.058	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>1,112,764</b>								
Not Monitored	1,879,569								
<b>Total</b>	<b>2,992,333</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table MS-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.080	30	13.0
2001 – 2003	0.077	28	12.4
2002 – 2004	0.075	28	12.2
2003 – 2005	0.075	30	12.7
2004 – 2006	0.077	30	12.5
2005 – 2007	0.078	29	12.6
2006 – 2008	0.076	26	12.0
2007 – 2009	0.072	24	11.3
2008 - 2010	0.070	22	10.7
2009 – 2011	0.070	21	10.4
2010 – 2012	0.070	20	10.4
2011 – 2013	0.068	20	9.9
2012 - 2014	0.066	20	9.6
2013 - 2015	0.064	20	9.4

# MISSISSIPPI

## Table MS-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	403,928	492,501	746,045	542,007	476,058	474,418	0	357,054	440,753	412,815	210,517	468,432	500,707	452,484
C	569,153	606,605	320,394	403,656	452,386	465,770	473,522	256,062	335,065	528,765	783,118	539,239	511,108	562,578
D	118,603	0	0	0	0	0	476,740	344,636	187,105	0	0	0	0	0
F	118,603	0	0	0	0	0	476,740	344,636	187,105	0	0	0	0	0
Subtotal	1,091,684	1,099,106	1,066,438	945,662	928,444	940,188	950,262	957,752	962,923	941,580	993,635	1,007,671	1,011,815	1,015,062
NM	1,766,997	1,769,206	1,822,572	1,960,281	1,976,534	1,988,162	1,997,544	2,001,022	2,004,374	2,036,932	1,991,291	1,983,536	1,982,264	1,977,271
Total	2,858,681	2,868,312	2,889,010	2,905,943	2,904,978	2,928,350	2,947,806	2,958,774	2,967,297	2,978,512	2,984,926	2,991,207	2,994,079	2,992,333

## 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	2011-2013	2012-2014	2013-2015
A	1,359,485	1,417,578	1,435,927	1,270,671	988,309	393,876	927,921	1,181,757	1,127,524	1,118,081	1,126,938	963,287	898,782	903,171
B	0	0	0	0	139,080	679,724	223,015	0	0	0	0	0	0	0
C	0	0	0	0	0	66,760	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,359,485	1,417,578	1,435,927	1,270,671	1,127,389	1,140,360	1,150,936	1,181,757	1,127,524	1,118,081	1,126,938	963,287	898,782	903,171
NM	1,499,196	1,450,734	1,453,083	1,635,272	1,777,589	1,787,990	1,796,870	1,777,017	1,839,773	1,860,431	1,857,988	2,027,920	2,095,297	2,089,162
Total	2,858,681	2,868,312	2,889,010	2,905,943	2,904,978	2,928,350	2,947,806	2,958,774	2,967,297	2,978,512	2,984,926	2,991,207	2,994,079	2,992,333

## 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	2011-2013	2012-2014	2013-2015
A	270,933	482,872	539,851	32,674	33,220	347,971	544,401	959,176	1,127,524	1,118,081	1,126,938	207,628	578,723	584,336
B	444,771	869,793	830,780	172,126	954,620	651,572	465,021	222,581	0	0	0	609,639	320,059	318,835
C	643,781	64,913	65,296	65,871	139,549	140,817	141,514	0	0	0	0	146,020	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,359,485	1,417,578	1,435,927	1,270,671	1,127,389	1,140,360	1,150,936	1,181,757	1,127,524	1,118,081	1,126,938	963,287	898,782	903,171
NM	1,499,196	1,450,734	1,453,083	1,635,272	1,777,589	1,787,990	1,795,870	1,770,017	1,839,773	1,860,431	1,857,988	2,027,920	2,095,297	2,089,162
Total	2,858,681	2,868,312	2,889,010	2,905,943	2,904,978	2,928,350	2,947,806	2,958,774	2,967,297	2,978,512	2,984,926	2,991,207	2,994,079	2,992,333

NM = Not Monitored

Figure MS-1

People Breathing Various Air Quality Levels - 8 Hour Ozone  
Mississippi

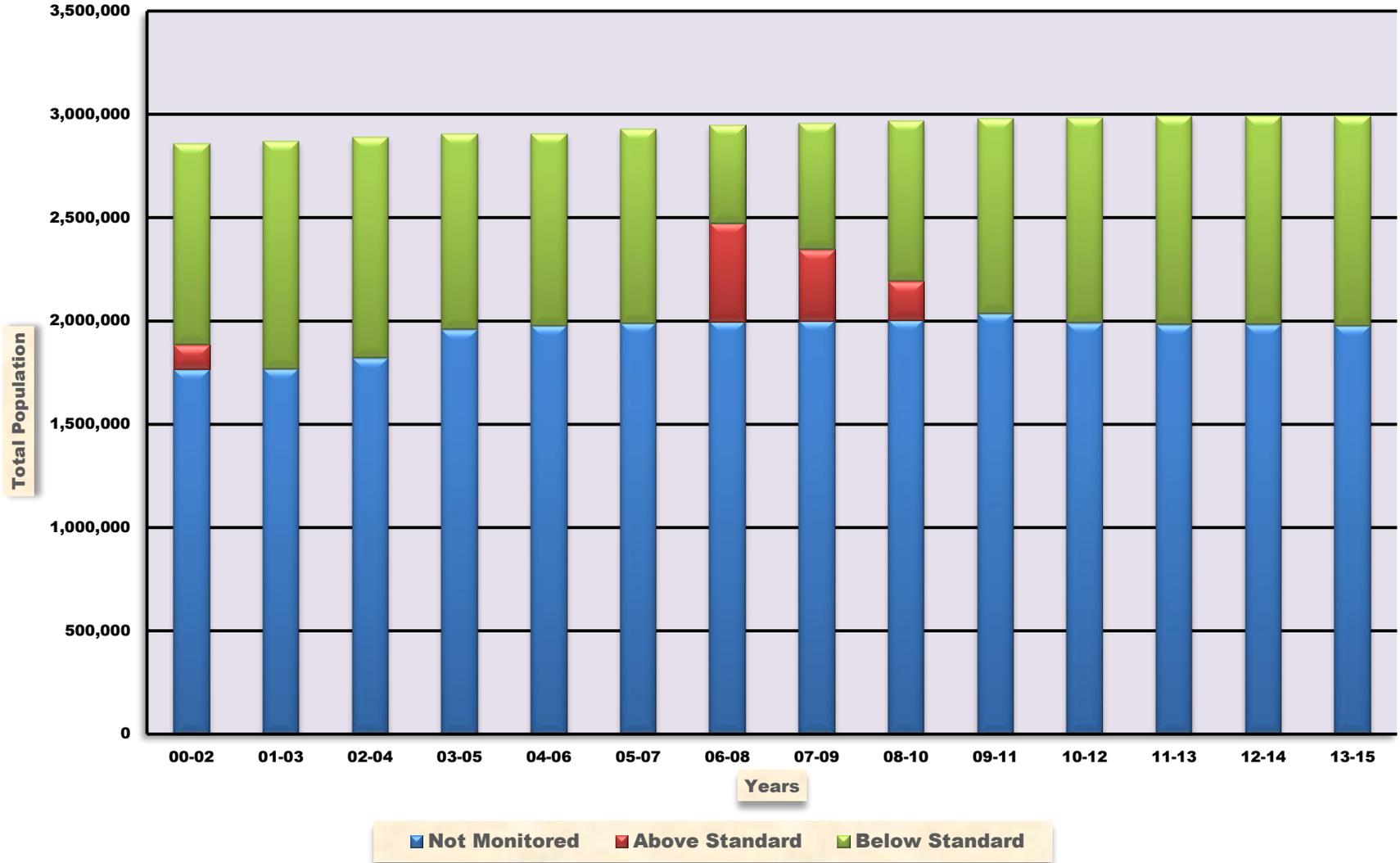


Figure MS-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Mississippi

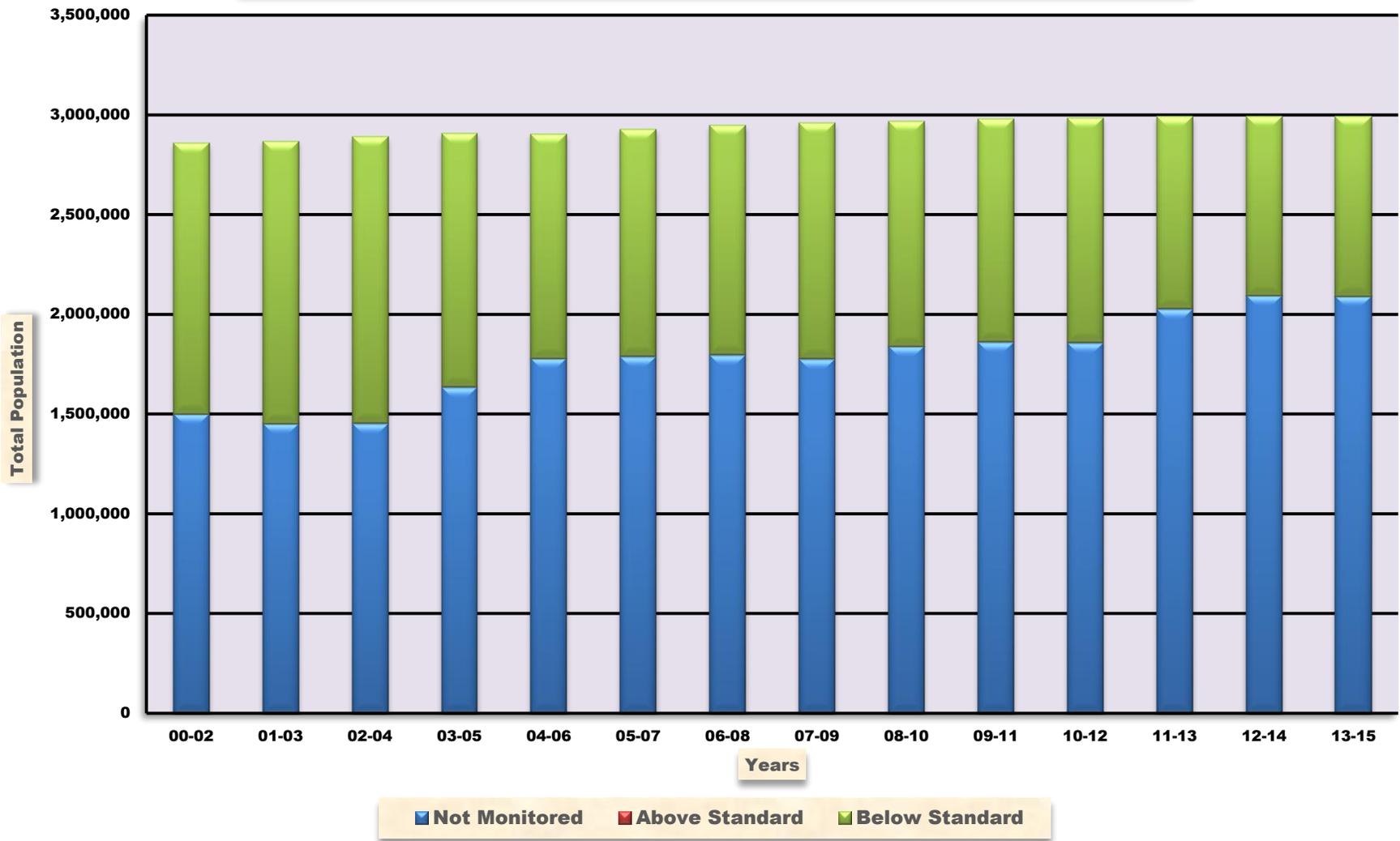
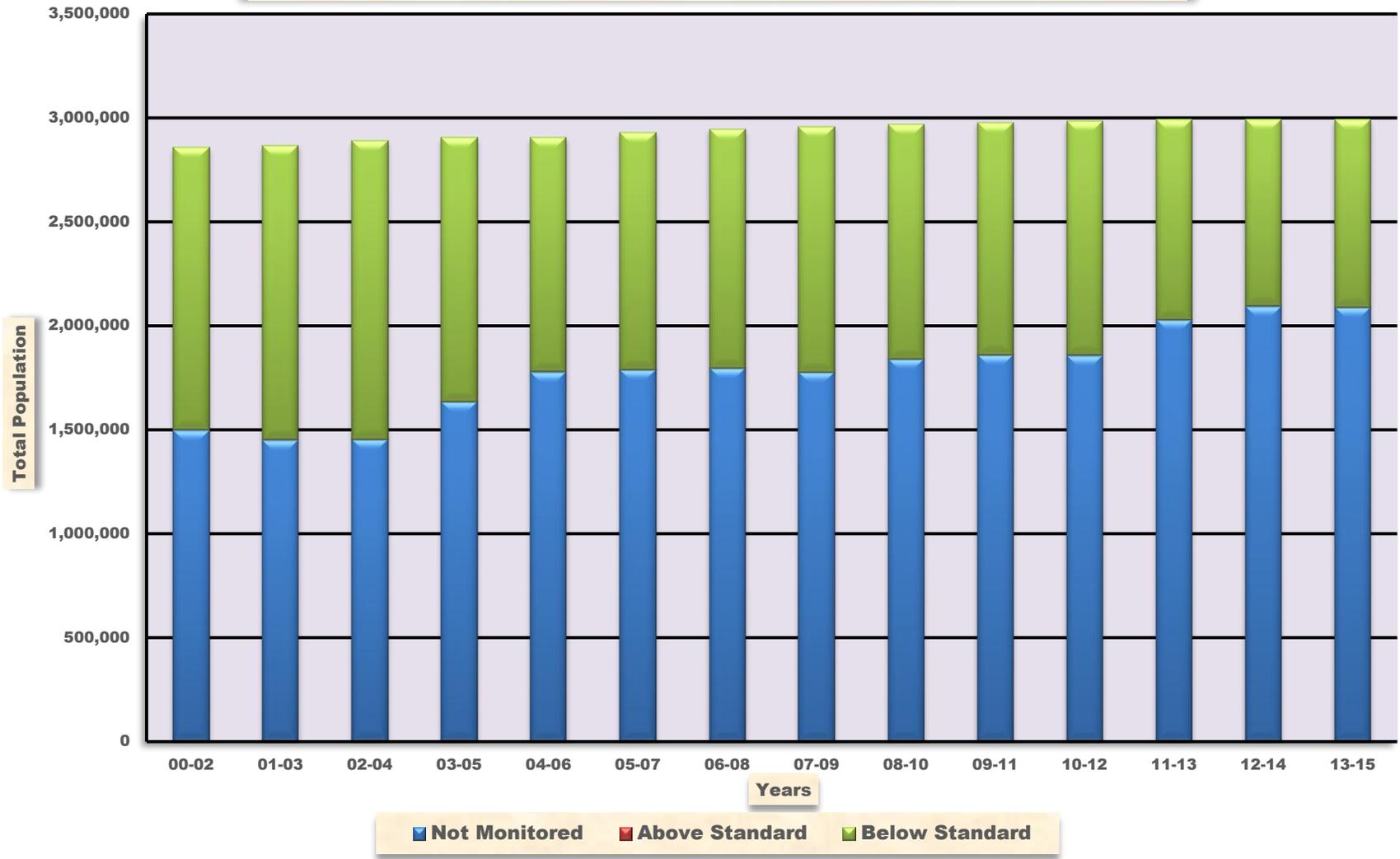


Figure MS-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Mississippi



# MISSOURI

## Ozone

In the 2000 – 2002 time period, approximately 1.2 million people (21.5%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.9 million people (47.8%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MO-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.084 ppm. By 2013 – 2015 this had lowered to a value of 0.066 ppm, a reduction of 21.4 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 3.1 million people (54.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 2.7 million people (43.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure MO-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 32  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 28.1 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.8 million people (50.2%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 2.7 million people (43.9%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15  $\mu\text{g}/\text{m}^3$  to 12  $\mu\text{g}/\text{m}^3$ . Figure MO-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 13.6  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 10.1  $\mu\text{g}/\text{m}^3$ , a reduction of 25.7 percent.

**Table MO-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Andrew	17,296	0.064	C	N	ND	--	ND	--	--
Boone	174,974	0.063	C	N	ND	--	ND	--	--
Buchanan	89,100	ND	--	--	24	A	10.7	B	N
Callaway	44,834	0.063	C	N	ND	--	ND	--	--
Cass	101,603	0.064	C	N	22	A	9.5	A	N
Cedar	13,934	0.063	C	N	19	A	7.9	A	N
Clay	235,637	0.066	C	Y	20	A	8.6	A	N
Clinton	20,309	0.067	C	N	ND	--	ND	--	--
Greene	288,072	0.061	B	Y	ND	--	ND	--	--
Jackson	687,623	ND	--	--	21	A	9.5	A	N
Jasper	118,596	0.065	C	N	ND	--	ND	--	--
Jefferson	224,124	0.070	C	N	24	A	10.6	B	N
Lincoln	54,696	0.068	C	N	ND	--	ND	--	--
Monroe	8,583	0.059	B	N	ND	--	ND	--	--
Perry	19,183	0.066	C	N	ND	--	ND	--	--
St Charles	385,590	0.070	C	Y	ND	--	ND	--	--
St Genevieve	17,919	0.065	C	N	ND	--	ND	--	--
St Louis	1,003,362	0.067	C	N	24	A	10.6	B	N
Taney	54,592	0.060	B	N	ND	--	ND	--	--
St Louis City	315,685	0.065	C	N	24	A	10.5	B	Y
<b>Subtotal</b>	<b>3,875,712</b>								
Not Monitored	2,207,960								
<b>Total</b>	<b>6,083,672</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table MO-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.084	32	13.6
2001 – 2003	0.084	31	13.0
2002 – 2004	0.080	31	12.8
2003 – 2005	0.080	32	13.0
2004 – 2006	0.079	30	12.4
2005 – 2007	0.084	31	13.0
2006 – 2008	0.078	27	12.1
2007 – 2009	0.074	25	11.3
2008 - 2010	0.070	24	11.3
2009 – 2011	0.072	27	11.4
2010 – 2012	0.078	25	10.7
2011 – 2013	0.076	23	10.4
2012 - 2014	0.072	22	10.0
2013 - 2015	0.066	23	10.1

# MISSOURI

**Table MO-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	245,822	360,943	518,637	373,308	399,660	23,385	270,901	121,813	759,364	956,786	0	0	250,620	351,247
C	971,769	481,074	1,525,757	2,005,149	2,049,241	984,951	121,372	1,309,903	1,805,102	1,823,059	1,104,676	1,230,922	1,951,832	2,554,947
D	1,285,545	1,639,626	485,223	164,446	268,976	1,577,126	1,816,808	968,355	180,243	203,365	1,658,648	1,835,131	880,431	192,795
F	0	0	0	0	0	0	175,590	0	0	0	184,333	0	0	0
Subtotal	2,501,136	2,481,643	2,529,617	2,542,903	2,717,877	2,585,462	2,384,670	2,400,071	2,744,708	2,983,209	2,947,657	3,066,253	3,082,882	1,098,989
NM	3,173,689	3,227,760	3,218,124	3,247,397	3,124,827	3,302,150	3,539,246	3,561,017	3,244,219	3,027,479	3,074,331	2,977,918	2,980,707	2,984,683
Total	5,674,825	5,709,403	5,747,741	5,790,300	5,842,704	5,887,612	5,923,916	5,961,088	5,988,927	6,010,688	6,021,988	6,044,171	6,063,589	6,083,672

**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	2011-2013	2012-2014	2013-2015
A	3,072,149	2,882,645	465,575	3,267,666	533,772	96,845	1,337,882	681,750	434,821	1,008,377	2,557,748	1,219,808	1,847,203	2,671,068
B	0	0	810,640	0	1,887,221	1,229,490	1,902,063	318,842	159,647	0	0	0	0	0
C	0	0	850,507	0	871,188	1,895,984	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,072,149	2,882,645	2,126,721	3,267,666	3,292,181	3,222,319	3,239,945	1,000,592	594,468	1,008,377	2,557,748	1,219,808	1,947,203	2,671,068
NM	2,602,676	2,826,758	3,621,020	2,522,634	2,550,523	2,665,293	2,683,971	4,960,496	5,394,459	4,980,550	3,452,940	4,802,180	4,116,386	3,412,604
Total	5,674,825	5,709,403	5,747,741	5,790,300	5,842,704	5,887,612	5,923,916	5,961,088	5,988,927	6,010,688	6,021,988	6,044,171	6,063,589	6,083,672

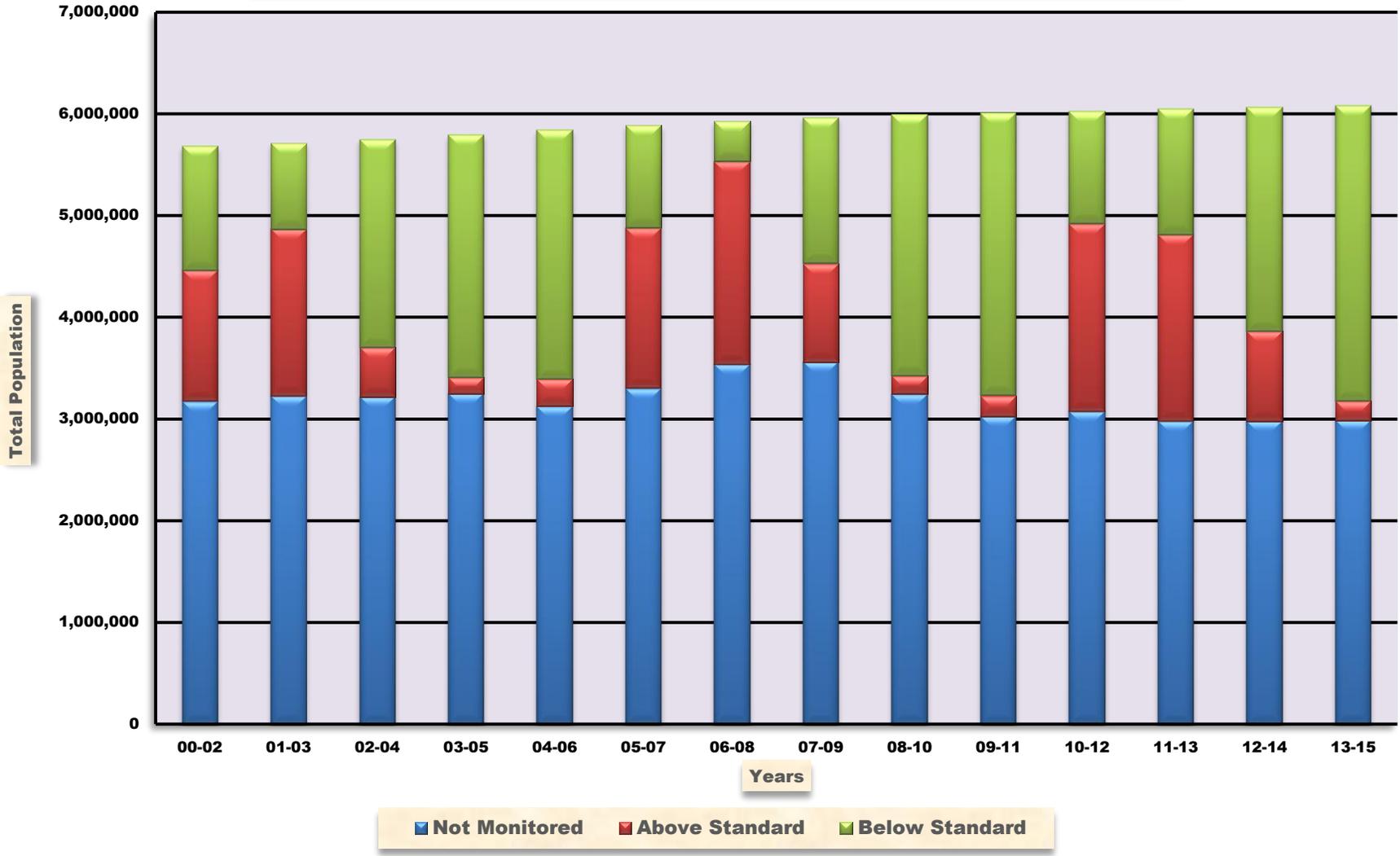
**People Breathing Year Round Particle Pollution (Annual PM-2.5)**

Grade	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015
A	205,293	111,269	2,126,721	722,753	1,070,411	575,600	1,249,565	681,750	275,174	690,308	2,457,572	0	533,502	694,986
B	756,711	2,199,227	0	1,662,701	1,688,535	2,113,812	1,884,395	239,132	319,294	318,069	100,176	901,392	1,112,602	1,870,854
C	1,884,508	488,426	0	882,212	533,236	532,907	105,985	79,711	0	0	0	318,416	301,099	105,228
D	225,638	83,723	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,072,149	2,882,645	2,126,721	3,267,666	3,292,181	3,222,319	3,239,945	1,000,592	594,468	1,008,377	2,557,748	1,219,808	1,947,203	2,671,068
NM	2,602,676	2,826,758	3,621,020	2,522,634	2,550,523	2,665,293	2,683,971	4,960,496	5,394,459	4,980,550	3,452,940	4,802,180	4,116,386	3,412,604
Total	5,674,825	5,709,403	5,747,741	6,790,300	5,842,704	5,887,612	5,923,916	5,961,088	5,988,927	6,010,688	6,021,988	6,044,171	6,063,589	6,083,672

NM = Not Monitored

Figure MO-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Missouri



**Figure MO-2**

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Missouri**

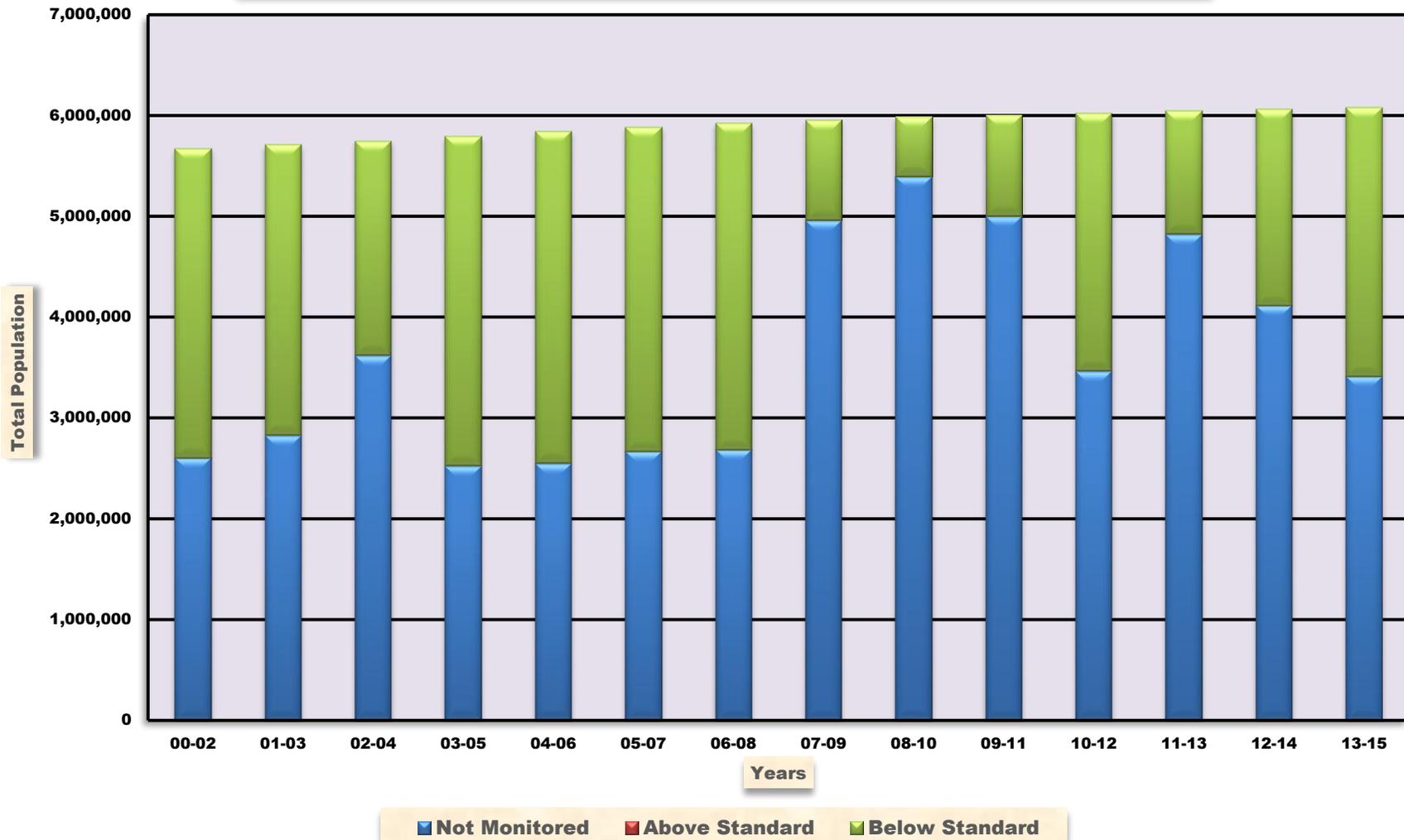
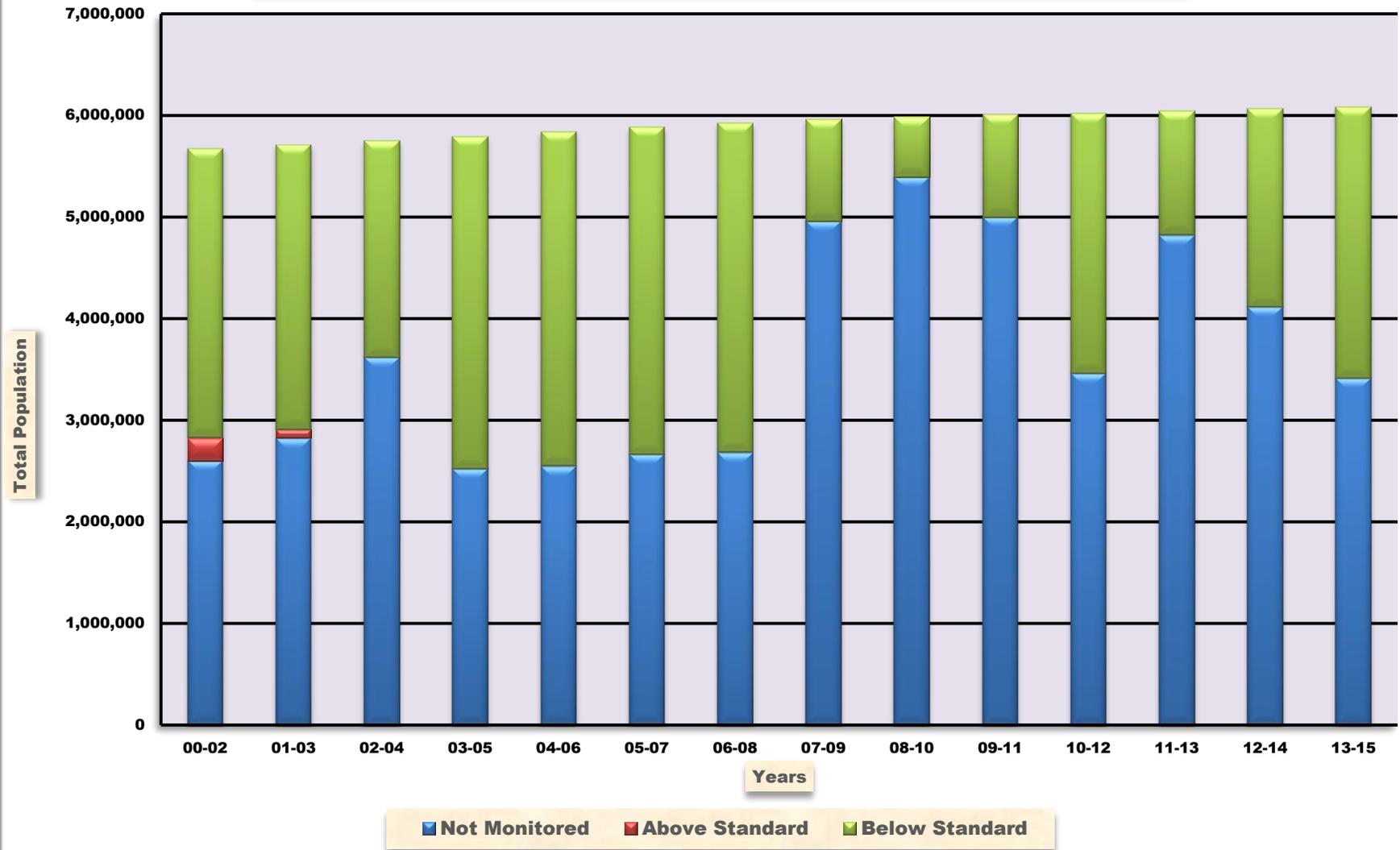


Figure MO-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Missouri



# MONTANA

## Ozone

In the 2000 – 2002 time period, approximately 78 thousand people (8.5%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 313 thousand people (30.4%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure MT-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.052 ppm. By 2013 – 2015 this had increased to 0.055 ppm, an increase of 5.8 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.54 million people (59.2%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.41 million people (39.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m3 to 35 µg/m3. Figure MT-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 - 2002 was 27 µg/m3. By 2013 – 2015 this had lowered to a value of 23 µg/m3, a reduction of 14.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.52 million people (57.1.6%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 0.41 million people (39.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 µg/m3 to 12 µg/m3. Figure MT-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.4 µg/m3. By 2013 – 2015 this had lowered to a value of 7.4 µg/m3, a reduction of 11.9 percent.

**Table MT-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Fergus	11,427	0.055	A	N	10	A	3.8	A	N
Flathead	96,165	0.054	A	N	25	A	8.1	A	N
Lewis & Clark	66,418	0.056	B	N	18	A	5.3	A	Y
Lincoln	19,052	ND	--	--	27	A	10.2	B	N
Missoula	114,181	0.055	A	N	24	A	8.0	A	Y
Phillips	4,169	0.055	A	N	10	A	4.1	A	N
Powder River	1,773	ND	--	--	14	A	5.4	A	N
Ravalli	41,373	ND	--	--	30	B	7.2	A	N
Richland	11,960	0.055	A	N	13	A	6.2	A	N
Rosebud	9,398	0.055	A	N	12	A	4.7	A	N
Silver Bow	34,622	ND	--	--	30	B	8.7	A	N
<b>Subtotal</b>	<b>410,538</b>								
Not Monitored	622,411								
<b>Total</b>	<b>1,032,949</b>								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table MT-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.052	27	8.4
2001 – 2003	0.054	23	7.1
2002 – 2004	0.055	21	6.7
2003 – 2005	0.057	24	7.3
2004 – 2006	0.056	25	8.1
2005 – 2007	0.058	23	7.8
2006 – 2008	0.056	21	7.7
2007 – 2009	0.055	20	7.4
2008 - 2010	0.055	25	8.1
2009 – 2011	0.055	24	7.0
2010 – 2012	0.055	27	8.0
2011 – 2013	0.054	24	7.7
2012 - 2014	0.054	23	7.5
2013 - 2015	0.055	23	7.4

# MONTANA

**Table MT-3  
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	2011-2013	2012-2014	2013-2015
A	77,583	79,643	81,247	85,759	85,759	229,763	90,260	90,910	90,928	91,301	102,792	169,483	273,464	247,300
B	0	0	0	0	0	0	0	0	0	0	0	0	9,326	66,418
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	77,583	79,643	81,247	85,759	85,759	229,763	90,260	90,910	90,928	91,301	102,792	169,483	282,790	313,718
NM	834,084	839,987	848,762	854,343	866,933	734,943	886,155	893,072	898,487	906,898	902,349	845,682	740,789	719,231
Total	911,667	919,630	930,009	940,102	952,692	964,706	976,415	983,982	989,415	998,199	1,005,141	1,015,165	1,023,579	1,032,949

**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	2011-2013	2012-2014	2013-2015
A	539,264	258,128	263,028	267,036	358,495	468,492	584,903	527,430	120,712	172,156	131,183	320,365	354,521	334,543
B	0	0	0	0	101,521	0	0	19,657	109,200	0	40,617	34,523	34,680	75,995
C	0	0	0	0	33,441	139,599	53,353	14,008	0	0	99,279	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	123,600	19,440	0	0	0	0	0	0	0	0
Subtotal	539,264	258,128	263,028	267,036	617,057	627,531	638,256	581,095	229,912	172,156	271,079	354,888	389,201	410,538
NM	372,403	661,502	666,981	673,066	335,635	337,175	338,159	402,887	759,503	826,043	734,062	660,277	634,378	622,411
Total	911,667	919,630	930,009	940,102	952,692	964,706	976,415	983,982	989,415	998,199	1,005,141	1,015,165	1,023,579	1,032,949

**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	2011-2013	2012-2014	2013-2015
A	520,595	258,128	263,028	267,036	597,829	608,091	618,715	381,095	229,912	172,156	271,079	354,888	370,076	391,486
B	0	0	0	0	0	0	19,541	0	0	0	0	0	19,125	19,052
C	0	0	0	0	19,228	19,440	0	0	0	0	0	0	0	0
D	18,669	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	539,264	258,128	263,028	267,036	617,057	627,531	638,256	581,095	229,912	172,156	271,079	354,888	389,201	410,538
NM	372,403	661,502	666,981	673,066	335,635	337,175	338,159	402,887	759,503	826,043	734,062	660,277	634,378	622,411
Total	911,667	919,638	930,009	940,102	952,692	964,706	976,415	983,982	989,415	998,199	1,005,141	1,015,165	1,023,579	1,032,949

NM – Not Monitored

Figure MT-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Montana

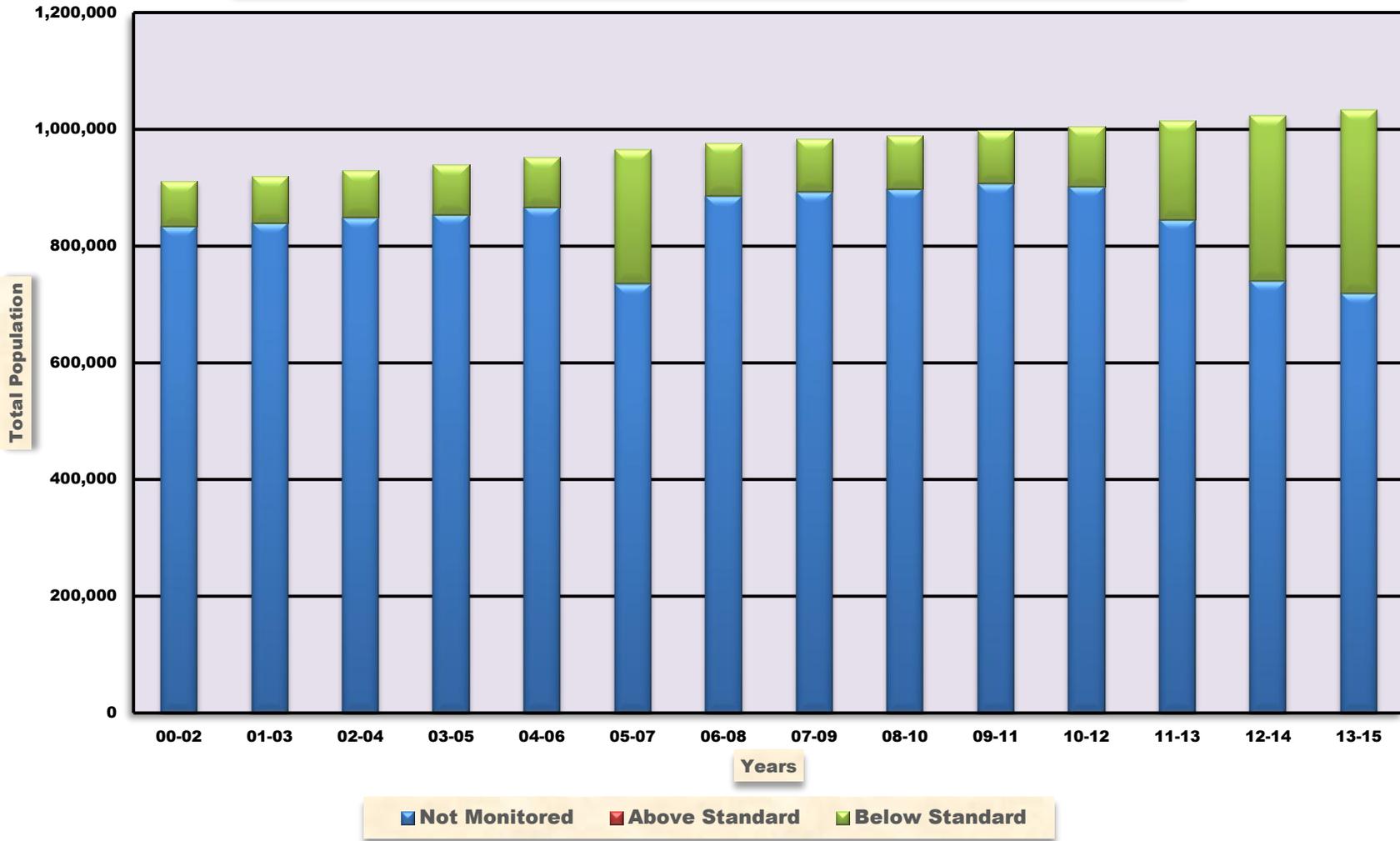


Figure MT-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Montana

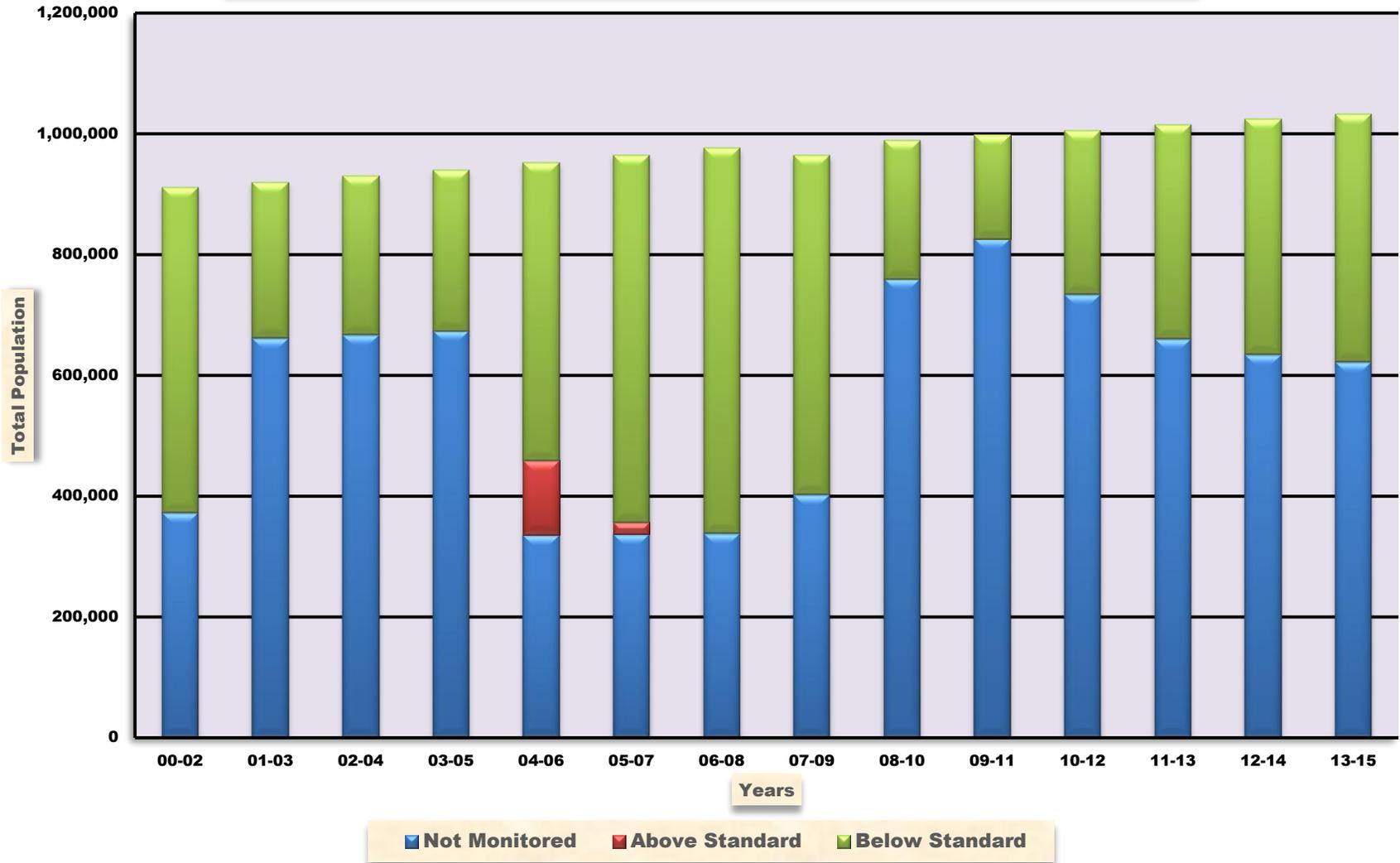
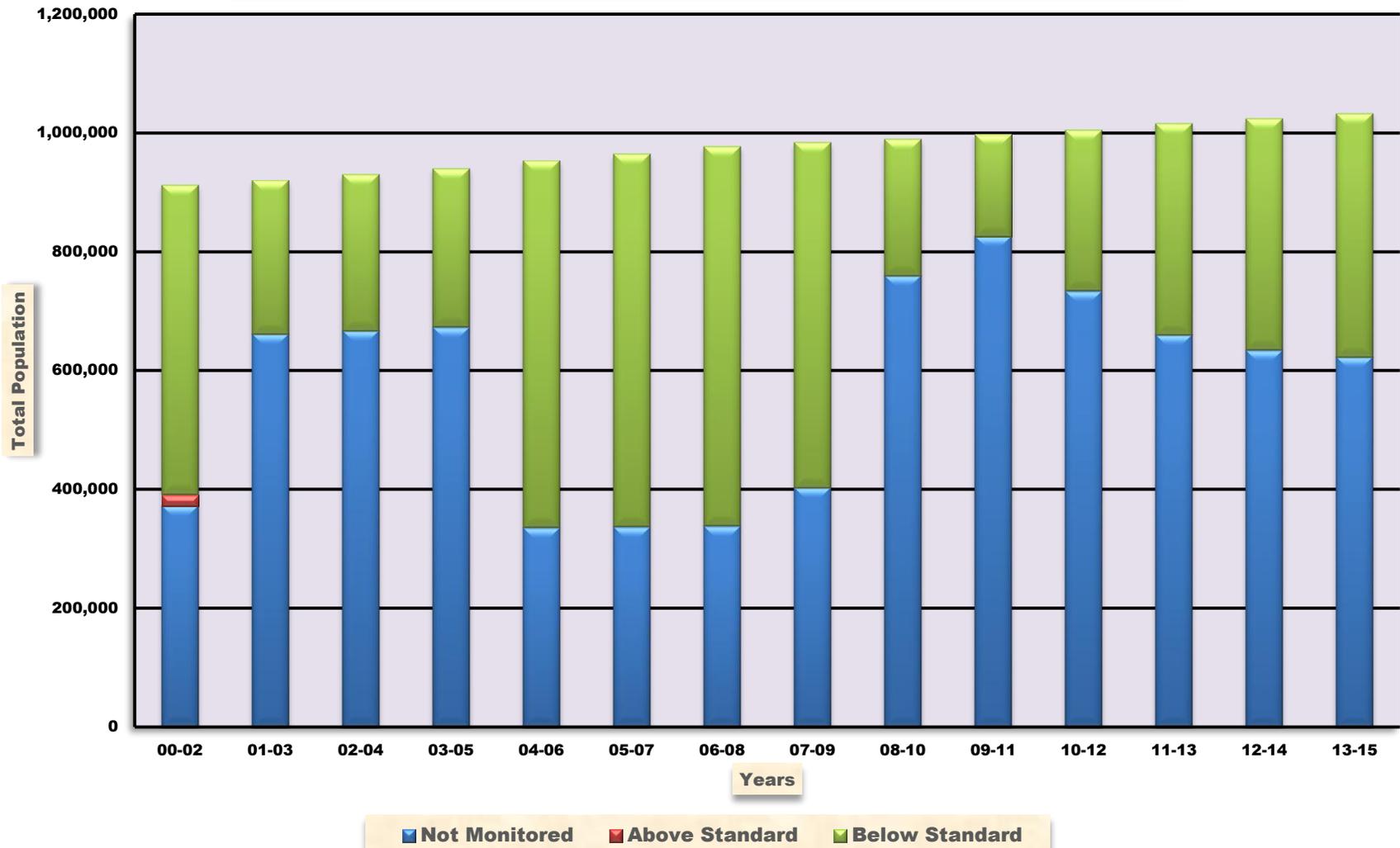


Figure MT-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Montana



# NEBRASKA

## Ozone

In the 2000 – 2002 time period, approximately 0.7 million people (42.3%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.9 million people (45.6%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NE-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.059 ppm. By 2013 – 2015 this value was still 0.059 ppm.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.9 million people (49.7%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.1 million people (58.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m<sup>3</sup>. Figure NE-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 -2002 was 25 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 20 µg/m<sup>3</sup>, a reduction of 20.0 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.9 million people (49.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 1.1 million people (58.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure NE-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 10.3 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 8.1 µg/m<sup>3</sup>, a reduction of 21.4 percent.

**Table NE-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Douglas	550,064	0.060	B	Y	20	A	8.4	A	Y
Hall	61,680	ND	--	--	17	A	5.8	A	N
Knox	8,543	0.064	C	N	ND	--	ND	--	--
Lancaster	306,408	0.058	B	N	18	A	7.3	A	N
Sarpy	175,692	ND	--	--	22	A	9.3	A	N
Washington	20,248	ND	--	--	18	A	7.4	A	N
Subtotal	1,122,635								
Not Monitored	773,555								
Total	1,896,190								

DV = Design Value

ND = No Data

MM = Multiple Monitors

**Table NE-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m<sup>3</sup>)</b>	<b>Annual PM-2.5 (µg/m<sup>3</sup>)</b>
2000 – 2002	0.059	25	10.3
2001 – 2003	0.059	26	10.1
2002 – 2004	0.061	26	9.7
2003 – 2005	0.063	28	9.9
2004 – 2006	0.063	26	9.4
2005 – 2007	0.062	24	9.3
2006 – 2008	0.058	21	8.7
2007 – 2009	0.055	20	8.6
2008 - 2010	0.054	20	8.8
2009 – 2011	0.056	22	9.2
2010 – 2012	0.059	23	9.4
2011 – 2013	0.061	22	9.4
2012 - 2014	0.062	21	8.8
2013 - 2015	0.059	20	8.1

# NEBRASKA

**Table NE-3  
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	2011-2013	2012-2014	2013-2015
A	730,264	739,368	747,162	756,982	766,043	774,755	279,605	854,999	802,517	814,661	293,407	297,036	301,795	0
B	0	0	0	0	0	0	504,547	0	0	0	531,265	537,252	543,244	856,532
C	0	0	0	0	0	0	0	0	0	0	0	8,565	8,482	8,543
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	730,264	739,368	747,162	756,982	766,043	774,755	784,152	854,999	802,517	814,661	824,672	742,857	853,521	865,075
NM	998,028	999,275	1,002,208	1,004,515	1,006,650	1,008,685	1,012,226	957,684	1,023,824	1,027,980	1,030,853	1,025,659	1,037,982	1,031,115
Total	1,728,292	1,738,643	1,749,370	1,761,497	1,772,693	1,783,440	1,796,378	1,812,683	1,826,341	1,842,641	1,855,525	1,868,516	1,881,503	1,896,190

**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	2011-2013	2012-2014	2013-2015
A	858,558	868,286	772,236	782,152	930,169	1,035,252	1,050,346	1,029,225	881,358	894,433	905,269	1,084,566	1,098,982	1,114,152
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	858,558	868,286	772,236	782,152	930,169	1,035,252	1,050,346	1,029,225	881,358	894,433	905,269	1,084,566	1,098,982	1,114,152
NM	869,734	870,357	977,134	979,345	842,524	748,188	746,032	783,458	944,983	948,208	950,256	783,950	782,521	782,038
Total	1,728,292	1,738,643	1,749,370	1,761,497	1,772,693	1,783,440	1,796,378	1,812,683	1,826,341	1,842,641	1,855,525	1,868,516	1,881,503	1,896,190

**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	2011-2013	2012-2014	2013-2015
A	858,558	868,286	772,236	782,152	930,169	1,035,252	1,050,346	1,029,225	881,158	894,433	905,269	1,084,566	926,789	1,114,152
B	0	0	0	0	0	0	0	0	0	0	0	0	172,193	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	858,558	868,286	772,236	782,152	930,169	1,035,252	1,050,346	1,029,225	881,358	894,433	905,269	1,084,566	1,098,982	1,114,152
NM	869,734	870,357	977,134	979,345	842,524	748,188	746,032	783,458	944,983	948,208	950,256	783,950	782,521	782,038
Total	1,728,292	1,738,643	1,749,370	1,761,497	1,772,693	1,783,440	1,796,378	1,812,683	1,826,341	1,842,641	1,855,525	1,868,516	1,881,503	1,896,190

NM = Not Monitored

Figure NE-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Nebraska

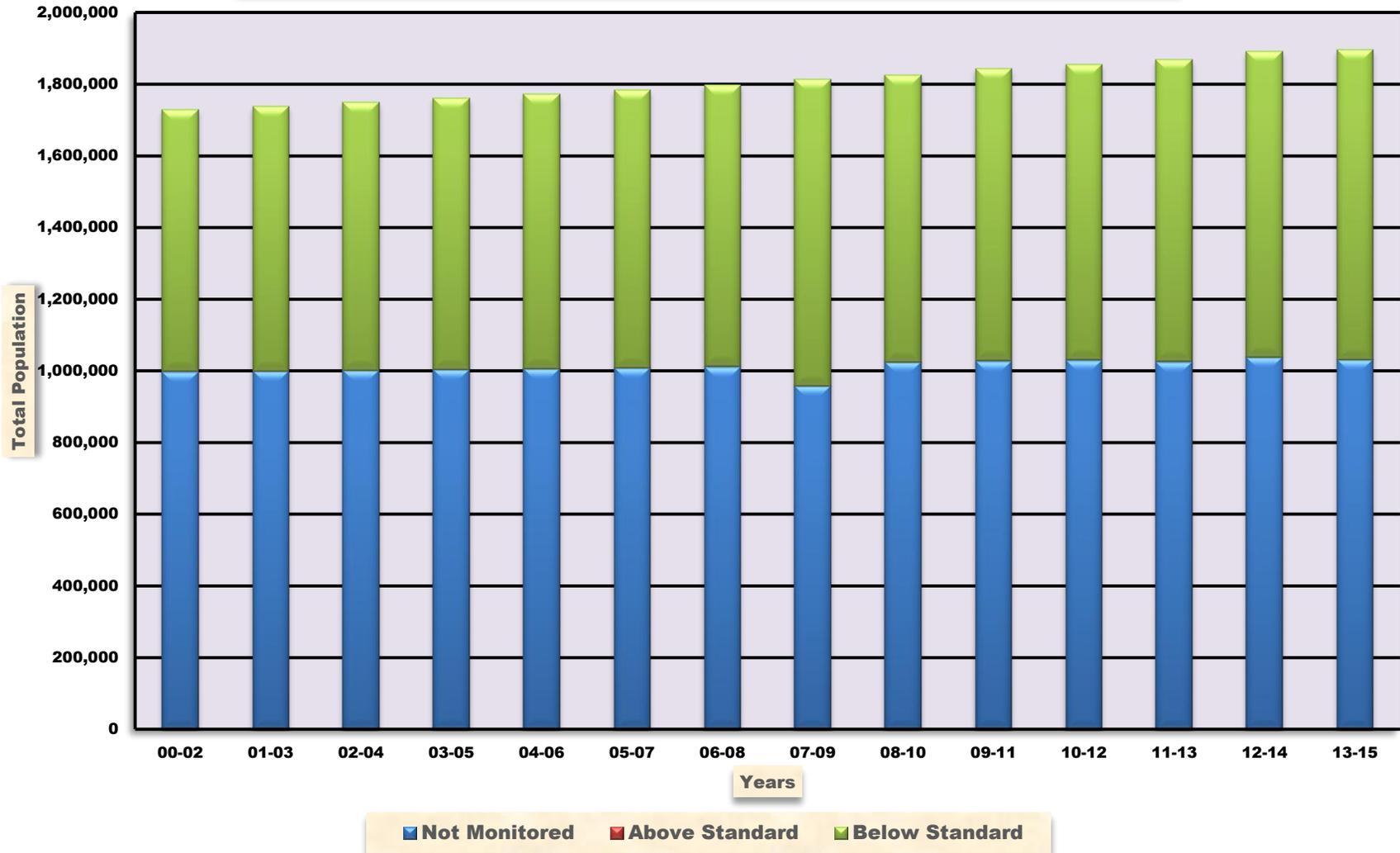


Figure NE-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Nebraska

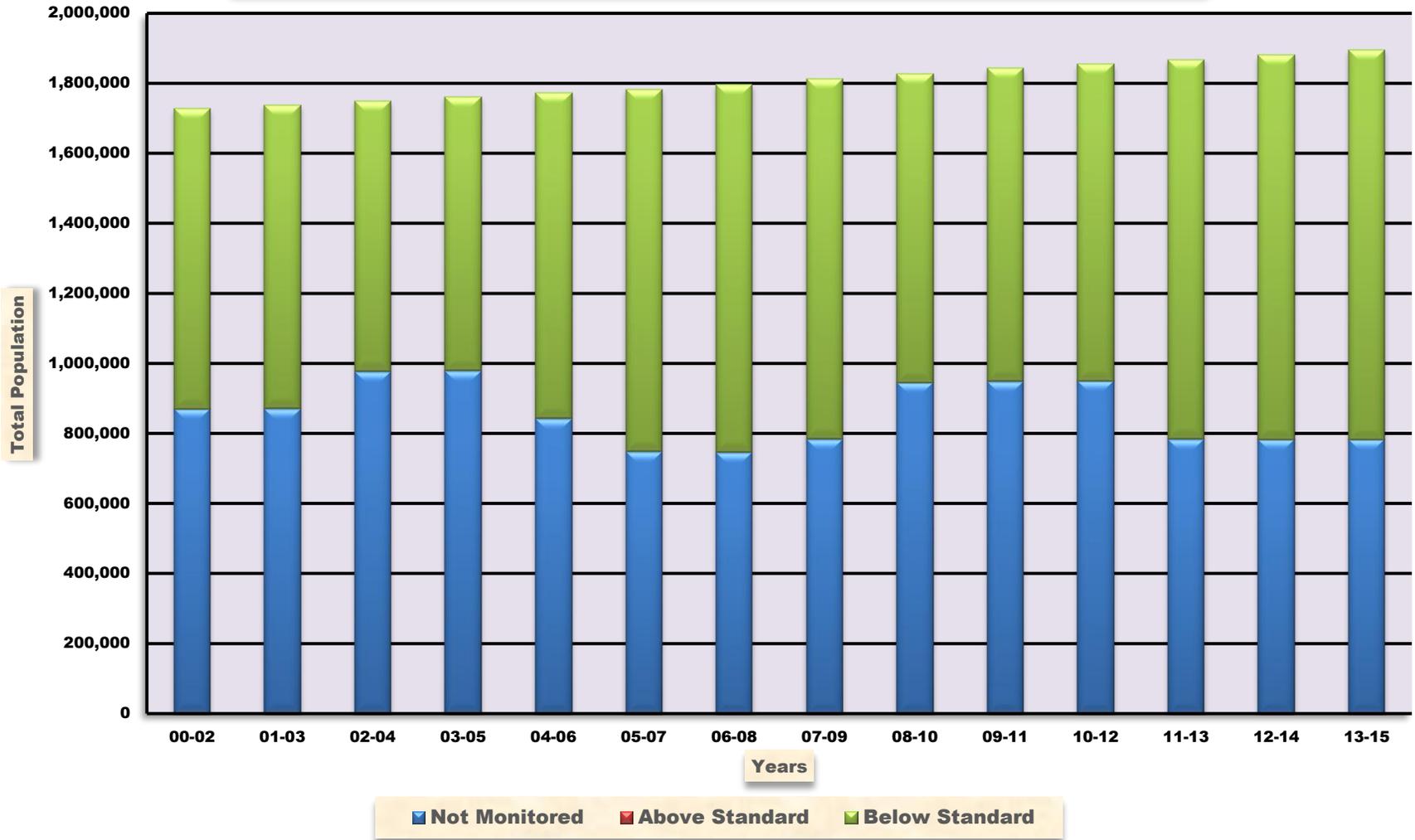
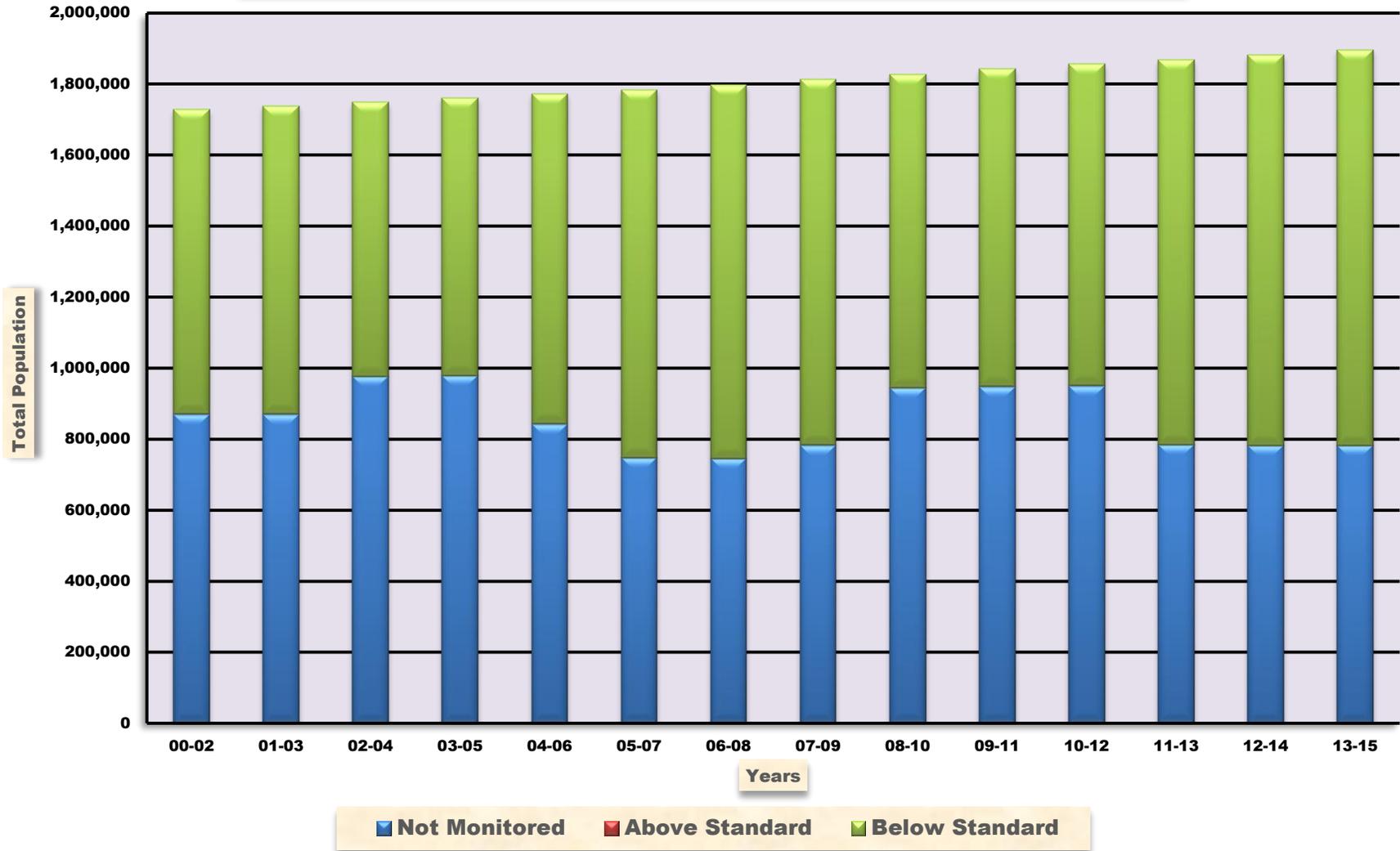


Figure NE-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Nebraska



# NEVADA

## Ozone

In the 2000 – 2002 time period, approximately 1.2 million people (56.6%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.7 million people (93.5%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NV-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.074 ppm. By 2013 – 2015 this had lowered to a value of 0.070 ppm, a reduction of 5.4 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.9 million people (86.7%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 2.6 million people (88.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 34 µg/m3. Figure NV-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 21 µg/m3. By 2013 -2015 this had increased to 22 µg/m3, an increase of 5.4 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.9 million people (86.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 2.6 million people (88.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure NV-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.1 µg/m3. By 2013 – 2015 this had increased to a value of 8.7 µg/m3, an increase of 7.4 percent.

**Table NV-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Churchill	24,200	0.064	C	N	ND	--	ND	--	--
Clark	2,114,801	0.071	D	Y	22	A	9.0	A	Y
Lyon	52,585	0.067	C	N	ND	--	ND	--	--
Washoe	446,903	0.067	C	Y	24	A	7.5	A	Y
White Pine	9,811	0.068	C	N	ND	--	ND	--	--
Carson City	54,521	0.067	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>2,702,821</b>								
Not Monitored	188,024								
<b>Total</b>	<b>2,890,845</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NV-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.074	21	8.1
2001 – 2003	0.075	19	7.4
2002 – 2004	0.076	18	7.0
2003 – 2005	0.075	16	6.1
2004 – 2006	0.075	16	5.9
2005 – 2007	0.075	20	7.5
2006 – 2008	0.075	20	7.5
2007 – 2009	0.072	20	7.4
2008 - 2010	0.069	18	6.4
2009 – 2011	0.070	17	5.9
2010 – 2012	0.071	15	5.9
2011 – 2013	0.071	19	7.1
2012 - 2014	0.071	18	7.2
2013 - 2015	0.070	22	8.7

# NEVADA

**Table NV-3  
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	2011-2013	2012-2014	2013-2015
A	72,475	74,460	183,587	186,887	55,410	161,994	244,604	0	0	24,367	24,375	24,063	0	0
B	1,158,012	1,198,334	620,201	765,126	826,220	767,640	751,355	341,341	193,440	425,710	269,792	394,791	295,817	74,484
C	761,481	678,928	1,306,465	1,235,373	1,387,518	1,436,782	1,365,964	1,304,829	2,214,143	1,980,073	2,277,082	2,182,502	2,354,276	1,570,937
D	0	113,155	0	0	0	0	0	745,926	0	0	0	0	0	1,057,401
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,991,968	2,064,877	2,110,253	2,187,386	2,269,148	2,366,416	2,361,923	2,392,096	2,407,583	2,430,150	2,571,249	2,601,356	2,650,093	2,702,821
NM	181,823	183,973	235,969	244,757	253,510	234,656	291,707	292,569	292,968	293,172	187,682	188,780	189,006	188,024
Total	2,173,791	2,248,850	2,346,222	2,432,143	2,522,658	2,601,072	2,653,630	2,684,665	2,700,551	2,723,322	2,758,931	2,790,136	2,839,099	2,890,845

**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	2011-2013	2012-2014	2013-2015
A	1,885,336	1,956,648	2,051,550	1,729,522	1,803,774	1,867,817	2,327,142	1,939,407	1,951,269	2,395,685	2,430,667	2,294,744	2,363,066	2,412,736
B	0	0	0	392,716	400,453	408,724	0	0	421,407	0	0	0	146,693	148,968
C	0	0	0	0	0	0	0	417,722	0	0	0	216,876	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,885,336	1,956,468	2,051,550	2,122,238	2,204,227	2,276,541	2,327,142	2,357,129	2,372,676	2,395,685	2,430,667	2,511,619	2,509,759	2,561,704
NM	288,455	292,382	294,672	309,905	318,431	324,531	326,488	327,536	327,875	327,637	328,264	278,517	329,340	329,141
Total	2,173,791	2,248,850	2,346,222	2,432,143	2,522,658	2,601,072	2,653,630	2,684,665	2,700,551	2,723,322	2,758,931	2,790,136	2,839,099	2,890,845

**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	2011-2013	2012-2014	2013-2015
A	1,885,336	1,956,468	2,051,550	2,122,238	2,204,227	2,276,541	2,327,142	2,357,129	2,372,676	2,395,685	2,430,667	2,294,744	2,509,759	2,561,704
B	0	0	0	0	0	0	0	0	0	0	0	216,876	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,885,336	1,956,468	2,051,550	2,122,238	2,204,227	2,276,541	2,327,142	2,357,129	2,372,676	2,395,685	2,430,667	2,511,619	2,509,759	2,561,704
NM	288,455	292,382	294,672	309,905	318,431	324,531	326,488	327,536	327,375	327,637	328,264	278,517	329,340	329,141
Total	2,173,791	2,248,850	2,346,222	2,432,143	2,522,658	2,601,072	2,653,630	2,684,668	2,700,551	2,723,322	2,758,931	2,790,136	2,839,099	2,890,845

NM – Not Monitored

Figure NV-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Nevada

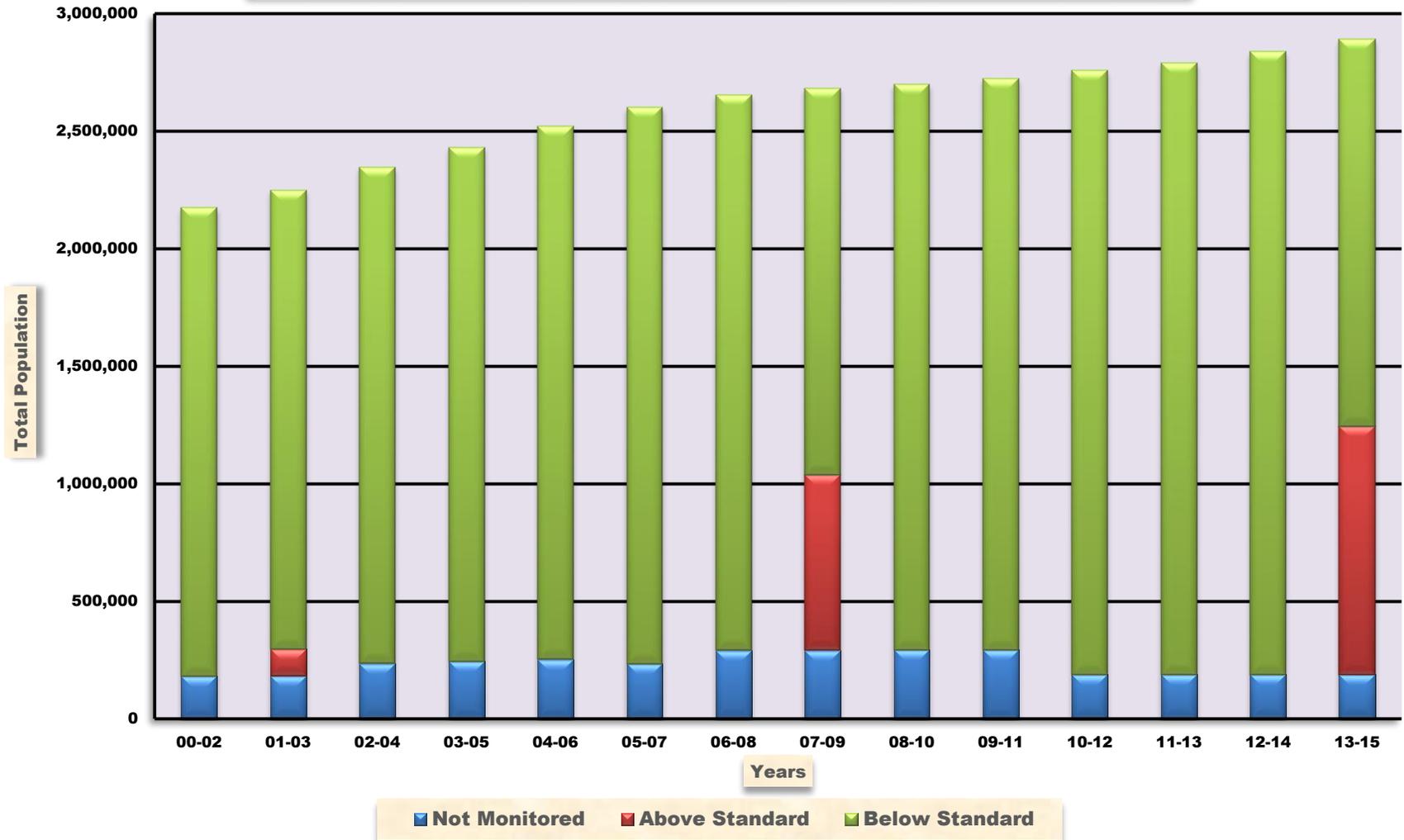


Figure NV-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Nevada

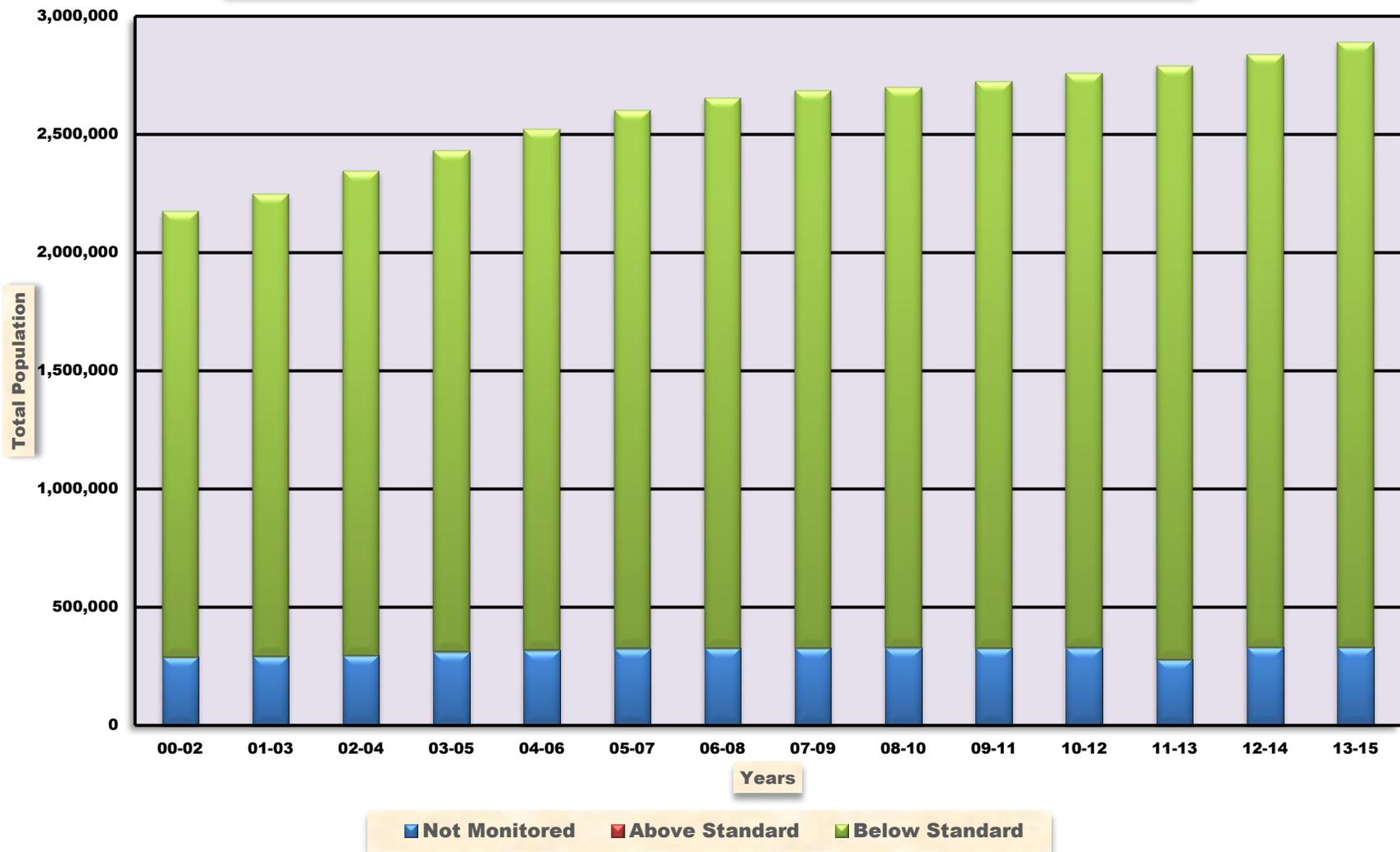
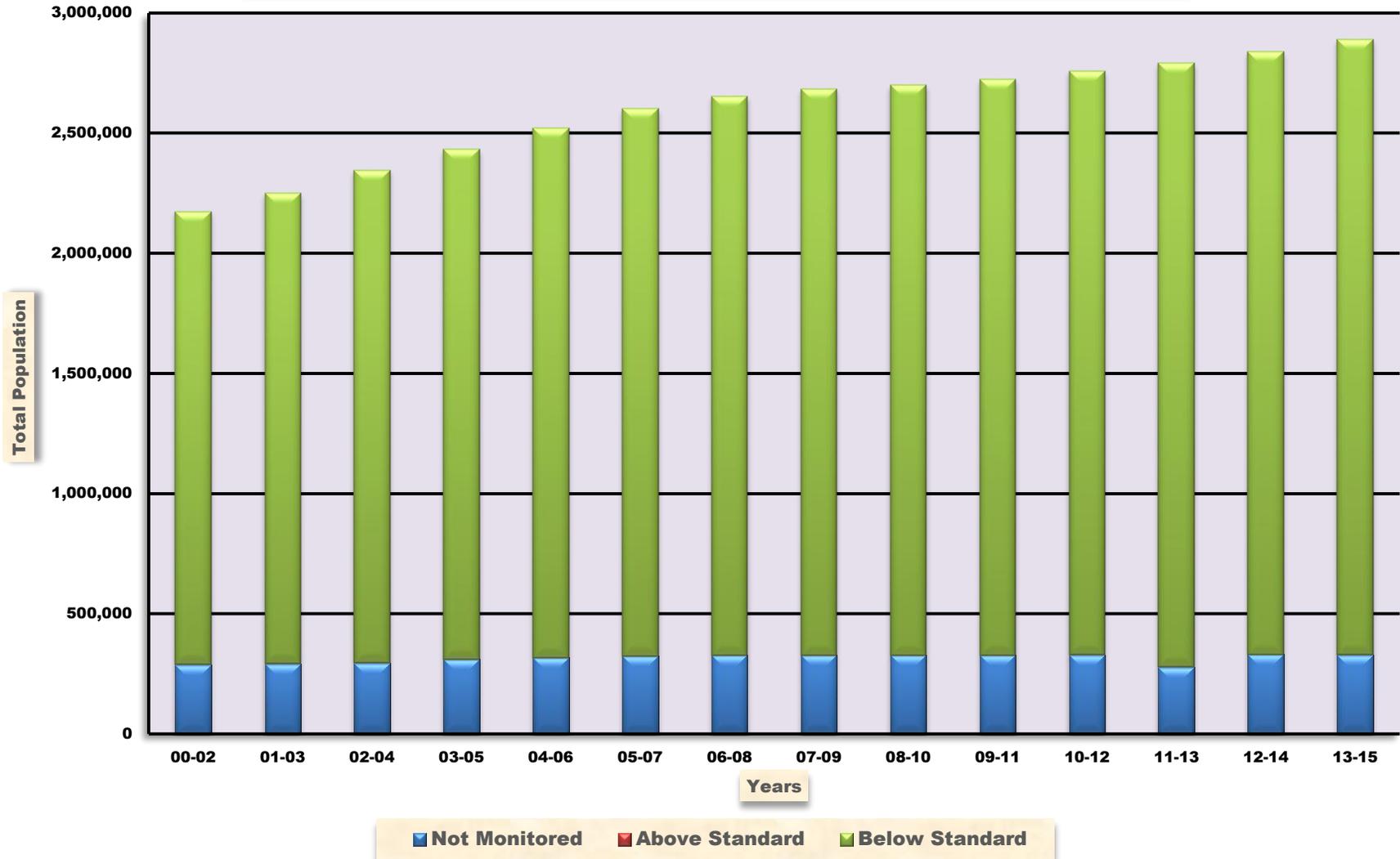


Figure NV-3

**People Breathing Various Air Quality Levels - Annual PM-2.5  
Nevada**



# NEW HAMPSHIRE

## Ozone

In the 2000 – 2002 time period, approximately 1.2 million people (92.8%) lived in counties that met the ozone standard. By 2013 – 2015 this was approximately 1.1 million people (83.7%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NH-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.079 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 19.0 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 33 thousand people (2.6%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.9 million people (70.2%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m3. Figure NH-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 -2002 was 27 µg/m3. By 2013 – 2015 this had lowered to 16 µg/m3, a reduction of 40.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 33 thousand people (2.6%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 0.9 million people (70.2%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure NH-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 9.7 µg/m3. By 2013 -2015 this had lowered to a value of 6.5 µg/m3, a reduction of 33.0 percent.

**Table NH-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Belknap	60,641	0.058	B	N	11	A	4.9	A	N
Cheshire	75,909	0.060	B	N	26	A	8.8	A	N
Coos	31,212	0.063	C	Y	ND	--	ND	--	--
Grafton	89,320	0.058	B	Y	16	A	6.3	A	N
Hillsborough	406,678	0.065	C	Y	15	A	6.3	A	N
Merrimack	147,994	0.062	B	N	ND	--	ND	--	--
Rockingham	301,777	0.066	C	Y	16	A	6.5	A	N
<b>Subtotal</b>	<b>1,113,531</b>								
Not Monitored	217,077								
<b>Total</b>	<b>1,330,608</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NH-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.079	27	9.7
2001 – 2003	0.082	29	10.4
2002 – 2004	0.074	29	9.6
2003 – 2005	0.072	28	9.2
2004 – 2006	0.073	26	9.4
2005 – 2007	0.074	26	9.5
2006 – 2008	0.072	25	9.1
2007 – 2009	0.070	24	8.7
2008 - 2010	0.066	23	8.1
2009 – 2011	0.065	22	7.9
2010 – 2012	0.066	22	7.8
2011 – 2013	0.065	19	6.9
2012 - 2014	0.066	17	6.8
2013 - 2015	0.064	16	6.5

# NEW HAMPSHIRE

## Table NH-3 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	2011-2013	2012-2014	2013-2015
A	45,074	0	33,589	33,845	33,814	121,515	0	0	0	105,267	0	44,815	60,656	0
B	340,478	344,984	759,860	901,124	841,345	608,500	122,233	316,223	656,433	780,775	888,449	947,859	631,162	389,470
C	791,694	464,236	42,547	198,191	265,446	412,961	742,517	487,818	445,324	217,192	217,509	115,710	418,833	724,061
D	0	391,461	0	0	0	0	280,683	297,536	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>1,177,246</b>	<b>1,200,681</b>	<b>835,996</b>	<b>1,133,159</b>	<b>1,140,605</b>	<b>1,142,976</b>	<b>1,145,433</b>	<b>1,101,577</b>	<b>1,101,757</b>	<b>1,103,234</b>	<b>1,105,958</b>	<b>1,108,383</b>	<b>1,110,650</b>	<b>1,113,531</b>
<b>NM</b>	<b>91,843</b>	<b>79,159</b>	<b>454,125</b>	<b>165,333</b>	<b>167,784</b>	<b>169,564</b>	<b>170,473</b>	<b>214,525</b>	<b>214,713</b>	<b>214,960</b>	<b>214,760</b>	<b>215,076</b>	<b>216,163</b>	<b>217,077</b>
<b>Total</b>	<b>1,269,089</b>	<b>1,279,840</b>	<b>1,290,121</b>	<b>1,298,492</b>	<b>1,308,389</b>	<b>1,312,540</b>	<b>1,315,906</b>	<b>1,316,102</b>	<b>1,316,470</b>	<b>1,318,194</b>	<b>1,320,718</b>	<b>1,323,459</b>	<b>1,326,813</b>	<b>1,330,608</b>

## 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	2011-2013	2012-2014	2013-2015
A	33,234	582,128	1,040,387	1,133,159	872,942	1,031,480	1,034,473	902,123	979,594	697,421	776,042	700,642	1,079,054	934,325
B	0	0	0	0	121,054	77,745	77,472	77,302	0	76,918	0	76,610	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>33,234</b>	<b>582,128</b>	<b>1,040,387</b>	<b>1,133,159</b>	<b>993,996</b>	<b>1,109,225</b>	<b>1,111,945</b>	<b>979,425</b>	<b>979,594</b>	<b>774,339</b>	<b>776,042</b>	<b>777,252</b>	<b>1,079,054</b>	<b>934,325</b>
<b>NM</b>	<b>1,235,855</b>	<b>697,712</b>	<b>249,734</b>	<b>165,333</b>	<b>314,393</b>	<b>203,315</b>	<b>203,961</b>	<b>336,677</b>	<b>336,876</b>	<b>543,855</b>	<b>544,676</b>	<b>546,207</b>	<b>247,759</b>	<b>396,283</b>
<b>Total</b>	<b>1,269,089</b>	<b>1,279,840</b>	<b>1,290,121</b>	<b>1,298,492</b>	<b>1,308,389</b>	<b>1,312,540</b>	<b>1,315,906</b>	<b>1,316,102</b>	<b>1,316,470</b>	<b>1,318,194</b>	<b>1,320,718</b>	<b>1,323,459</b>	<b>1,326,813</b>	<b>1,330,608</b>

## 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	2011-2013	2012-2014	2013-2015
A	33,234	582,128	1,040,387	1,133,159	993,996	1,109,225	1,111,945	979,425	979,594	774,339	776,042	777,252	1,079,054	934,325
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>33,234</b>	<b>582,128</b>	<b>1,040,387</b>	<b>1,133,159</b>	<b>993,996</b>	<b>1,109,225</b>	<b>1,111,945</b>	<b>979,425</b>	<b>979,594</b>	<b>774,339</b>	<b>776,042</b>	<b>777,252</b>	<b>1,079,054</b>	<b>934,325</b>
<b>NM</b>	<b>1,235,855</b>	<b>697,712</b>	<b>249,734</b>	<b>165,333</b>	<b>314,393</b>	<b>203,315</b>	<b>203,961</b>	<b>336,677</b>	<b>336,876</b>	<b>543,855</b>	<b>544,676</b>	<b>546,207</b>	<b>247,759</b>	<b>396,283</b>
<b>Total</b>	<b>1,269,089</b>	<b>1,279,840</b>	<b>1,290,121</b>	<b>1,298,492</b>	<b>1,308,389</b>	<b>1,312,540</b>	<b>1,315,906</b>	<b>1,316,102</b>	<b>1,316,470</b>	<b>1,318,194</b>	<b>1,820,718</b>	<b>1,323,459</b>	<b>1,326,813</b>	<b>1,330,608</b>

**NM - Not Monitored**

Figure NH-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone New Hampshire

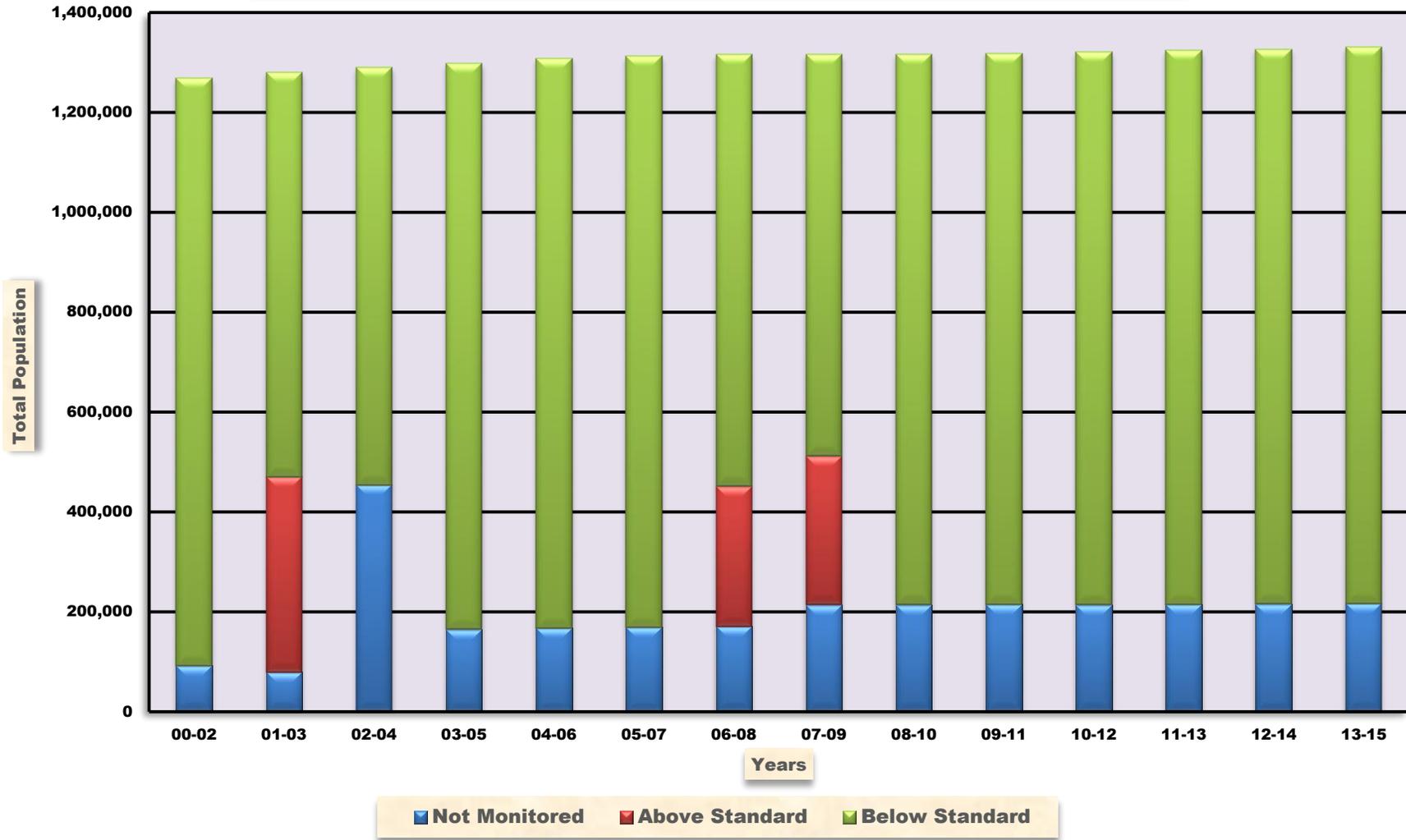


Figure NH-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
New Hampshire**

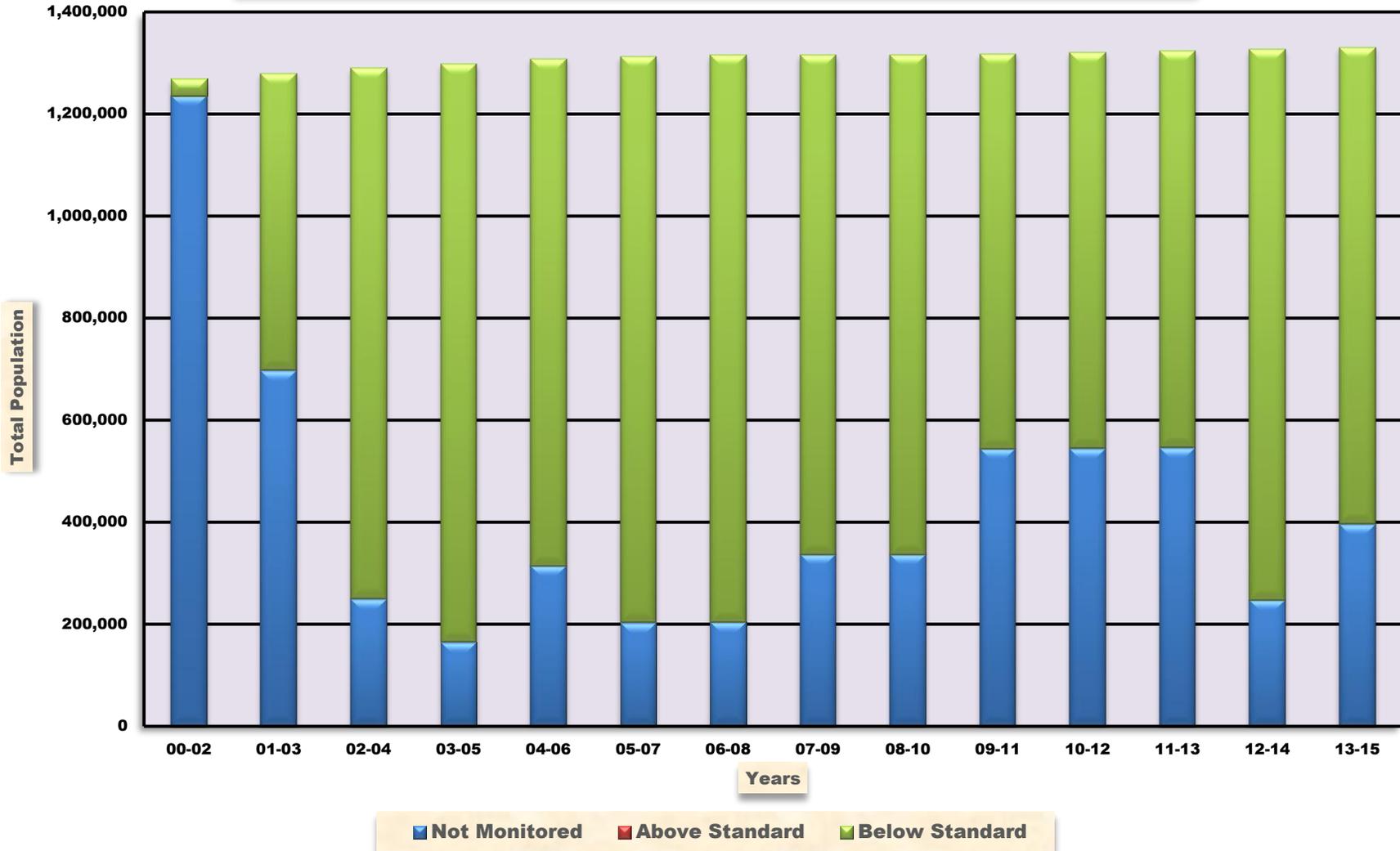
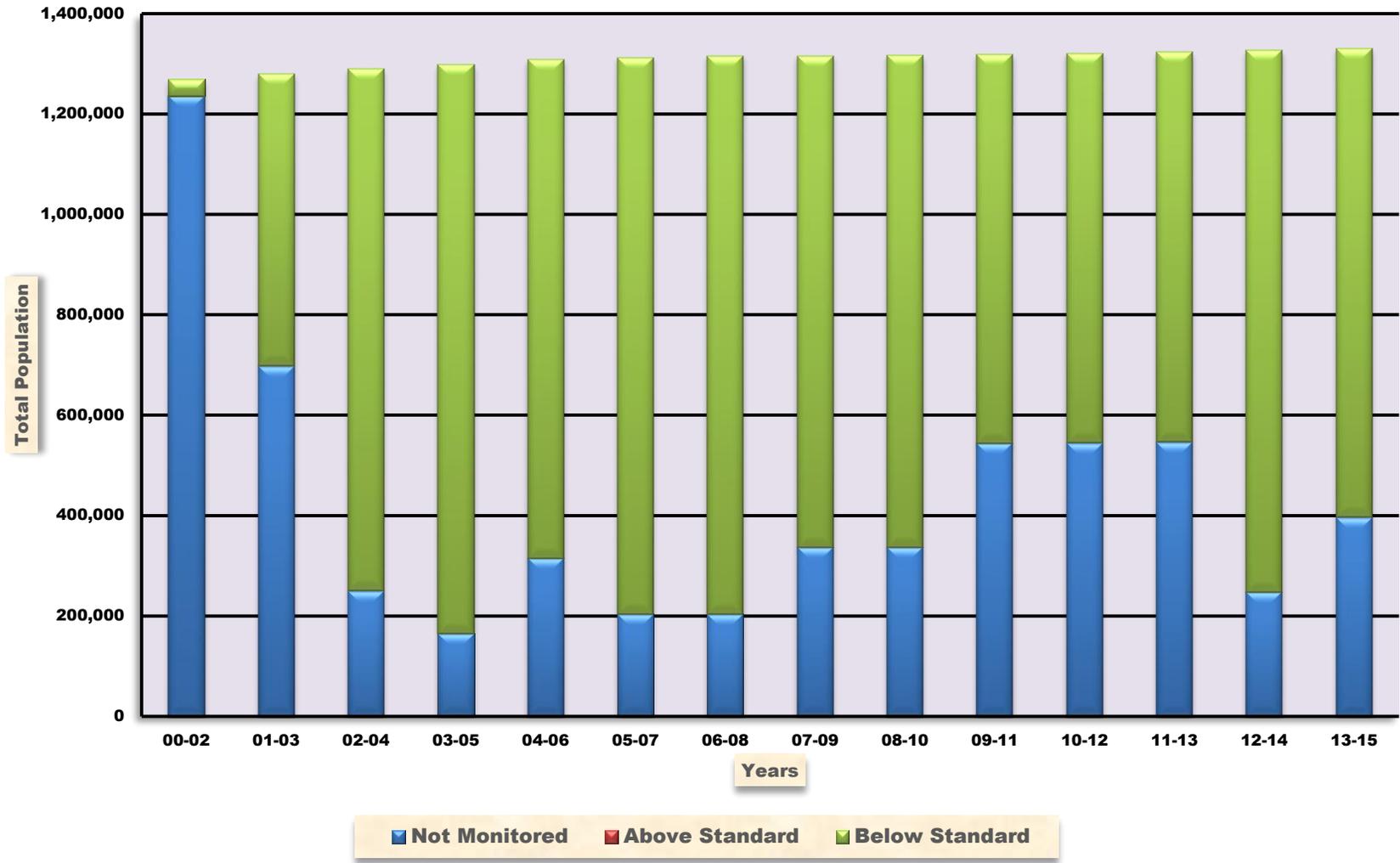


Figure NH-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 New Hampshire



## NEW JERSEY

### Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 3.6 million people (40.36%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NJ-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.098 ppm. By 2013 – 2015 this had lowered to a value of 0.070 ppm, a reduction of 28.6 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 4.8 million people (56.5%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 7.0 million people (77.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure NJ-2 shows the distribution of people by year. The 24-hour population weighted PM-2.5 design value in 2000 – 2002 was 35  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 34.3 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 4.0 million people (46.2%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 7.0 million people (77.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure NJ-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 14.1  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.8  $\mu\text{g}/\text{m}^3$ , a reduction of 37.6 percent.

**Table NJ-1  
2013 – 2015**

County	Population	Ozone			Particle Pollution (PM-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Atlantic	274,219	0.065	C	N	19	A	7.7	A	Y
<b>Bergen</b>	<b>938,506</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	27	A	9.1	A	N
Camden	510,923	0.069	C	Y	24	A	9.8	B	Y
Cumberland	155,854	0.065	C	N	ND	--	ND	--	--
Essex	798,434	0.070	C	N	25	A	8.9	A	N
<b>Gloucester</b>	<b>291,479</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	24	A	8.9	A	N
Hudson	674,836	ND	--	--	26	A	10.1	B	Y
Hunterdon	125,398	0.069	C	N	ND	--	ND	--	--
<b>Mercer</b>	<b>371,398</b>	<b>0.071</b>	<b>D</b>	<b>Y</b>	23	A	8.4	A	Y
<b>Middlesex</b>	<b>840,900</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	20	A	8.0	A	N
Monmouth	628,715	0.069	C	N	ND	--	ND	--	--
Morris	499,509	0.070	C	N	19	A	7.1	A	Y
<b>Ocean</b>	<b>588,721</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	19	A	7.7	A	N
Passaic	510,916	0.068	C	N	25	A	8.9	A	N
Union	555,786	ND	--	--	27	A	9.7	B	Y
Warren	106,869	0.062	B	N	23	A	8.3	A	N
Subtotal	<b>7,872,463</b>								
Not Monitored	1,085,550								
Total	<b>8,958,013</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NJ-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.098	35	14.1
2001 – 2003	0.096	36	13.5
2002 – 2004	0.090	35	12.7
2003 – 2005	0.086	37	13.1
2004 – 2006	0.086	35	12.5
2005 – 2007	0.088	36	12.8
2006 – 2008	0.086	33	11.8
2007 – 2009	0.080	29	11.0
2008 - 2010	0.078	26	9.7
2009 – 2011	0.077	24	9.2
2010 – 2012	0.082	23	9.2
2011 – 2013	0.077	22	9.0
2012 - 2014	0.073	23	8.9
2013 - 2015	0.070	23	8.8

# NEW JERSEY

**Table NJ-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	107,379	539,515	106,869
C	0	614,813	1,376,311	2,016,090	2,902,455	919,678	0	274,049	1,268,051	1,428,416	660,670	938,866	6,089,348	3,502,968
D	1,016,743	758,200	3,476,230	3,583,804	3,265,586	4,375,417	650,642	4,788,739	5,009,892	4,507,217	2,340,517	4,340,485	0	3,031,004
F	4,159,689	4,731,797	1,333,113	556,012	0	0	4,397,793	287,362	0	0	2,836,020	290,265	0	0
Subtotal	5,176,432	6,104,810	6,135,654	6,155,906	6,168,040	5,295,095	5,048,435	5,350,150	6,277,943	5,935,633	5,837,207	5,676,995	6,628,863	6,640,841
NM	3,376,211	2,496,592	2,498,907	2,496,068	2,493,639	3,382,790	3,662,655	3,405,452	2,513,951	2,885,522	3,027,383	3,222,344	2,309,312	2,317,172
Total	8,552,643	8,601,402	8,634,561	8,651,974	8,661,679	8,677,885	8,711,090	8,755,602	8,791,894	8,821,155	8,864,590	8,899,339	8,938,175	8,958,013

**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	2011-2013	2012-2014	2013-2015
A	4,832,248	5,111,958	5,788,618	6,398,999	0	0	0	2,613,211	4,289,292	6,319,070	6,680,483	6,180,823	6,799,947	6,683,603
B	0	0	0	0	1,230,208	746,900	2,313,493	3,098,804	1,718,215	500,443	181,325	182,752	138,235	277,893
C	0	0	0	0	1,570,099	1,827,988	2,459,173	266,217	0	0	0	0	0	0
D	0	0	0	0	2,533,730	2,988,771	883,297	0	0	0	0	0	0	0
F	0	0	0	0	788,628	569,299	0	0	0	0	0	0	0	0
Subtotal	4,832,248	5,111,958	5,788,618	6,398,999	6,122,665	6,132,957	5,655,962	5,978,232	6,007,507	6,819,513	6,861,808	6,636,575	6,938,182	6,961,496
NM	3,720,395	3,489,444	2,845,943	2,252,975	2,539,014	2,544,928	3,055,128	2,777,370	2,784,387	2,001,642	2,002,782	2,535,764	1,999,993	1,996,517
Total	8,552,643	8,601,402	8,634,561	8,651,974	8,661,679	8,677,885	8,711,090	8,755,602	8,791,894	8,821,155	8,864,590	8,899,339	8,938,175	8,958,013

**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	2011-2013	2012-2014	2013-2015
A	0	263,285	962,206	1,072,454	0	181,544	1,545,588	4,900,749	6,007,507	6,819,513	6,861,808	5,689,069	5,737,079	6,090,724
B	876,054	884,136	1,717,665	1,252,579	4,382,146	3,015,153	1,982,712	1,077,483	0	0	0	428,629	728,311	533,355
C	3,076,828	3,700,732	1,316,049	2,363,496	1,072,738	1,082,845	573,531	0	0	0	0	245,877	472,792	337,418
D	879,367	263,806	263,458	175,387	175,051	306,819	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	4,832,248	5,111,958	4,259,378	4,863,915	4,581,147	4,586,360	4,101,830	5,978,232	6,007,507	6,819,513	6,861,808	6,367,575	6,938,182	6,961,496
NM	3,720,395	3,489,444	4,375,183	3,788,059	4,080,532	4,091,525	4,609,260	2,777,370	2,784,387	2,001,642	2,002,782	2,535,764	1,999,993	1,996,517
Total	8,552,643	8,601,402	8,634,561	8,651,974	8,661,679	8,677,885	8,711,090	8,755,602	8,791,894	8,821,155	8,864,590	8,899,339	8,938,175	8,958,013

NM – Not Monitored

Figure NJ-1

People Breathing Various Air Quality Levels - 8 Hour Ozone  
- New Jersey

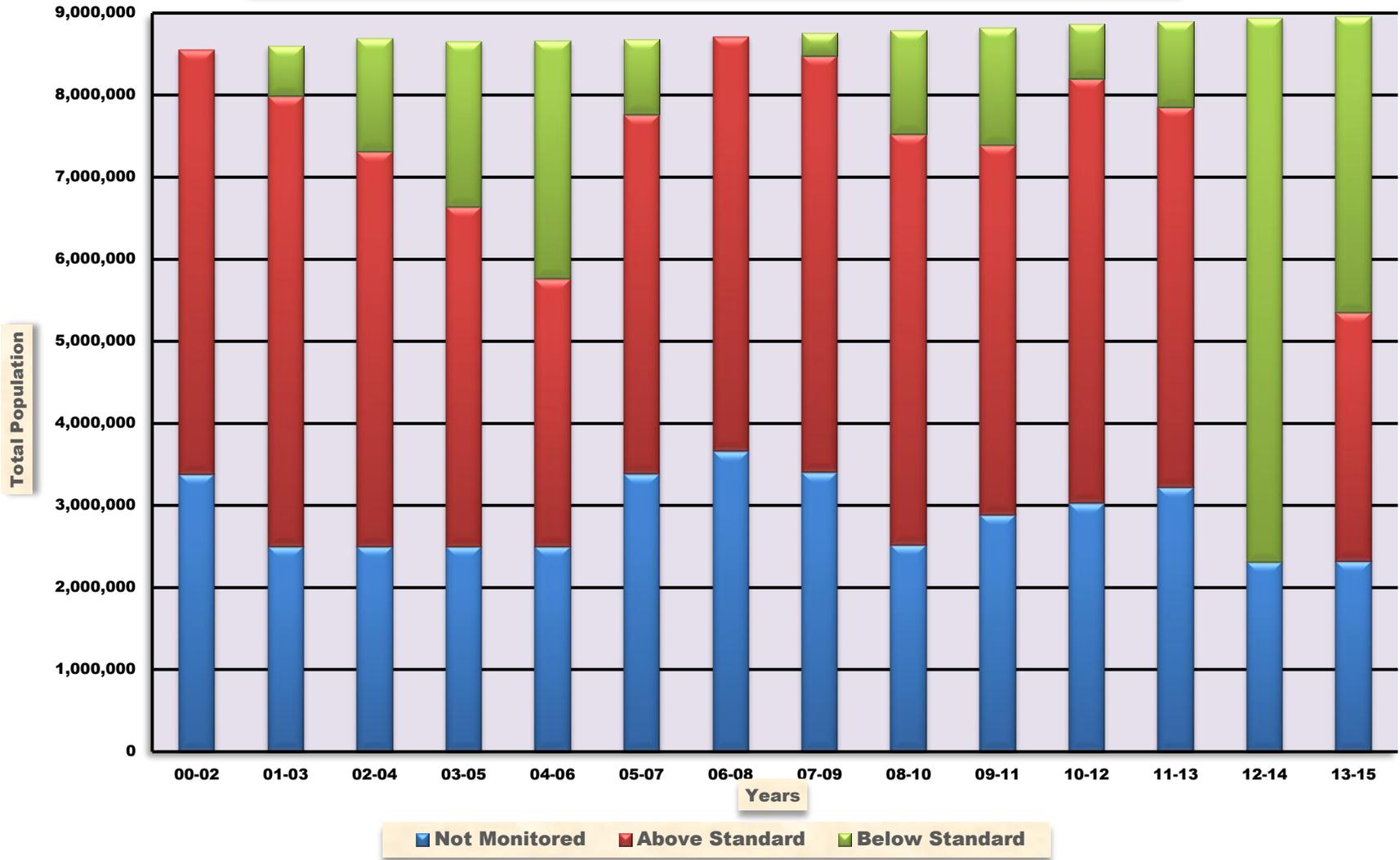


Figure NJ-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 New Jersey

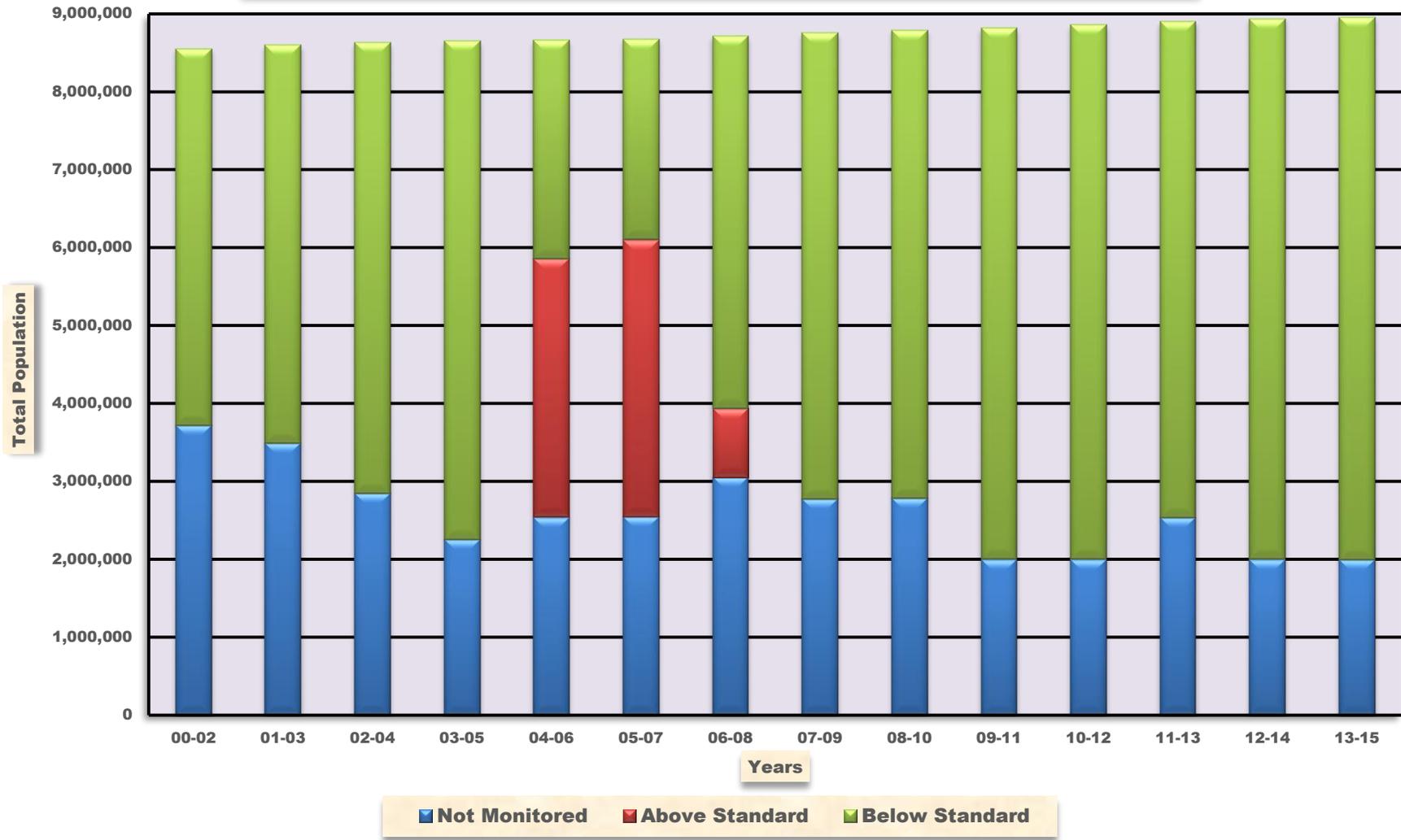
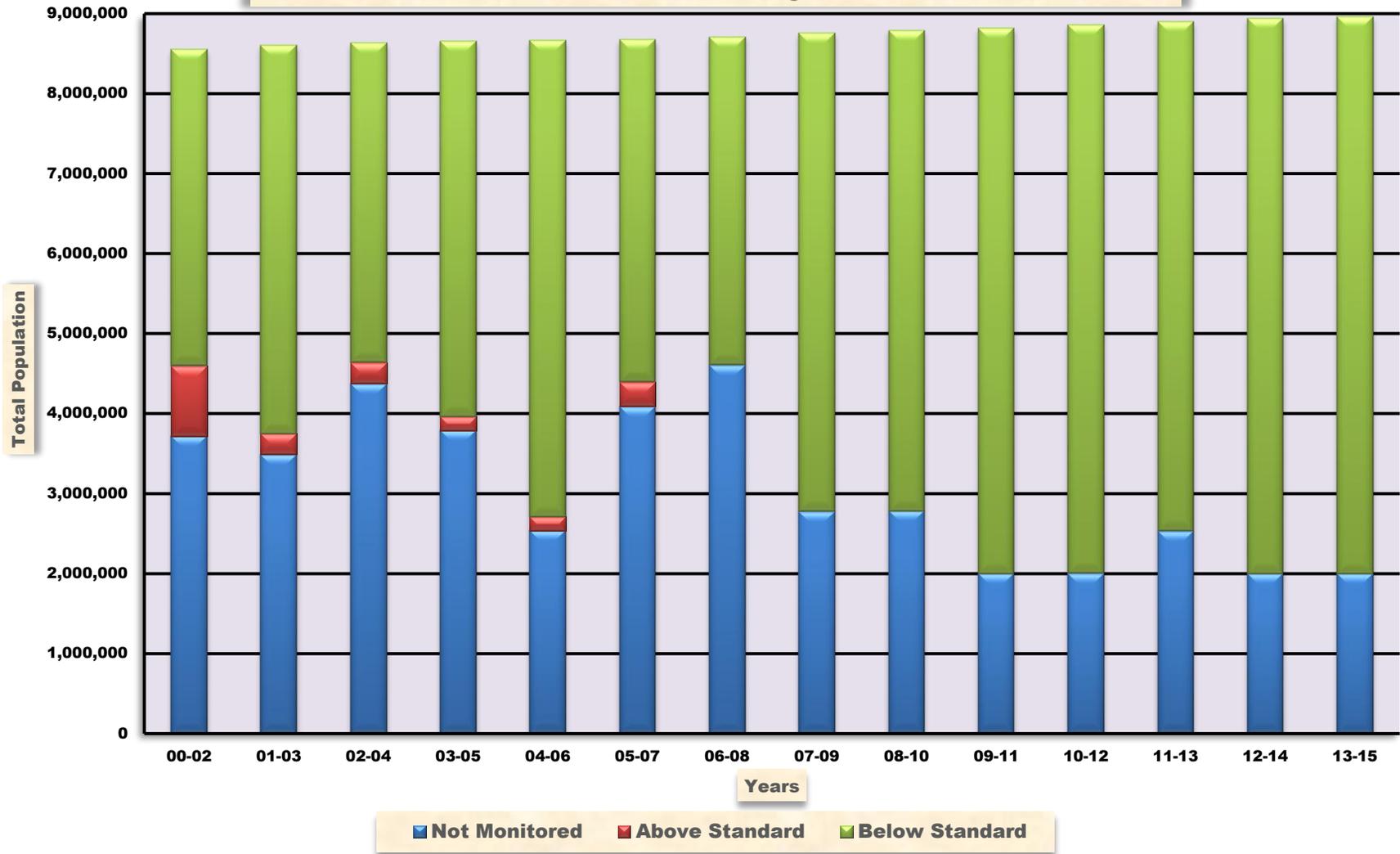


Figure NJ-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 New Jersey



## NEW MEXICO

### Ozone

In the 2000 – 2002 time period, 1.1 million people (58.8%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 1.4 million people (67.9%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NM-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.072 ppm. By 2013 -2015 this had lowered to a value of 0.066 ppm, a reduction of 8.3 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.1 million people (60.3%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.1 million people (50.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m3. Figure NM-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 19 µg/m3. By 2013 -2015 this had lowered to a value of 16, a reduction of 15.8 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.1 million people (60.3%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 1.1 million people (51.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure NM-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 7.1 µg/m3. By 2013 – 2015 this had lowered to a value of 6.4 µg/m3, a reduction of 9.9 percent.

**Table NM-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg.24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bernalillo	676,685	0.065	C	Y	17	A	6.9	A	N
Dona Ana	214,295	0.068	C	Y	13	A	5.5	A	N
Eddy	57,578	0.069	C	N	ND	--	ND	--	--
Lea	71,180	0.067	C	N	19	A	7.5	A	N
Sandoval	139,394	0.065	C	N	ND	--	ND	--	--
San Juan	118,737	0.064	C	Y	11	A	4.1	A	N
Santa Fe	148,686	0.064	B	N	ND	--	ND	--	--
Valencia	75,737	0.066	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>1,502,292</b>								
Not Monitored	582,817								
<b>Total</b>	<b>2,085,109</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NM-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.072	19	7.1
2001 – 2003	0.073	18	6.7
2002 – 2004	0.073	17	6.7
2003 – 2005	0.072	17	6.8
2004 – 2006	0.071	17	6.7
2005 – 2007	0.071	16	6.6
2006 – 2008	0.069	15	6.4
2007 – 2009	0.066	15	6.2
2008 - 2010	0.064	15	5.7
2009 – 2011	0.065	15	5.8
2010 – 2012	0.068	16	6.4
2011 – 2013	0.068	16	6.3
2012 - 2014	0.067	15	6.1
2013 - 2015	0.066	16	6.4

# NEW MEXICO

**Table NM-3  
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	2011-2013	2012-2014	2013-2015
A	25,495	30,341	0	0	0	73,109	0	25,119	89,822	25,281	0	0	0	0
B	988,113	770,789	974,162	159,849	1,112,958	1,090,277	63,397	836,610	1,215,616	868,965	525,895	512,777	1,004,232	0
C	76,485	188,864	36,988	73,915	0	32,976	1,148,358	430,340	145,300	572,663	877,945	1,039,556	550,532	1,416,574
D	0	0	0	0	0	0	33,476	0	0	0	0	0	0	85,718
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,090,092	989,994	1,011,150	1,036,764	1,112,958	1,196,362	1,245,231	1,292,069	1,450,737	1,466,909	1,403,839	1,552,333	1,554,764	1,502,292
NM	765,217	887,580	892,658	895,510	849,179	793,708	765,431	744,733	608,442	615,315	681,699	532,954	530,808	582,817
Total	1,855,389	1,877,574	1,903,808	1,932,274	1,962,137	1,990,070	2,010,662	2,036,802	2,059,179	2,082,224	2,085,538	2,085,287	2,085,572	2,085,109

**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	2011-2013	2012-2014	2013-2015
A	1,117,962	1,272,586	1,295,528	1,324,158	1,166,014	1,249,310	1,077,116	995,533	1,005,592	1,212,308	1,121,925	1,229,669	1,231,175	1,080,897
B	0	0	0	0	96,851	98,927	100,428	102,701	0	106,799	107,223	0	0	0
C	0	0	0	0	0	0	0	0	104,617	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,117,962	1,272,586	1,295,528	1,324,158	1,262,864	1,348,236	1,177,543	1,098,233	1,110,208	1,319,107	1,229,147	1,229,669	1,231,175	1,080,897
NM	737,347	604,988	608,280	608,116	699,273	641,834	833,119	938,569	948,971	763,117	856,391	855,018	854,397	1,004,212
Total	1,855,389	1,877,574	1,903,808	1,935,274	1,962,137	1,990,070	2,010,662	2,036,802	2,089,179	2,082,224	2,085,538	2,085,287	2,085,572	2,085,109

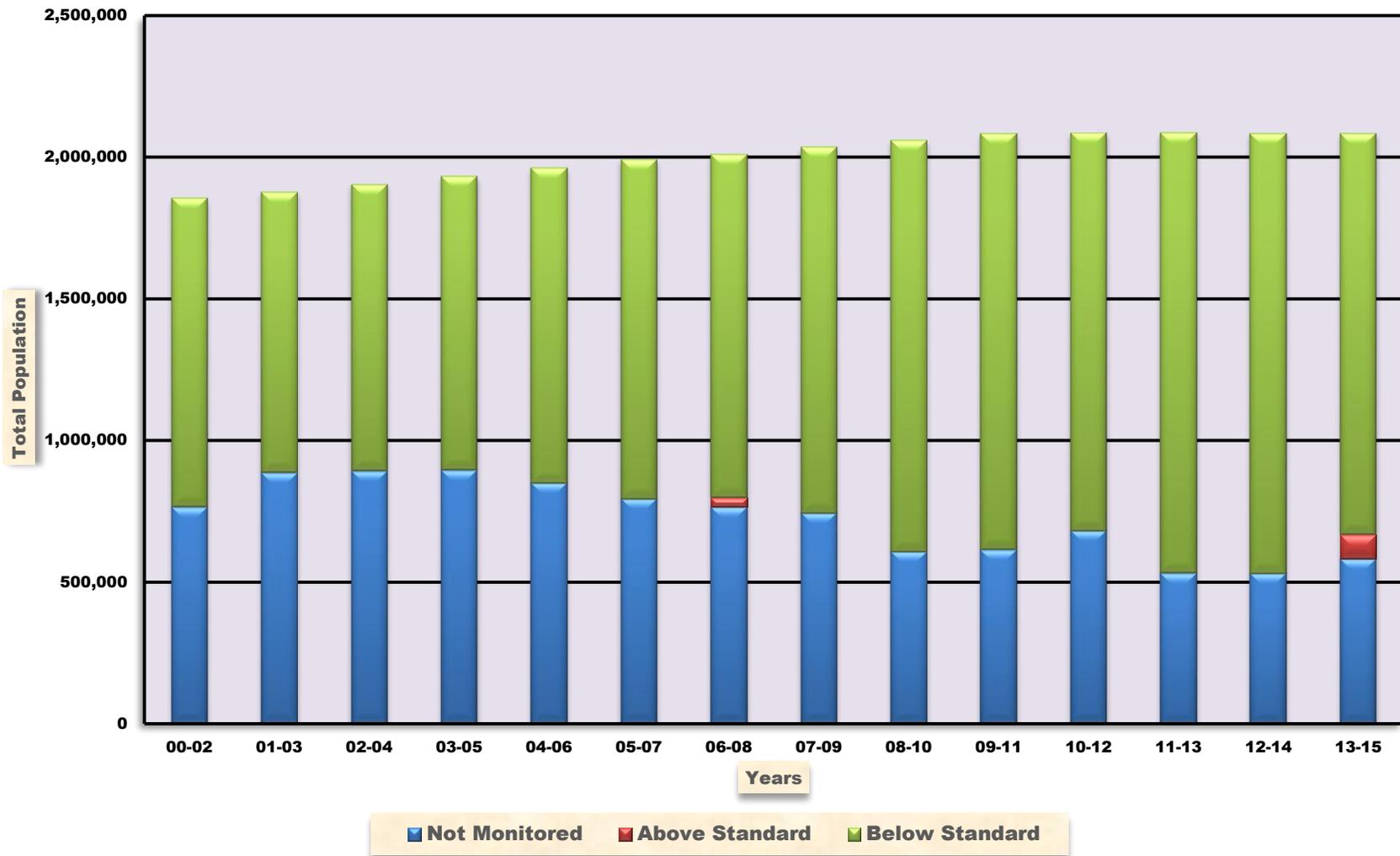
**People Breathing Year Round Particle Pollution (Annual PM-2.5)**

Grade	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015
A	1,117,962	1,272,586	1,295,528	1,324,158	1,262,864	1,348,236	1,177,543	1,068,368	1,080,694	1,319,107	1,229,147	1,229,669	1,231,175	1,080,897
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,117,963	1,272,586	1,295,528	1,324,158	1,262,864	1,348,236	1,177,543	1,068,368	1,080,694	1,319,107	1,229,147	1,229,669	1,231,175	1,080,897
NM	737,347	604,988	608,280	608,116	699,273	641,834	833,119	968,434	978,485	763,117	856,391	855,618	854,397	1,004,212
Total	1,855,389	1,877,574	1,903,808	1,935,274	1,962,137	1,990,070	2,010,662	2,036,802	2,089,179	2,082,224	2,085,538	2,085,287	2,085,572	2,085,109

NM – Not Monitored

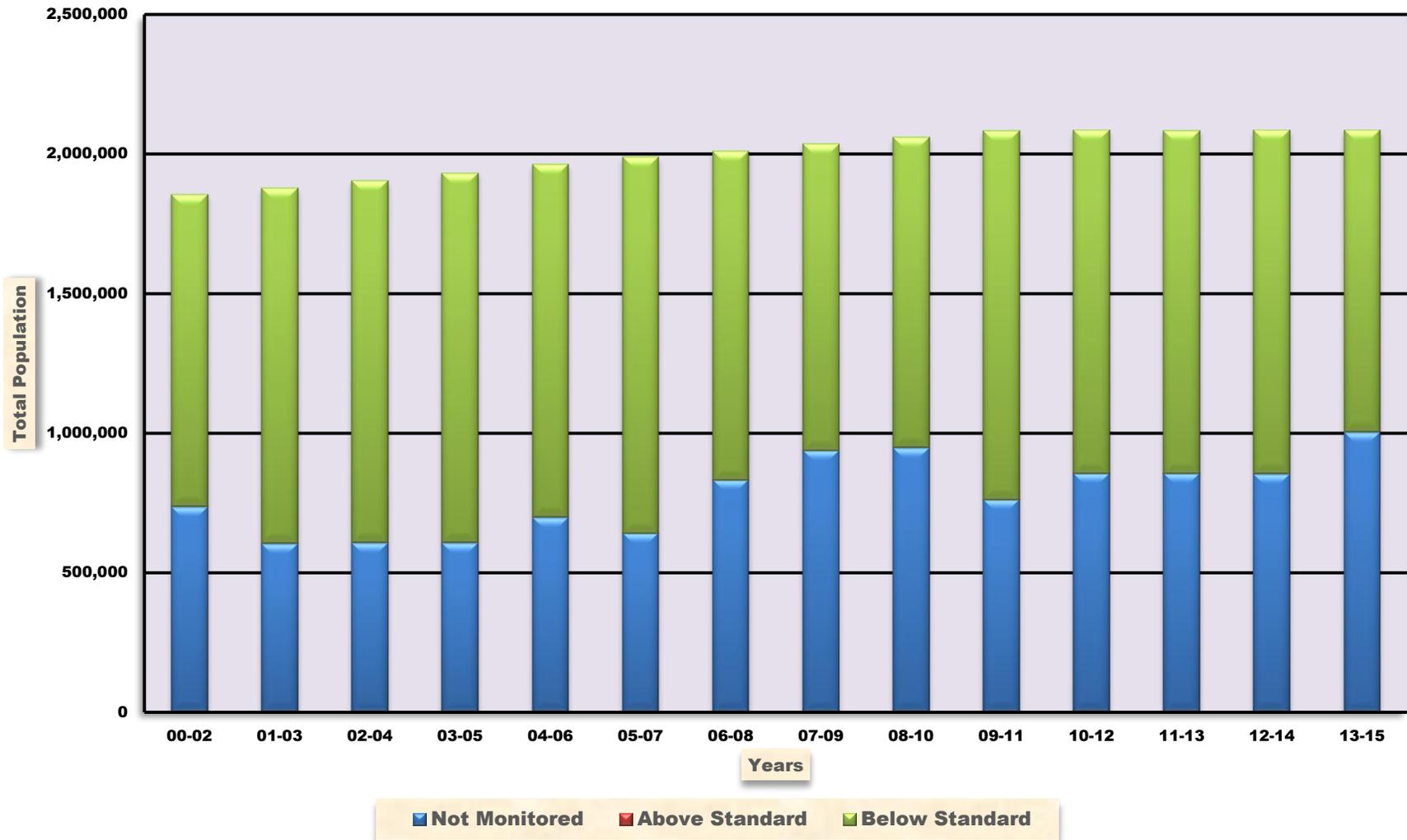
Figure NM-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone New Mexico



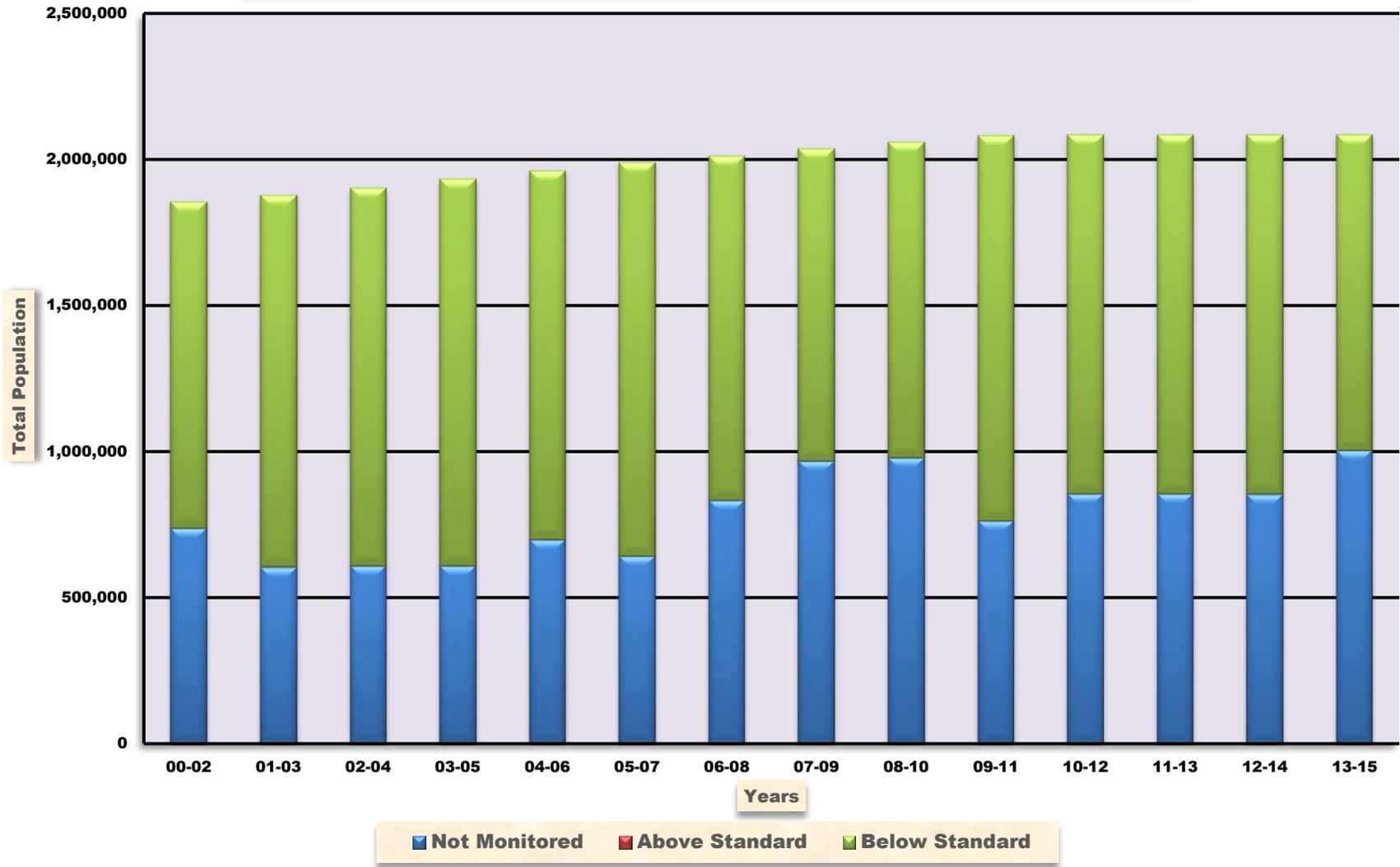
**Figure NM-2**

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
New Mexico**



**Figure NM-3**

**People Breathing Various Air Quality Levels - Annual PM-2.5  
New Mexico**



## **NEW YORK**

### **Ozone**

In the 2000 – 2002 time period, 6.5 million people (34.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 10.5 million people (52.8%). The ozone standard was lowered from .085 ppm to 0.070 ppm. Figure NY-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.085 ppm. By 2013 – 2015 this had lowered to a value of 0.068 ppm, a reduction of 20.0 percent.

### **24-Hour PM-2.5**

In the 2000 – 2002 time period, approximately 13.7 million people (71.8%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 13.0 million people (65.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m<sup>3</sup>. Figure NY-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 35 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 22 µg/m<sup>3</sup>, a reduction of 37.1 percent.

### **Annual PM-2.5**

In the 2000 – 2002 time period, approximately 12.3 million people (64.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 13.0 million people (65.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure NY-3 shows the distribution of people by year. The population weighted annual PM-2.5 in 2000 – 2002 was 13.3 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 8.4 µg/m<sup>3</sup>, a reduction of 36.8 percent.

# NEW YORK

**Table NY-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Albany	309,381	0.062	B	N	18	A	7.0	A	Y
Bronx	1,455,444	0.069	C	Y	26	A	9.2	A	Y
Chautauqua	130,719	0.067	C	N	ND	--	ND	--	--
Duchess	295,754	0.066	C	N	ND	--	ND	--	--
Erie	922,578	0.068	C	N	21	A	8.5	A	N
Essex	38,478	0.063	C	Y	12	A	4.1	A	N
Franklin	50,660	0.059	B	N	ND	--	ND	--	--
Hamilton	4,712	0.061	B	N	ND	--	ND	--	--
Herkimer	63,100	0.059	B	N	ND	--	ND	--	--
Jefferson	117,635	0.063	C	N	ND	--	ND	--	--
Kings	2,636,735	ND	--	--	23	A	9.1	A	N
Monroe	749,600	0.062	B	N	18	A	7.4	A	N
New York	1,644,518	0.066	C	N	25	A	9.6	B	Y
Niagara	212,652	0.064	C	N	ND	--	ND	--	--
Onondaga	468,463	0.063	C	N	17	A	6.6	A	N
Orange	377,647	0.063	C	N	20	A	7.2	A	N
Oswego	120,146	0.061	B	N	ND	--	ND	--	--
Putnam	99,042	0.067	B	N	ND	--	ND	--	--
Queens	2,339,150	0.069	C	N	23	A	8.1	A	N
<b>Richmond</b>	<b>474,558</b>	<b>0.074</b>	<b>D</b>	N	20	A	8.3	A	N
<b>Rockland</b>	<b>326,037</b>	<b>0.071</b>	<b>D</b>	N	ND	--	ND	--	--
Saratoga	226,249	0.061	B	N	ND	--	ND	--	--
Steuben	97,631	0.059	B	N	15	A	6.0	A	N
Suffolk	1,501,587	0.070	C	Y	20	A	7.5	A	N
Tompkins	104,926	0.062	B	N	ND	--	ND	--	--
Wayne	91,446	0.063	C	N	ND	--	ND	--	--
<b>Westchester</b>	<b>976,396</b>	<b>0.073</b>	<b>D</b>	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>15,835,244</b>								
Not Monitored	3,960,547								
<b>Total</b>	<b>19,795,791</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NY-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.085	35	13.3
2001 – 2003	0.087	36	13.3
2002 – 2004	0.084	36	12.9
2003 – 2005	0.081	36	13.1
2004 – 2006	0.078	35	12.5
2005 – 2007	0.081	34	12.5
2006 – 2008	0.078	32	11.7
2007 – 2009	0.075	29	10.9
2008 - 2010	0.073	26	9.9
2009 – 2011	0.072	25	9.4
2010 – 2012	0.076	24	9.4
2011 – 2013	0.074	23	9.1
2012 - 2014	0.070	21	8.7
2013 - 2015	0.068	22	8.4

# NEW YORK

## Table NY-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	480,585	234,488	0	0	51,599	285,838	51,795	0	0	0
B	2,435,677	2,278,688	1,317,648	2,823,362	3,137,221	3,445,418	439,749	440,375	487,217	1,495,366	744,613	1,307,025	4,485,950	1,764,883
C	4,110,963	3,043,038	4,575,635	2,607,208	5,178,557	3,931,166	3,449,608	7,395,779	10,324,994	9,279,344	3,262,805	7,355,231	8,616,818	8,694,115
D	2,536,737	1,911,986	3,274,734	5,316,256	933,203	1,857,939	5,309,058	2,593,821	2,136,578	499,605	7,212,573	4,268,534	0	2,778,049
F	2,124,737	4,002,643	1,478,215	0	0	67,741	2,485,282	1,316,003	373,338	970,072	470,728	0	0	0
Subtotal	11,208,113	11,235,754	10,646,232	10,745,825	9,729,566	11,536,751	11,683,696	11,745,977	13,373,725	12,530,225	11,742,514	12,930,514	13,102,767	13,237,047
NM	7,929,687	7,940,185	8,525,335	8,385,785	9,375,065	7,595,584	7,528,740	7,561,089	6,004,377	6,934,972	8,007,747	6,720,337	6,643,460	6,558,744
Total	19,137,800	19,175,939	19,171,567	19,132,610	19,104,631	19,132,335	19,212,436	19,307,066	19,378,102	19,465,197	19,570,261	19,651,127	19,746,227	19,795,791

## 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	2011-2013	2012-2014	2013-2015
A	13,740,379	12,096,968	13,550,163	13,919,263	151,046	137,914	1,341,885	3,630,554	9,795,027	14,591,444	12,921,251	12,863,383	12,956,818	13,015,770
B	0	0	0	0	695,038	2,209,021	4,631,709	8,134,023	5,458,262	533,849	0	0	0	0
C	0	0	0	0	7,888,104	7,294,771	6,616,795	2,959,692	0	0	0	0	0	0
D	0	0	0	0	3,619,760	3,946,944	2,156,999	0	0	0	0	0	0	0
F	0	0	0	0	1,293,319	978,486	0	0	0	0	0	0	0	0
Subtotal	13,740,379	12,096,968	13,550,163	13,919,263	13,647,267	14,567,136	14,747,387	14,724,268	15,254,289	15,125,293	12,921,251	12,863,383	12,956,818	13,015,770
NM	5,397,421	7,078,971	5,621,404	5,213,347	5,457,364	4,565,199	4,465,049	4,582,798	4,123,813	4,339,904	6,649,010	6,787,744	6,789,409	6,780,021
Total	19,137,800	19,175,939	19,171,567	19,132,610	19,104,631	19,132,335	19,212,436	19,307,066	19,378,102	19,465,197	19,570,261	19,651,127	19,746,227	19,795,791

## 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	2011-2013	2012-2014	2013-2015
A	3,452,585	1,337,176	5,025,310	3,882,042	4,956,586	8,038,646	9,104,666	9,964,956	14,461,353	15,125,293	12,921,251	7,768,395	11,419,605	12,195,511
B	4,490,587	4,420,420	3,136,849	4,538,165	4,621,533	1,151,708	4,167,467	4,071,182	792,937	0	0	4,010,882	1,128,147	411,130
C	4,307,373	5,885,248	4,341,373	4,112,074	2,830,675	3,871,162	681,744	688,131	0	0	0	1,084,106	409,067	411,130
D	452,913	454,124	1,046,631	1,386,983	1,238,474	1,505,620	793,511	0	0	0	0	0	0	0
F	1,036,921	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	13,740,379	12,096,968	13,550,163	13,919,263	13,647,267	14,567,136	14,747,387	14,724,268	15,254,289	15,125,293	12,921,251	12,863,383	12,956,818	13,015,770
NM	5,397,421	7,078,971	5,621,404	5,213,347	5,457,364	4,565,199	4,465,049	4,582,798	4,123,813	4,339,904	6,649,010	6,787,744	6,789,409	6,780,021
Total	19,137,800	19,175,939	19,171,567	19,132,610	19,104,631	19,132,335	19,212,436	19,307,066	19,378,102	19,465,197	19,570,261	19,651,127	19,746,227	19,795,791

NM – Not Monitored

Figure NY-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone New York

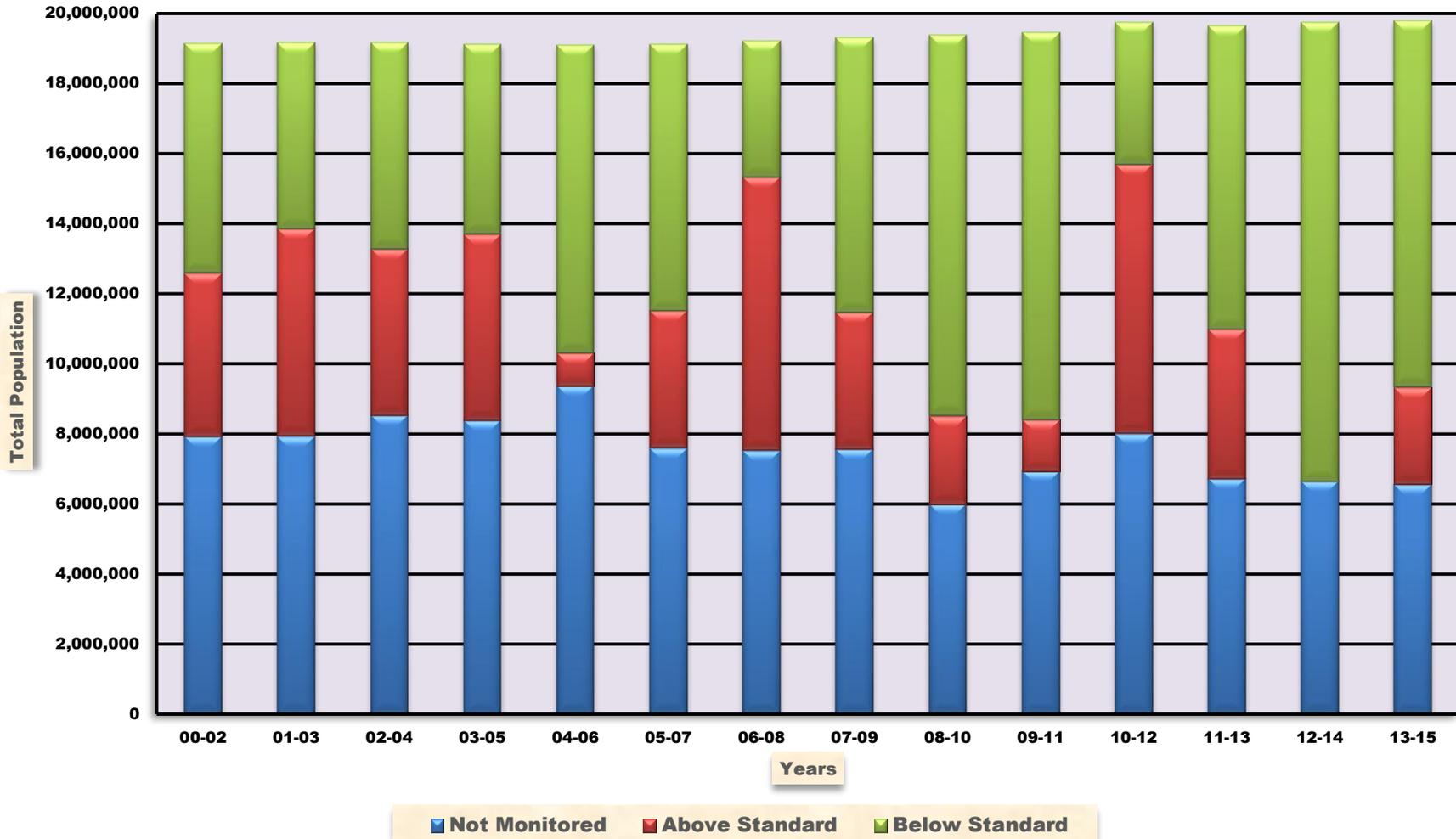


Figure NY-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 New York

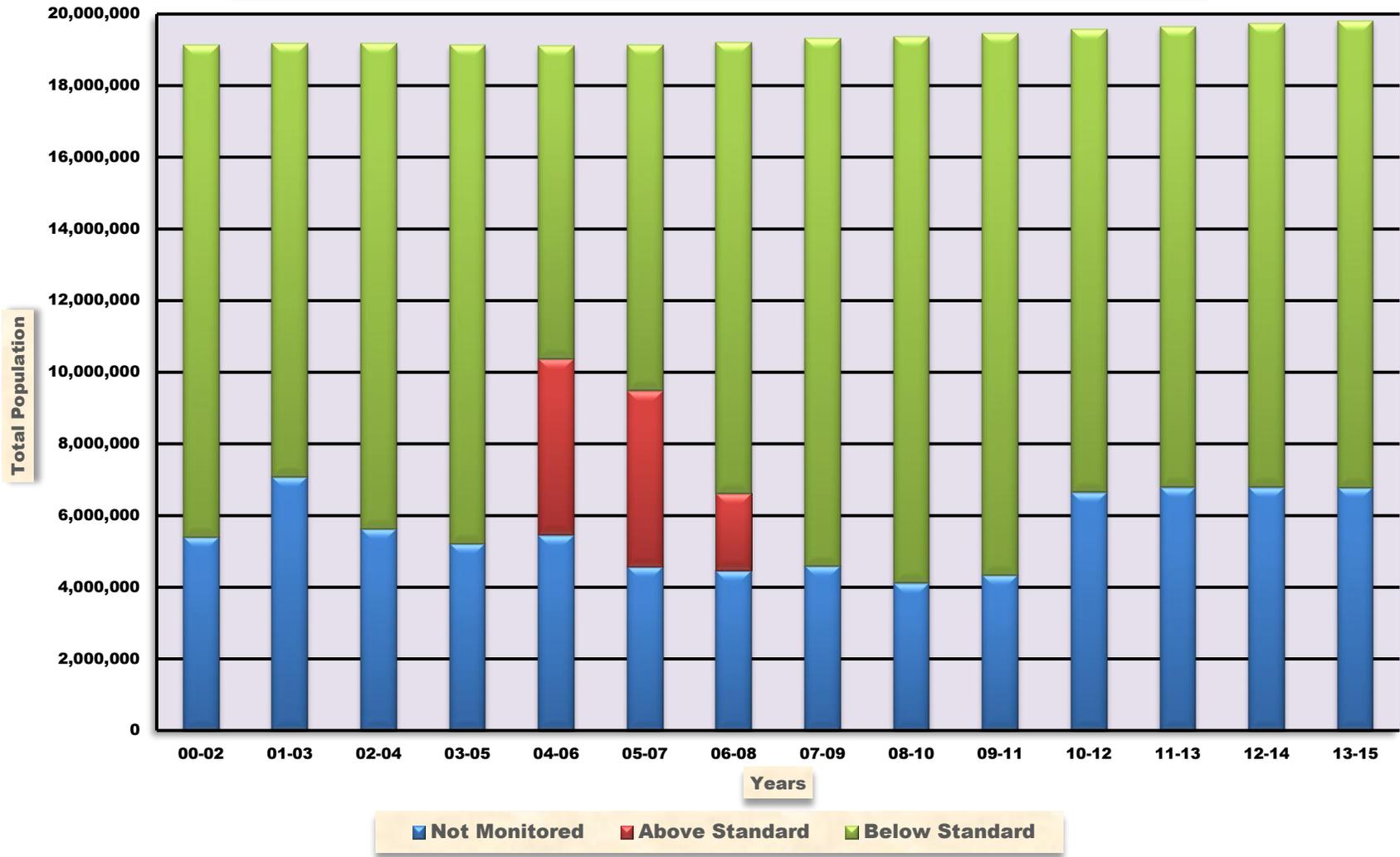
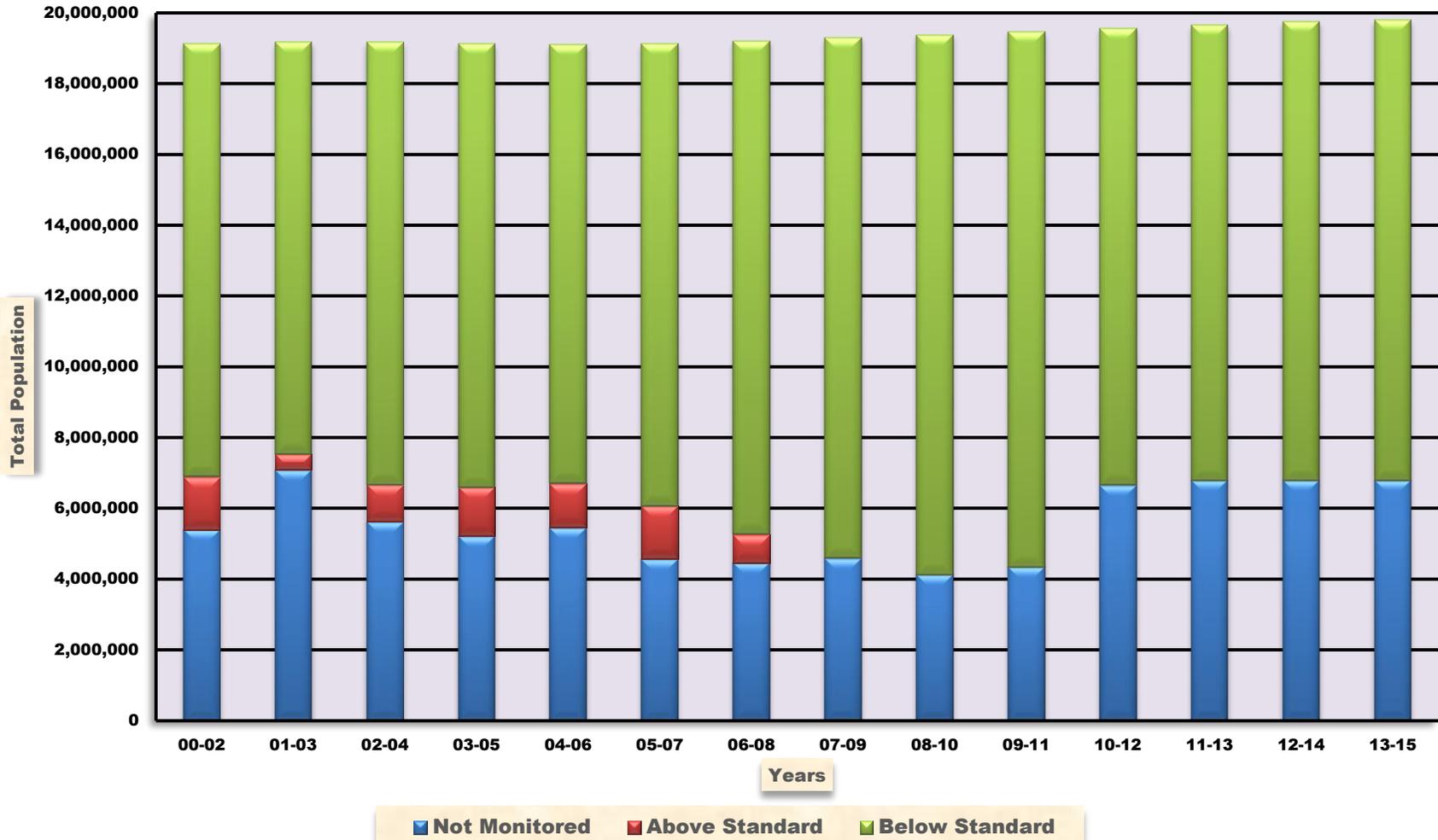


Figure NY-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
New York



# NORTH CAROLINA

## Ozone

In the 2000 – 2002 time period, 1.1 million people (12.9%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 6.5 million people (64.3%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure NC-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.090 ppm. By 2013 – 2015 this had lowered to a value of 0.063 ppm, a reduction of 30.0 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 4.3 million people (51.8%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 5.2 million people (52.0%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure NC-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 31  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 18  $\mu\text{g}/\text{m}^3$ , a reduction of 41.9 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 3.4 million people (41.4%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 5.2 million people (52.0%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure NC-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 14.4  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.7  $\mu\text{g}/\text{m}^3$ , a reduction of 39.6 percent.

# NORTH CAROLINA

**Table NC-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Avery	17,689	0.061	B	Y	ND	--	ND	--	--
Buncombe	253,178	0.063	C	N	15	A	7.6	A	N
Caldwell	81,287	0.062	B	N	ND	--	ND	--	--
Carteret	68,878	0.060	B	N	ND	--	ND	--	--
Caswell	22,941	0.063	C	N	20	A	9.4	A	N
Catawba	55,056	ND	--	--	18	A	8.9	A	N
Chatham	70,928	0.058	B	N	ND	--	ND	--	--
Cumberland	323,838	0.061	B	N	16	A	8.5	A	N
Davidson	164,622	ND	--	--	19	A	9.3	A	N
Duplin	59,159	ND	--	--	15	A	7.3	A	N
Durham	300,952	0.061	B	N	16	A	7.9	A	N
Edgecombe	54,150	0.062	B	N	ND	--	ND	--	--
Forsyth	369,019	0.064	C	Y	18	A	8.4	A	Y
Franklin	63,710	0.061	B	N	ND	--	ND	--	--
Graham	8,616	0.064	C	N	ND	--	ND	--	--
Granville	58,674	0.063	C	N	ND	--	ND	--	--
Guilford	517,600	0.063	C	N	16	A	8.3	A	N
Haywood	59,868	0.063	C	N	18	A	8.2	A	N
Jackson	41,265	ND	--	--	15	A	7.3	A	N
Johnston	185,660	0.063	C	N	16	A	7.3	A	N
Lenoir	58,106	0.063	C	N	ND	--	ND	--	--
Lincoln	81,035	0.065	C	N	ND	--	ND	--	--
McDowell	44,989	ND	--	--	17	A	8.5	A	N
Macon	34,201	0.062	B	N	ND	--	ND	--	--
Martin	23,357	0.062	B	N	14	A	6.9	A	N
Mecklenburg	1,034,070	0.067	C	Y	17	A	8.8	A	N
Mitchell	15,246	ND	--	--	16	A	7.7	A	N
Montgomery	27,548	0.060	B	N	15	A	8.0	A	N
New Hanover	220,358	0.061	B	N	14	A	6.5	A	N
Person	39,259	0.061	B	N	ND	--	ND	--	--
Pitt	175,842	0.062	B	N	15	A	7.3	A	N
Rockingham	91,758	0.064	C	N	ND	--	ND	--	--
Rowan	139,142	0.064	C	N	18	A	8.6	A	N
Swain	14,434	0.058	B	N	18	A	7.6	A	N
Union	222,742	0.065	C	N	ND	--	ND	--	--
Wake	1,024,198	0.062	B	Y	22	A	10.8	C	N
Watauga	52,906	ND	--	--	13	A	6.6	A	N
Yancey	17,587	0.066	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>6,093,868</b>								
Not Monitored	3,948,934								
<b>Total</b>	<b>10,042,802</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table NC-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m<sup>3</sup>)</b>	<b>Annual PM-2.5 (µg/m<sup>3</sup>)</b>
2000 – 2002	0.090	31	14.4
2001 – 2003	0.088	31	13.7
2002 – 2004	0.084	30	13.4
2003 – 2005	0.080	30	13.5
2004 – 2006	0.078	30	13.5
2005 – 2007	0.080	30	13.5
2006 – 2008	0.080	27	12.8
2007 – 2009	0.076	24	11.5
2008 - 2010	0.073	22	10.7
2009 – 2011	0.072	21	9.9
2010 – 2012	0.074	21	9.6
2011 – 2013	0.070	20	9.0
2012 - 2014	0.066	18	8.7
2013 - 2015	0.063	18	8.7

# NORTH CAROLINA

## Table NC-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	13,693	13,819	0	0	0	0	0	14,058	48,623	0
B	13,120	13,199	228,501	692,343	1,981,050	826,413	31,896	31,858	33,660	793,843	399,525	1,230,893	3,892,577	2,140,742
C	1,059,579	1,485,316	2,797,016	3,155,188	2,012,647	3,629,711	1,010,225	2,473,539	3,926,854	3,821,506	3,515,407	3,938,148	1,982,032	4,321,340
D	2,617,993	2,756,992	1,865,737	598,731	554,338	710,411	3,176,246	2,112,752	1,327,587	1,013,383	1,141,138	660,651	0	0
F	1,052,372	688,059	66,101	0	0	0	729,715	441,463	0	0	646,021	0	0	0
Subtotal	4,743,065	4,943,566	4,957,355	4,446,262	4,561,729	5,180,354	4,948,082	5,059,612	5,288,101	5,628,732	5,702,090	5,843,751	5,923,232	6,462,082
NM	3,583,137	3,478,936	3,595,797	4,259,146	4,355,542	3,937,683	4,361,368	4,389,955	4,247,383	4,027,670	4,049,983	4,004,310	4,020,732	3,580,720
Total	8,326,201	8,422,501	8,553,152	8,705,407	8,917,270	9,118,037	9,309,449	9,449,566	9,535,483	9,656,401	9,752,073	9,848,060	9,943,964	10,042,802

## 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	2011-2013	2012-2014	2013-2015
A	4,312,162	4,357,429	5,064,828	5,013,177	879,780	520,163	1,988,357	4,595,271	4,955,298	5,147,309	5,442,395	5,673,534	5,846,493	5,225,248
B	0	0	0	0	2,439,402	3,205,341	1,631,796	0	0	0	0	0	0	0
C	0	0	0	0	667,990	491,086	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	4,312,162	4,357,429	5,064,828	5,013,177	3,987,172	4,216,590	3,620,153	4,595,271	4,955,298	5,147,309	5,442,395	5,673,534	5,846,493	5,225,248
NM	4,014,039	4,065,072	3,488,324	3,692,230	4,930,098	4,901,447	5,689,296	4,854,295	4,580,185	4,509,092	4,309,678	4,174,526	4,097,471	4,817,554
Total	8,326,201	8,422,501	8,553,152	8,705,407	8,917,270	9,118,037	9,309,449	9,449,566	9,535,483	9,656,401	9,752,073	9,848,060	9,943,964	10,042,802

## 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	2011-2013	2012-2014	2013-2015
A	356,825	245,296	587,288	706,621	691,216	508,573	697,979	3,328,006	4,792,420	5,147,309	5,442,395	3,877,183	5,097,766	4,201,050
B	343,510	1,227,616	1,577,713	1,508,571	888,672	893,818	2,173,088	1,267,265	162,878	0	0	1,796,352	686,500	0
C	2,746,959	2,586,107	2,598,632	2,227,697	2,174,551	2,661,751	749,086	0	0	0	0	0	62,228	1,024,198
D	713,573	298,410	301,195	570,288	232,434	152,448	0	0	0	0	0	0	0	0
F	151,296	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	4,312,162	4,357,429	5,064,828	5,013,177	3,987,172	4,216,590	3,620,153	4,595,271	4,955,298	5,147,309	5,442,395	5,673,534	5,846,493	5,225,248
NM	4,014,039	4,065,072	3,488,324	3,692,230	4,930,098	4,901,447	5,689,296	4,854,295	4,580,185	4,509,092	4,309,678	4,174,526	4,097,471	4,817,554
Total	8,326,201	8,422,501	8,553,152	8,705,407	8,917,270	9,118,037	9,309,449	9,449,566	9,535,483	9,656,401	9,752,073	9,848,060	9,943,964	10,042,802

NM – Not Monitored

Figure NC-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone North Carolina

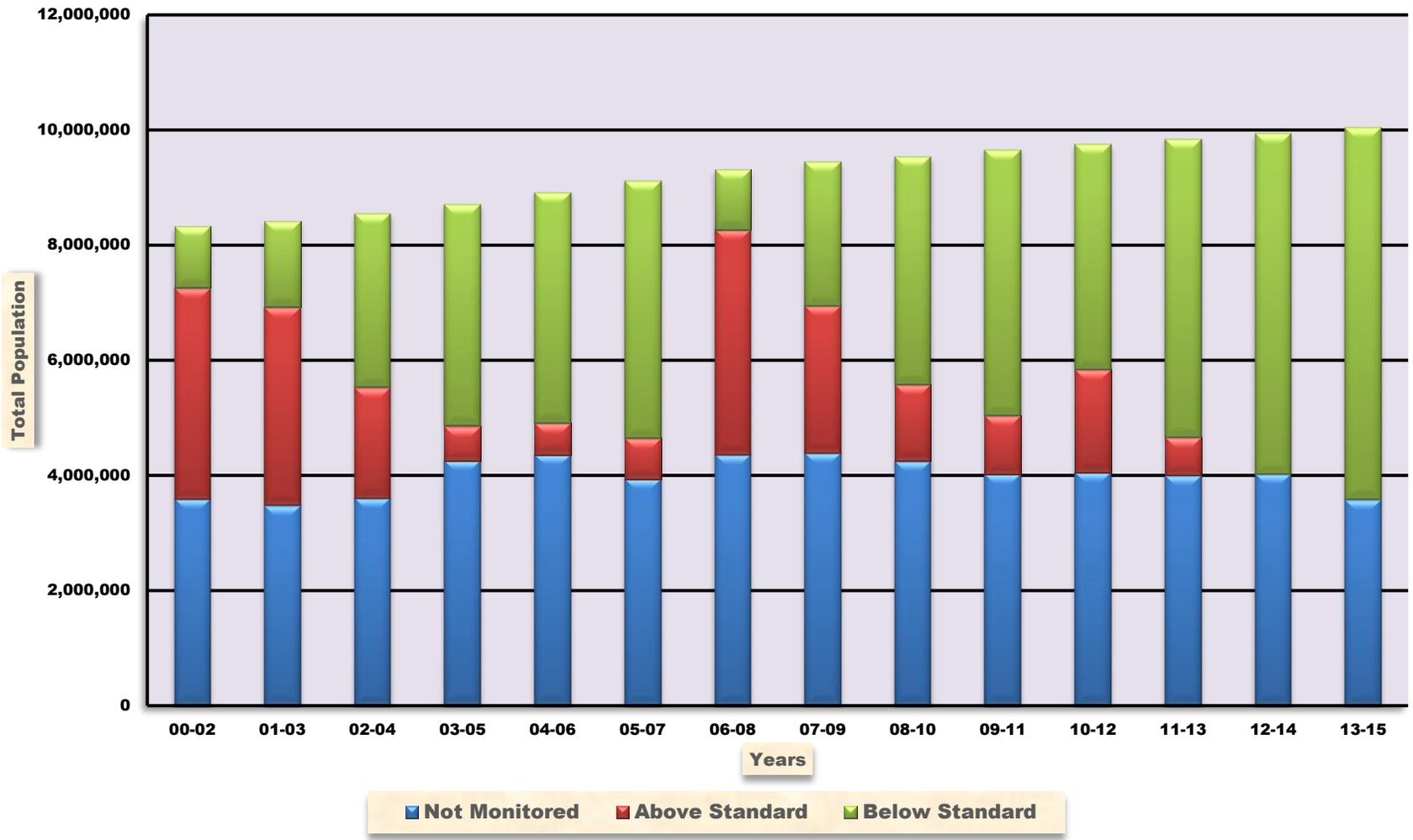


Figure NC-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 North Carolina

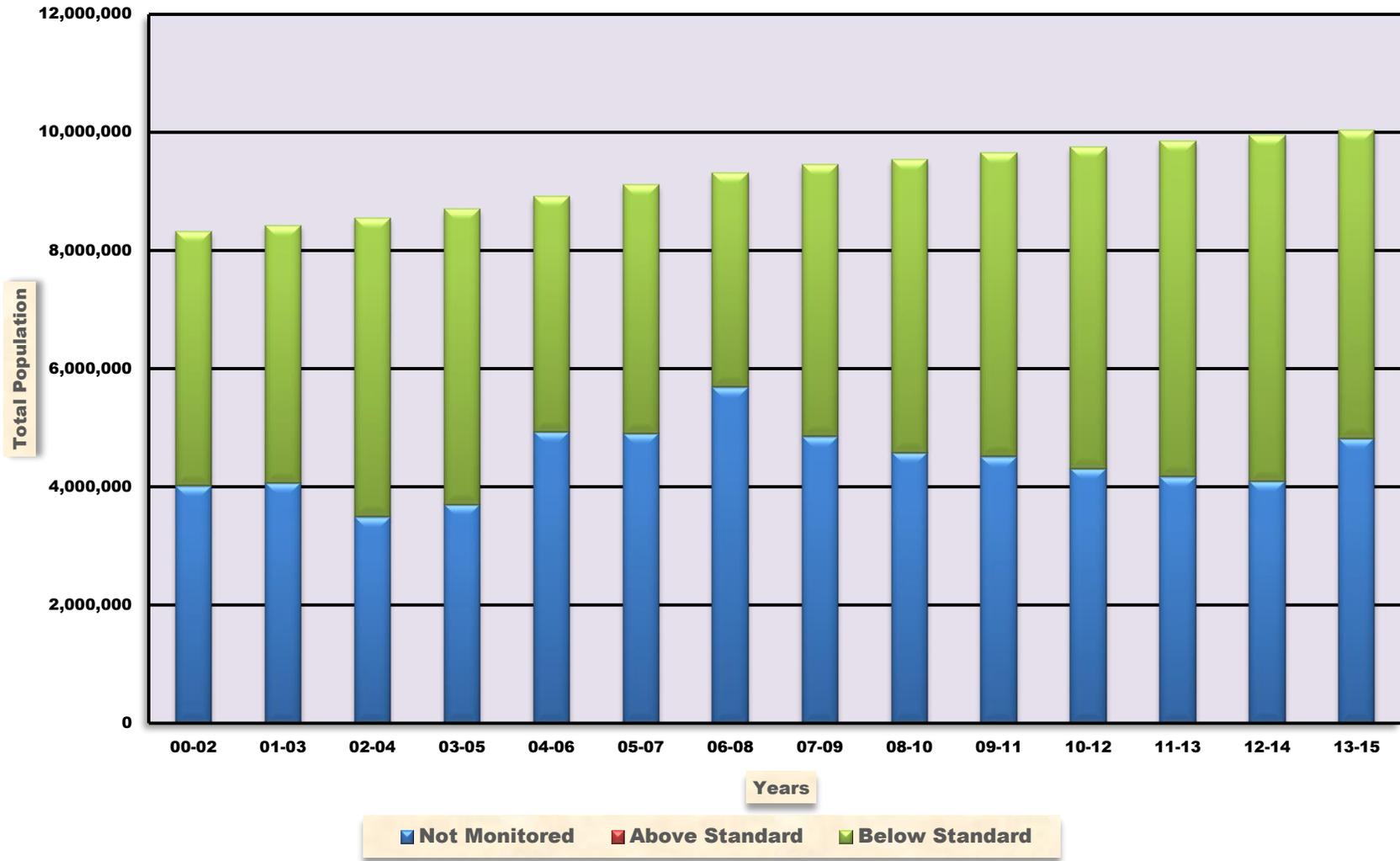
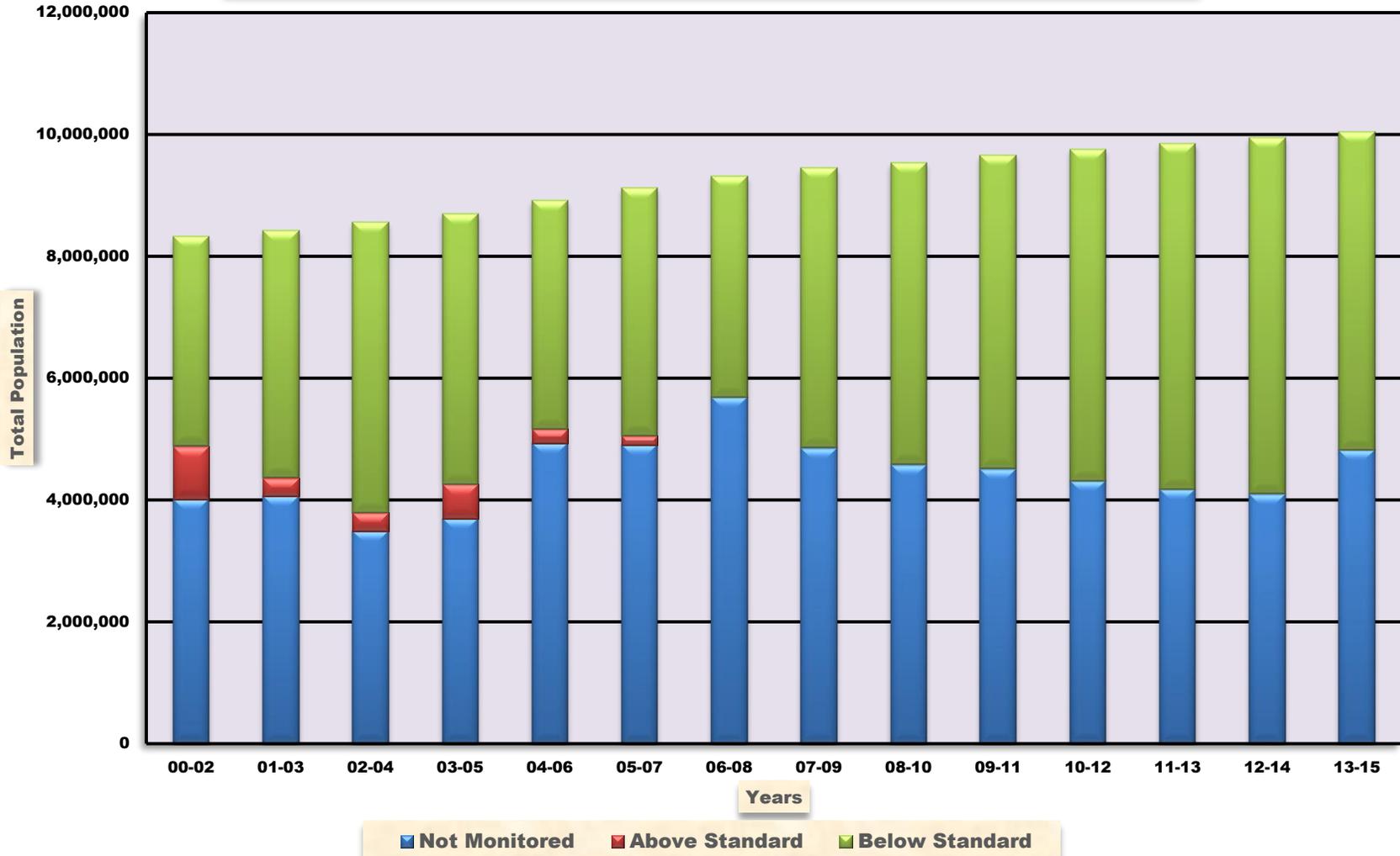


Figure NC-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 North Carolina



# NORTH DAKOTA

## Ozone

In the 2000 – 2002 time period, 0.14 million people (21.4%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.33 million people (43.8%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 to 0.070 ppm. Figure ND-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.062 ppm. By 2013 – 2015 this had lowered to a value of 0.059 ppm, a reduction of 4.8 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.21 million people (32.7%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.33 million people (43.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m<sup>3</sup>. Figure ND-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 in 2000 – 2002 was 21 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 16 µg/m<sup>3</sup>, a reduction of 23.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.21 million people (32.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 0.33 million people (43.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure ND-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 7.3 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 5.6 µg/m<sup>3</sup>, a reduction of 23.9 percent.

**Table ND-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Billings	936	0.056	B	N	11	A	4.4	A	N
Burke	2,308	0.061	B	N	14	A	5.2	A	N
Burleigh	92,991	0.061	B	N	16	A	4.6	A	Y
Cass	171,512	0.058	B	N	16	A	6.1	A	N
Dunn	4,646	0.059	B	N	21	A	5.1	A	N
McKenzie	12,826	0.058	B	N	18	A	3.4	A	N
Mercer	8,853	0.058	B	N	15	A	5.1	A	N
Oliver	1,846	0.061	B	N	18	A	4.7	A	N
Williams	35,294	0.058	B	N	18	A	6.6	A	N
<b>Subtotal</b>	<b>621,212</b>								
Not Monitored	435,715								
<b>Total</b>	<b>756,927</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table ND-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m<sup>3</sup>)</b>	<b>Annual PM-2.5 (µg/m<sup>3</sup>)</b>
2000 – 2002	0.062	21	7.3
2001 – 2003	0.063	19	7.4
2002 – 2004	0.061	20	7.1
2003 – 2005	0.060	20	7.2
2004 – 2006	0.060	21	7.2
2005 – 2007	0.060	18	7.4
2006 – 2008	0.059	18	7.5
2007 – 2009	0.056	18	7.4
2008 - 2010	0.058	21	7.6
2009 – 2011	0.058	20	7.4
2010 – 2012	0.060	21	7.4
2011 – 2013	0.059	17	6.5
2012 - 2014	0.059	17	6.2
2013 - 2015	0.059	16	5.6

# NORTH DAKOTA

## Table ND-3 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	2011-2013	2012-2014	2013-2015
A	136,509	141,383	152,613	154,597	160,387	163,468	228,340	243,703	242,139	253,627	98,675	278,408	119,640	159,700
B	0	0	0	0	0	0	16,807	6,955	8,328	2,033	164,643	0	167,005	171,512
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>136,509</b>	<b>141,383</b>	<b>152,613</b>	<b>154,597</b>	<b>160,387</b>	<b>163,468</b>	<b>245,147</b>	<b>250,658</b>	<b>250,467</b>	<b>255,660</b>	<b>263,318</b>	<b>278,408</b>	<b>286,645</b>	<b>331,212</b>
<b>NM</b>	<b>501,659</b>	<b>497,434</b>	<b>492,092</b>	<b>491,492</b>	<b>489,035</b>	<b>489,354</b>	<b>412,422</b>	<b>414,310</b>	<b>422,124</b>	<b>428,272</b>	<b>436,310</b>	<b>444,985</b>	<b>452,837</b>	<b>425,715</b>
<b>Total</b>	<b>638,168</b>	<b>638,817</b>	<b>644,705</b>	<b>646,089</b>	<b>649,422</b>	<b>652,822</b>	<b>657,569</b>	<b>664,968</b>	<b>672,591</b>	<b>683,932</b>	<b>699,628</b>	<b>723,393</b>	<b>739,482</b>	<b>756,927</b>

### 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	2011-2013	2012-2014	2013-2015
A	208,882	218,385	222,955	226,458	229,057	227,902	232,031	237,180	240,293	244,778	251,322	276,534	286,645	331,212
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>208,882</b>	<b>208,385</b>	<b>222,955</b>	<b>226,458</b>	<b>229,057</b>	<b>227,902</b>	<b>232,031</b>	<b>237,180</b>	<b>240,293</b>	<b>244,778</b>	<b>251,322</b>	<b>276,534</b>	<b>286,645</b>	<b>331,212</b>
<b>NM</b>	<b>429,286</b>	<b>420,432</b>	<b>421,750</b>	<b>419,631</b>	<b>420,365</b>	<b>424,920</b>	<b>425,538</b>	<b>427,788</b>	<b>432,298</b>	<b>439,154</b>	<b>448,306</b>	<b>446,859</b>	<b>452,837</b>	<b>425,715</b>
<b>Total</b>	<b>638,168</b>	<b>638,817</b>	<b>644,705</b>	<b>646,089</b>	<b>649,422</b>	<b>652,822</b>	<b>657,569</b>	<b>664,968</b>	<b>672,591</b>	<b>683,932</b>	<b>699,628</b>	<b>723,393</b>	<b>739,482</b>	<b>756,927</b>

### 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	2011-2013	2012-2014	2013-2015
A	208,882	218,385	222,955	226,458	229,057	227,902	232,031	237,180	240,293	244,778	251,322	276,534	286,645	331,212
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>208,882</b>	<b>218,385</b>	<b>222,955</b>	<b>226,458</b>	<b>229,057</b>	<b>227,902</b>	<b>232,031</b>	<b>237,180</b>	<b>240,293</b>	<b>244,778</b>	<b>251,322</b>	<b>276,534</b>	<b>286,645</b>	<b>331,212</b>
<b>NM</b>	<b>429,286</b>	<b>420,432</b>	<b>421,750</b>	<b>419,631</b>	<b>420,365</b>	<b>424,920</b>	<b>425,538</b>	<b>427,788</b>	<b>432,298</b>	<b>439,154</b>	<b>448,306</b>	<b>446,859</b>	<b>452,837</b>	<b>425,715</b>
<b>Total</b>	<b>638,168</b>	<b>638,817</b>	<b>644,705</b>	<b>646,089</b>	<b>649,422</b>	<b>652,822</b>	<b>657,569</b>	<b>664,968</b>	<b>672,591</b>	<b>683,932</b>	<b>699,628</b>	<b>723,393</b>	<b>739,482</b>	<b>756,927</b>

**NM – Not Monitored**

Figure ND-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone North Dakota

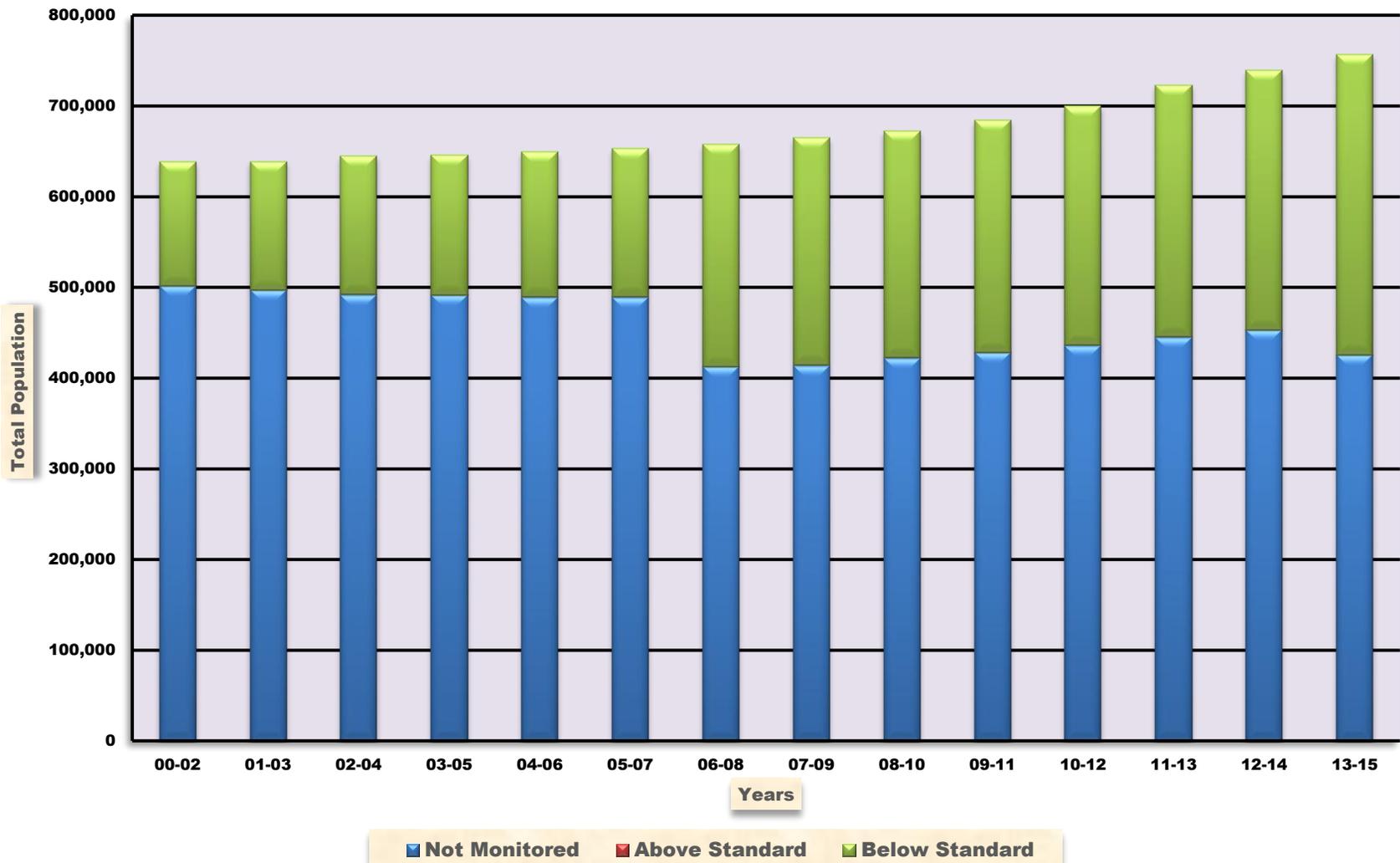


Figure ND-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 North Dakota

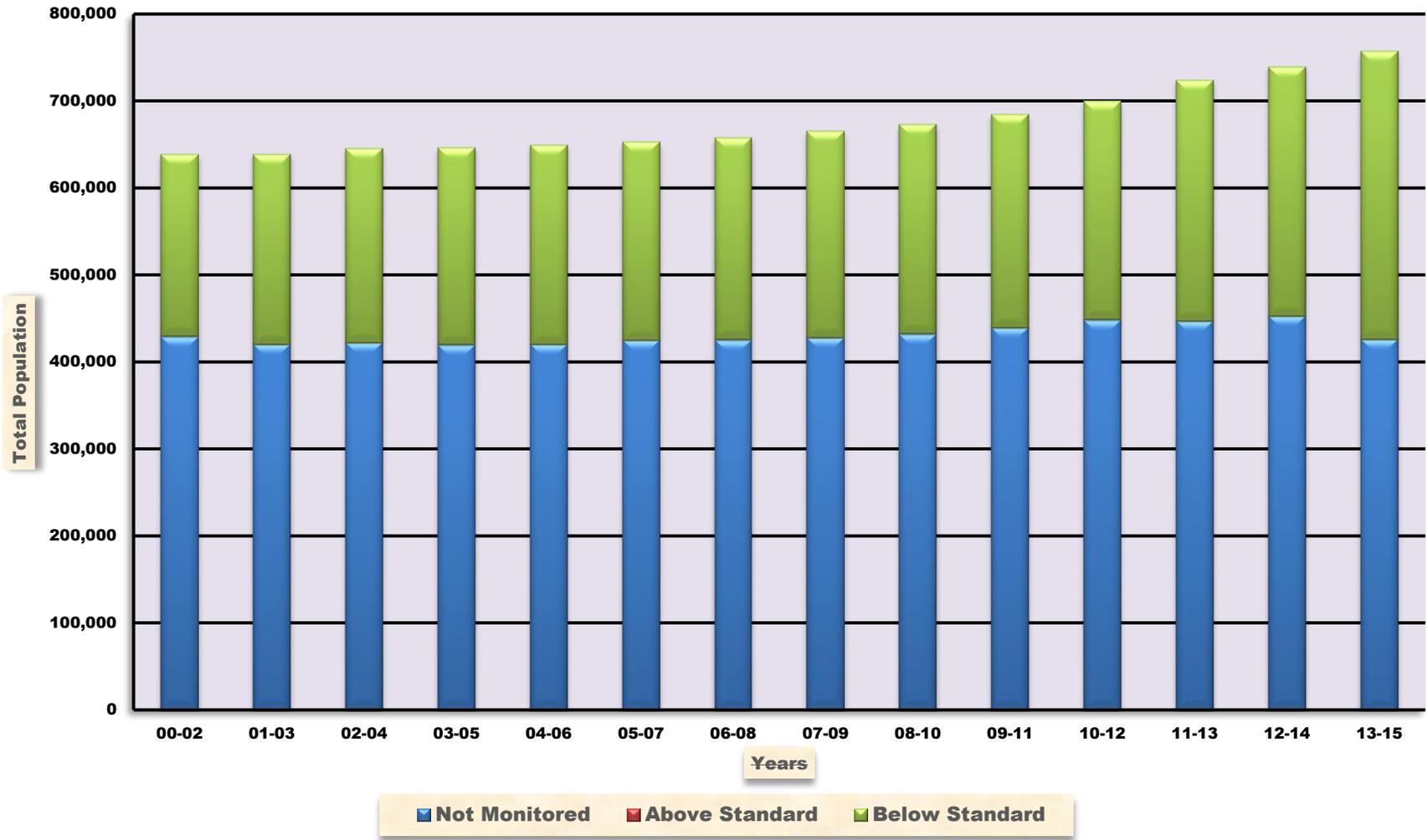
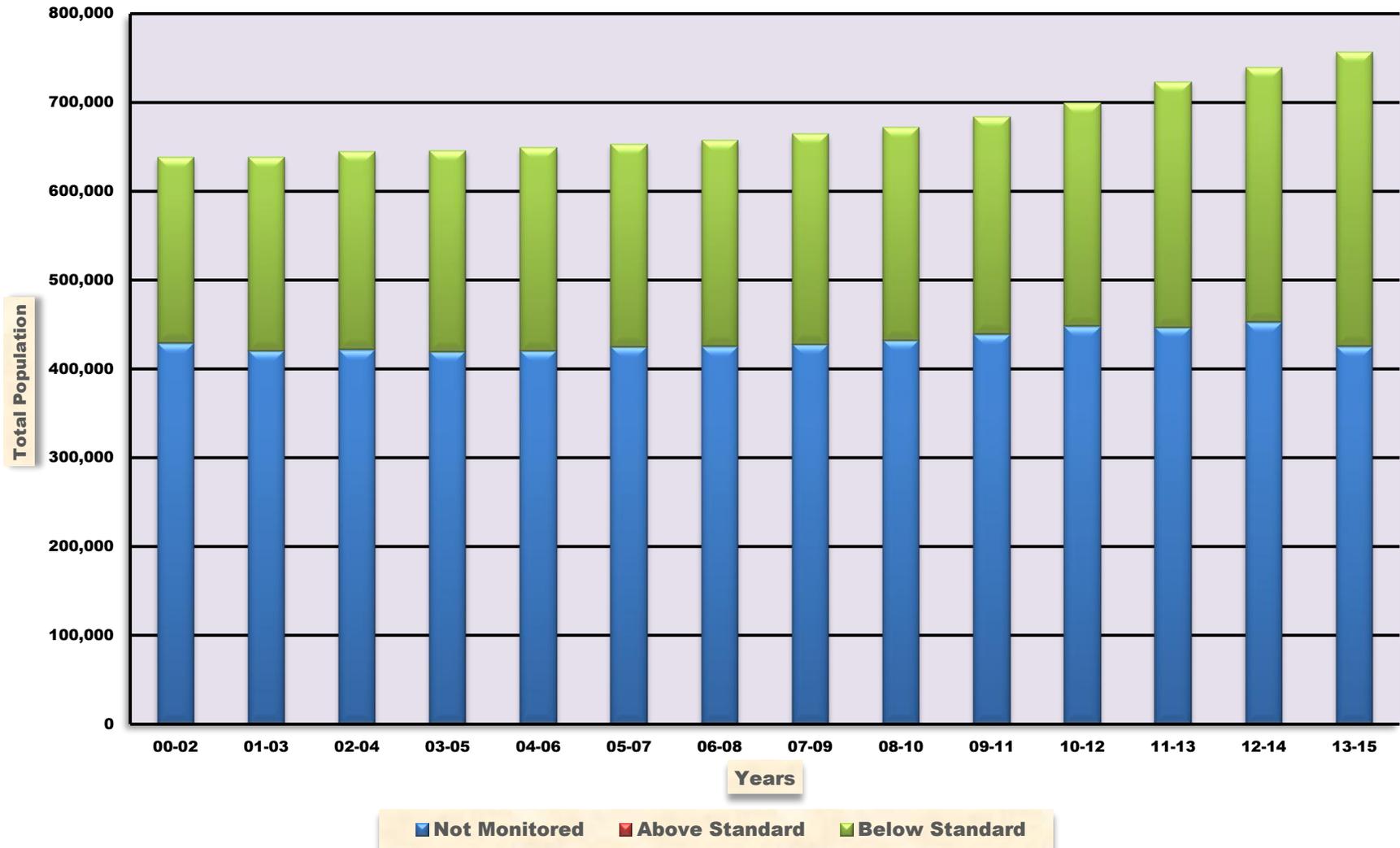


Figure ND-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 North Dakota



# OHIO

## Ozone

In the 2000 – 2002 time period, 4.5 million people (39.5%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 8.4 million people (72.3%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure OH-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.087 ppm. By 2013 – 2015 this had lowered to a value of 0.066 ppm, a reduction of 24.1 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, 6.2 million people (54.4%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 6.8 million people (58.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure OH-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 40  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 42.5 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.1 million people (9.7%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 6.2 million people (53.2%). The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure OH-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 16.4  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 10.1  $\mu\text{g}/\text{m}^3$ , a reduction of 38.4 percent.

# OHIO

**Table OH-1  
2013 – 2015**

County	Population	Ozone			Particle Pollution (PM-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Allen	104,425	0.066	C	N	23	A	9.6	B	N
Ashtabula	98,632	0.069	C	N	ND	--	ND	--	--
Athens	65,886	ND	--	--	17	A	7.8	A	N
Butler	376,353	0.068	C	Y	23	A	10.5	B	Y
Clark	135,959	0.067	C	Y	23	A	9.6	B	N
Clermont	201,973	0.068	C	N	ND	--	ND	--	--
Clinton	41,917	0.068	C	N	ND	--	ND	--	--
Cuyahoga	1,255,921	0.065	C	Y	25	A	11.1	C	Y
Delaware	193,013	0.068	C	N	ND	--	ND	--	--
Fayette	28,679	0.067	C	N	ND	--	ND	--	--
Franklin	1,251,722	0.067	C	Y	23	A	10.0	B	Y
Geauga	94,102	0.067	C	N	ND	--	ND	--	--
Greene	164,427	0.067	C	N	21	A	9.4	A	N
Hamilton	807,598	0.069	C	Y	22	A	10.3	B	Y
Jefferson	67,347	0.066	C	N	25	A	10.9	C	N
Knox	61,061	0.068	C	N	ND	--	ND	--	--
Lake	229,245	0.069	C	Y	19	A	8.5	A	N
Lawrence	61,109	0.063	C	Y	ND	--	ND	--	--
Licking	170,570	0.066	C	N	ND	--	ND	--	--
Lorain	305,147	0.063	C	N	22	A	8.7	A	N
Lucas	433,689	0.064	C	Y	24	A	10.0	B	Y
Madison	44,094	0.068	C	N	ND	--	ND	--	--
Mahoning	231,900	0.066	C	N	23	A	10.5	B	N
Medina	176,395	0.064	B	N	21	A	8.4	A	N
Miami	104,224	0.068	C	N	ND	--	ND	--	--
Montgomery	532,258	0.069	C	N	ND	--	ND	--	--
Noble	14,326	0.064	C	N	ND	--	ND	--	--
Portage	162,275	0.061	B	N	21	A	8.9	A	N
Preble	41,329	0.066	C	N	21	A	9.1	A	N
Scioto	76,825	ND	--	--	19	A	8.6	A	N
Stark	375,165	0.066	C	Y	25	A	11.1	C	Y
Summit	541,968	0.061	B	N	24	A	10.2	B	Y
Trumbull	203,751	0.067	C	N	ND	--	ND	--	--
Warren	224,469	0.069	C	N	ND	--	ND	--	--
Washington	61,112	0.064	C	N	ND	--	ND	--	--
Wood	129,730	0.063	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>9,068,596</b>								
Not Monitored	2,544,827								
<b>Total</b>	<b>11,613,423</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table OH-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.087	40	16.4
2001 – 2003	0.089	39	15.7
2002 – 2004	0.085	37	15.0
2003 – 2005	0.080	38	15.3
2004 – 2006	0.077	36	14.9
2005 – 2007	0.080	37	15.0
2006 – 2008	0.078	32	13.6
2007 – 2009	0.075	30	12.9
2008 - 2010	0.072	29	12.4
2009 – 2011	0.073	27	11.9
2010 – 2012	0.076	26	11.5
2011 – 2013	0.073	24	10.8
2012 - 2014	0.070	23	10.4
2013 - 2015	0.066	23	10.1

# OHIO

## Table OH-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	31,238	31,399	0	0	0	0	0	0	178,490	0	0
B	0	0	1,408,883	2,735,046	4,562,715	3,854,908	0	0	308,691	1,787,744	177,054	2,937,481	1,685,088	1,018,223
C	4,502,353	2,265,909	4,568,899	6,960,950	6,320,301	5,860,718	3,880,639	5,580,831	9,406,752	7,018,735	4,001,213	3,058,322	7,219,034	7,375,799
D	5,867,080	7,976,095	5,022,648	1,430,804	417,072	606,479	6,286,746	5,160,784	1,560,341	2,279,282	4,071,616	2,704,463	0	531,863
F	753,094	978,683	185,866	0	0	0	1,147,671	0	0	0	382,137	0	0	0
Subtotal	11,122,527	11,220,686	11,186,295	11,158,038	11,331,486	10,322,105	11,315,056	10,741,615	11,275,783	11,085,761	8,632,019	8,878,755	8,904,122	8,925,885
NM	285,362	214,102	265,956	305,282	149,727	1,178,363	200,335	787,281	260,721	459,190	2,912,206	2,692,053	2,690,041	2,687,538
Total	11,407,889	11,434,788	11,452,251	11,463,320	11,481,213	11,500,468	11,515,391	11,528,896	11,536,504	11,544,951	11,544,225	11,570,808	11,594,163	11,613,423

## 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	2011-2013	2012-2014	2013-2015
A	6,208,456	7,158,011	7,004,050	7,048,520	0	0	0	450,167	2,646,985	4,156,933	6,391,288	6,977,279	6,843,028	6,594,256
B	0	0	0	0	148,630	0	2,639,933	4,620,236	3,531,216	3,490,734	1,054,694	421,051	209,971	209,320
C	0	0	0	0	2,642,464	2,087,459	3,791,382	1,177,593	697,598	0	0	0	0	0
D	0	0	0	0	3,771,841	4,286,736	588,486	183,583	0	0	0	0	0	0
F	0	0	0	0	473,113	474,987	0	0	0	0	0	0	0	0
Subtotal	6,208,456	7,158,011	7,004,050	7,048,520	7,036,047	6,849,181	7,016,801	6,431,579	6,875,799	7,647,667	7,445,981	7,398,330	7,052,999	6,803,576
NM	5,199,433	4,306,777	4,448,201	4,414,800	4,445,166	4,651,287	4,498,590	5,097,317	4,660,705	3,897,284	4,098,244	4,172,478	4,541,164	4,809,847
Total	11,407,889	11,434,788	11,452,251	11,463,320	11,481,213	11,500,468	11,515,391	11,528,896	11,536,504	11,544,951	11,544,225	11,570,808	11,594,163	11,613,423

## 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	364,360	1,105,918	2,649,589	3,719,954	4,604,097	597,365	941,411	1,640,169
B	0	436,370	682,834	596,628	528,490	64,102	3,347,062	3,883,795	2,597,952	3,339,988	2,841,884	3,292,228	3,771,835	3,201,878
C	1,103,019	1,298,177	2,806,886	2,509,947	4,197,221	4,564,743	3,106,716	1,441,866	1,467,783	587,725	0	2,243,879	1,616,300	1,333,568
D	1,743,464	3,140,847	2,770,485	2,813,582	1,579,676	1,665,861	368,994	0	160,475	0	0	1,141,101	629,914	627,961
F	3,361,973	2,282,617	743,846	1,128,364	730,661	554,475	0	0	0	0	0	123,757	93,540	0
Subtotal	6,208,456	7,158,011	7,004,050	7,048,520	7,036,047	6,849,181	7,187,131	6,431,579	6,875,799	7,647,667	7,445,981	7,398,330	7,052,999	6,803,576
NM	5,199,433	4,306,777	4,448,201	4,414,800	4,445,166	4,651,287	4,328,260	5,097,317	4,660,705	3,897,284	4,098,244	4,172,478	4,541,164	4,809,847
Total	11,407,889	11,434,788	11,452,251	11,463,320	11,481,213	11,500,468	11,515,391	11,528,896	11,536,504	11,544,951	11,544,225	11,570,808	11,594,163	11,613,423

NM – Not Monitored

Figure OH-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Ohio

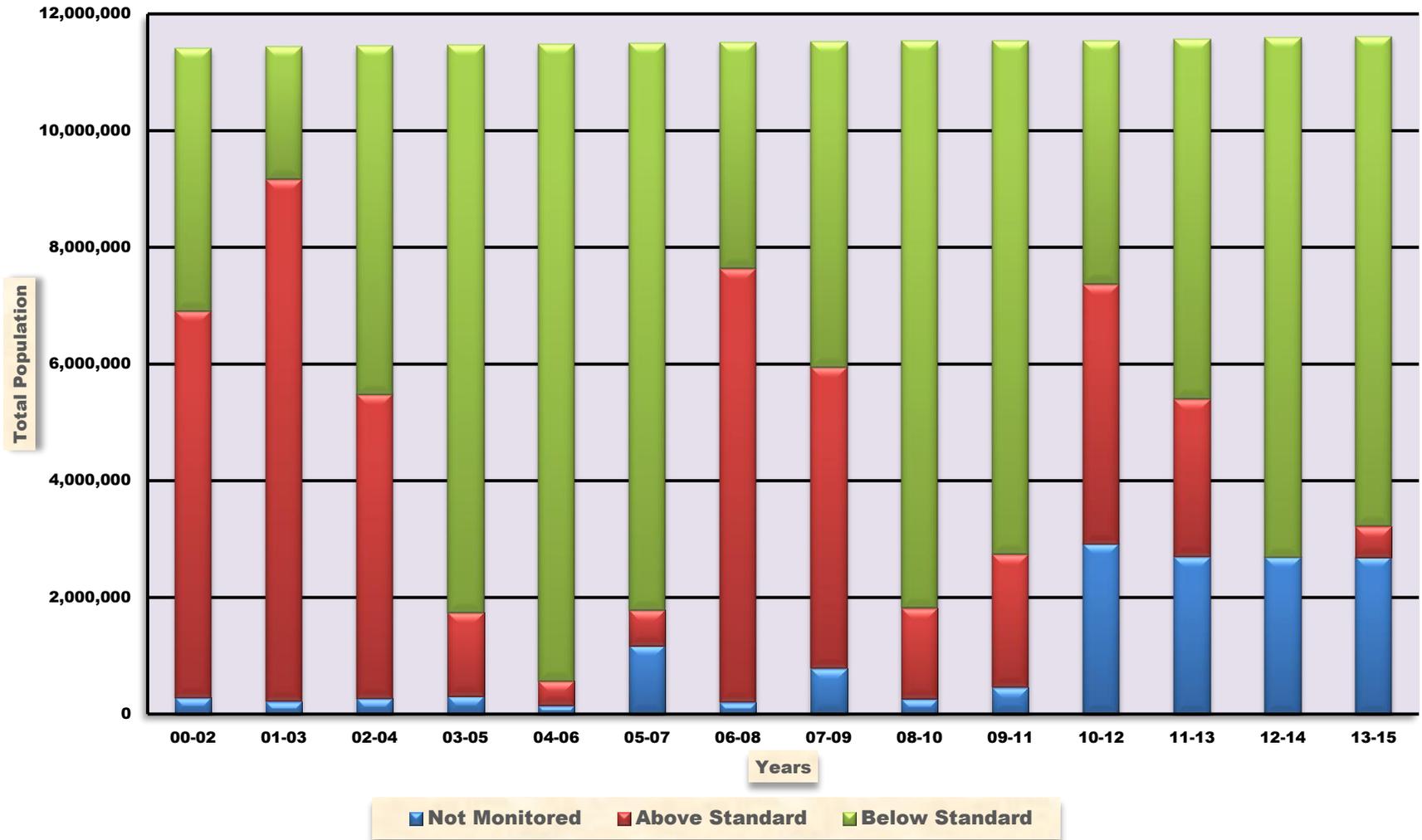


Figure OH-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Ohio

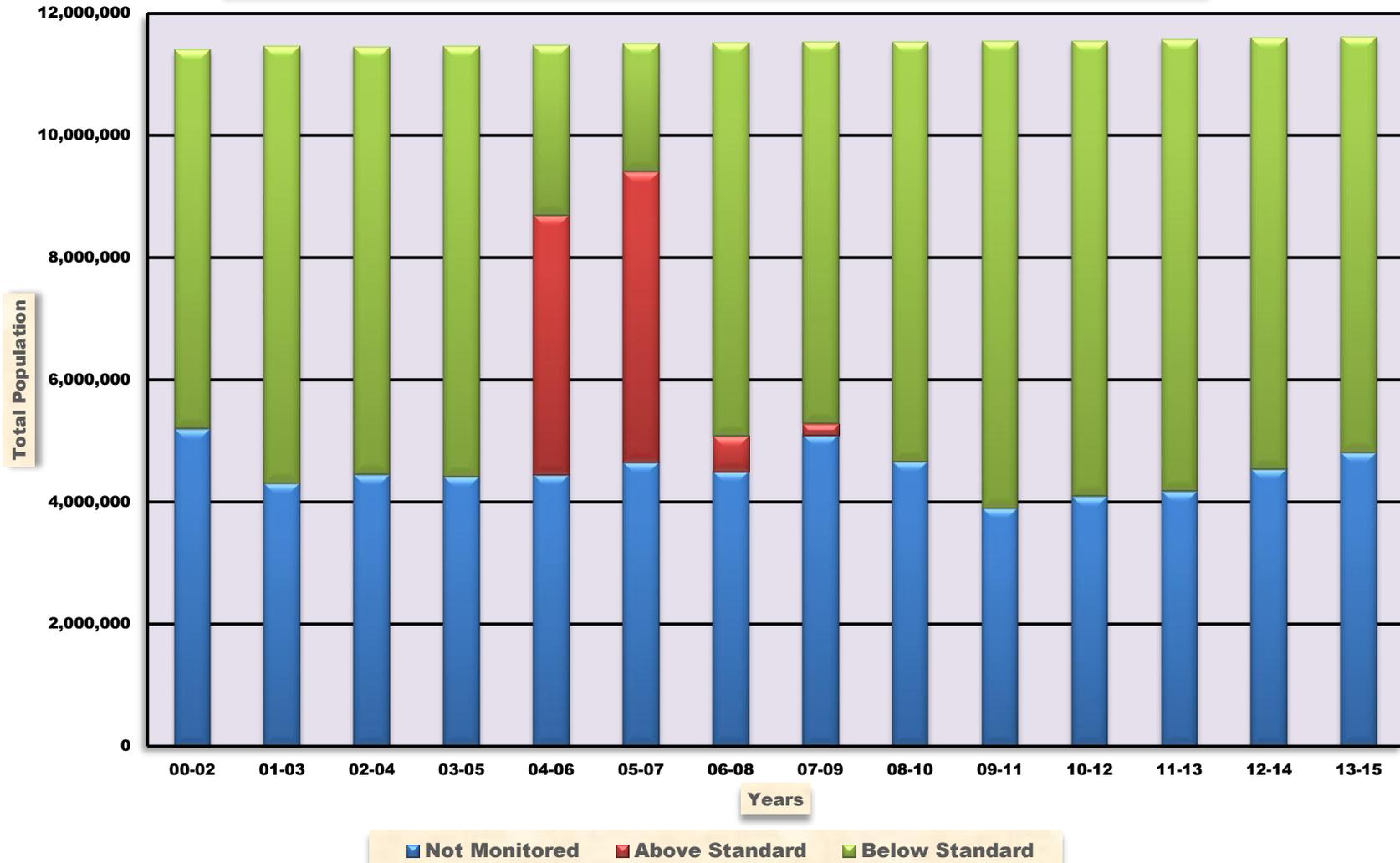
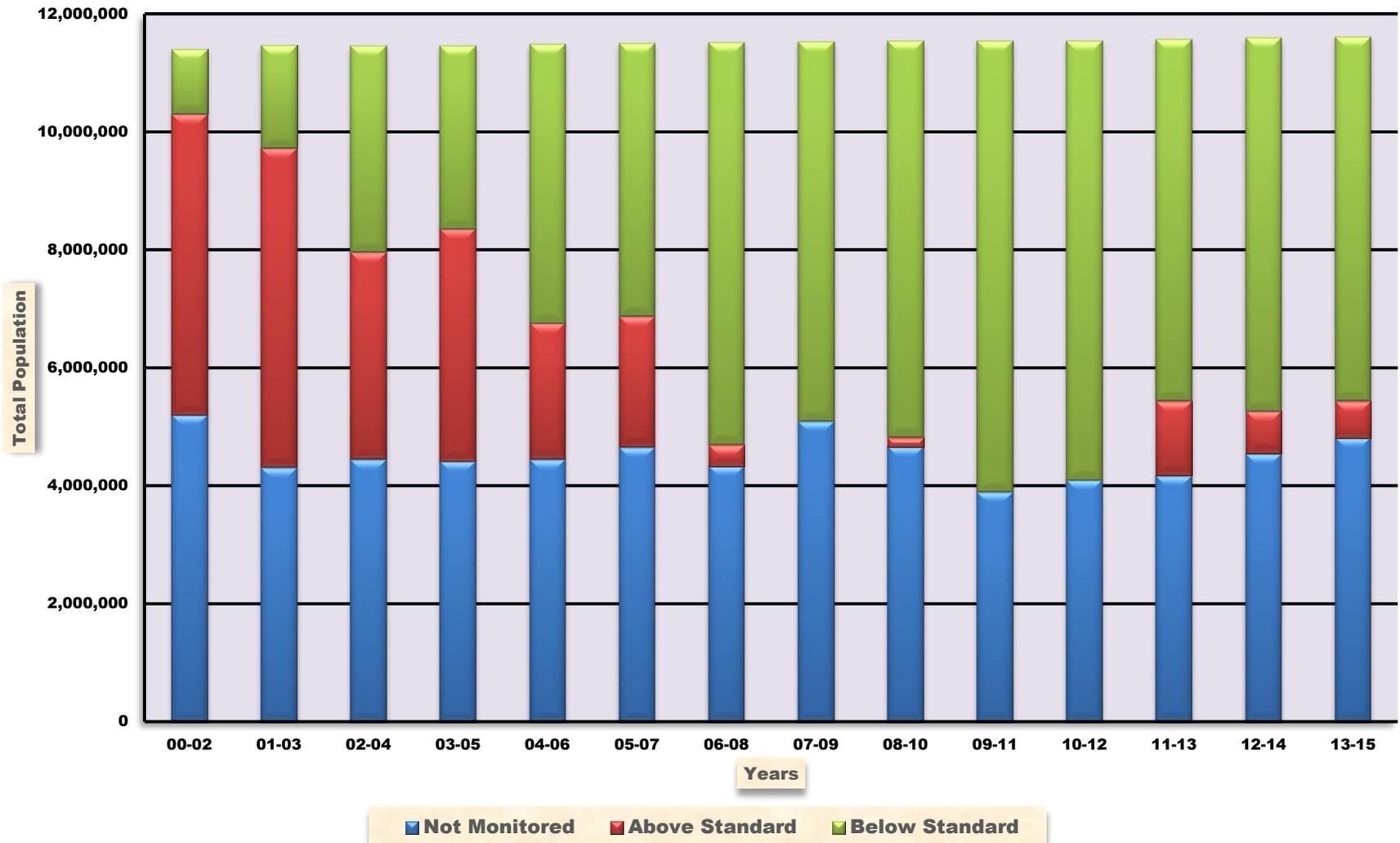


Figure OH-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Ohio



## OKLAHOMA

### Ozone

In the 2000 – 2002 time period, 1.4 million people (40.3%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.4 million people (60.5). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure OK-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.081 ppm. By 2013 – 2015 this had lowered to a value of 0.067 ppm, a reduction of 17.3 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.5 million people (52.9%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.5 million people (38.4%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>. Figure OK-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 27 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 20 µg/m<sup>3</sup>, a reduction of 25.9 percent

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.8 million people (52.9%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 1.5 million people (38.4%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure OK-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 11.1 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 8.6 µg/m<sup>3</sup>, a reduction of 22.5m percent.

## OKLAHOMA

**Table OK-1**

**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Adair	22,004	0.063	C	N	ND	--	ND	--	--
Caddo	29,343	0.059	B	N	ND	--	ND	--	--
Canadian	133,378	0.068	C	N	ND	--	ND	--	--
Cherokee	48,447	0.062	B	N	ND	--	ND	--	--
Cleveland	274,458	0.067	C	N	ND	--	ND	--	--
Comanche	124,648	0.069	C	N	ND	--	ND	--	--
Creek	70,892	0.065	C	N	ND	--	ND	--	--
Dewey	4,995	0.067	C	N	ND	--	ND	--	--
Kay	45,366	0.068	C	N	ND	--	ND	--	--
McClain	38,066	0.066	C	N	ND	--	ND	--	--
Mayes	40,887	0.063	C	N	ND	--	ND	--	--
Oklahoma	776,864	0.069	C	Y	20	A	8.5	A	N
Ottawa	31,981	0.059	B	N	ND	--	ND	--	--
Pittsburg	44,610	0.064	C	N	20	A	8.9	A	N
Sequoyah	41,153	0.063	C	N	20	A	8.9	A	N
Tulsa	639,242	0.066	C	Y	20	A	8.7	A	N
<b>Subtotal</b>	<b>2,366,334</b>								
Not Monitored	1,545,004								
<b>Total</b>	<b>3,911,338</b>								

**DV – Design Value**

**ND - No Data**

**MM – Multiple Monitors**

**Table OK-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.081	27	11.1
2001 – 2003	0.079	26	10.9
2002 – 2004	0.077	26	10.5
2003 – 2005	0.076	27	10.8
2004 – 2006	0.077	26	10.5
2005 – 2007	0.077	27	11.0
2006 – 2008	0.075	25	10.9
2007 – 2009	0.071	24	10.9
2008 - 2010	0.070	22	10.3
2009 – 2011	0.074	21	10.1
2010 – 2012	0.077	21	10.0
2011 – 2013	0.077	20	9.9
2012 - 2014	0.071	20	9.3
2013 - 2015	0.067	20	8.6

# OKLAHOMA

## Table OK-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	313,143	889,243	1,054,537	930,332	643,820	0	223,528	378,123	0	0	0	29,317	109,771
C	1,405,971	1,415,384	955,181	933,841	1,127,314	1,439,574	1,384,574	1,955,737	1,818,039	1,828,381	390,868	256,628	2,308,105	2,256,563
D	284,585	0	0	0	0	0	761,911	0	0	396,773	1,987,964	2,057,659	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,690,556	1,728,527	1,844,424	1,988,378	2,057,645	2,083,393	2,146,485	2,179,265	2,196,162	2,225,154	2,878,832	2,314,287	2,337,422	2,366,334
NM	1,798,524	1,776,365	1,680,809	1,560,219	1,536,445	1,550,956	1,522,491	1,538,307	1,555,189	1,566,354	1,435,988	1,536,281	1,540,629	1,545,004
Total	3,489,080	3,504,892	3,525,233	3,548,597	3,594,090	3,634,349	3,668,976	3,717,572	3,751,351	3,791,508	3,814,820	3,850,568	3,878,051	3,911,338

### 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	2011-2013	2012-2014	2013-2015
A	1,845,968	1,914,017	1,807,628	1,695,055	1,163,369	1,144,107	1,520,908	1,495,204	1,495,733	1,388,595	1,400,645	1,463,575	1,481,797	1,501,869
B	0	0	0	0	410,490	483,384	28,612	29,459	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,845,968	1,914,017	1,807,628	1,695,055	1,573,858	1,627,490	1,549,520	1,524,663	1,495,733	1,388,595	1,400,645	1,463,575	1,481,797	1,501,869
NM	1,643,112	1,590,875	1,717,605	1,853,542	2,020,232	2,006,859	2,119,456	2,191,909	2,255,618	2,402,913	2,414,175	2,386,993	2,396,254	2,409,469
Total	3,489,080	3,504,892	3,525,233	3,548,597	3,594,090	3,634,349	3,668,976	3,717,572	3,751,351	3,791,508	3,814,820	3,850,568	3,878,051	3,911,338

### 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	2011-2013	2012-2014	2013-2015
A	1,561,383	1,805,321	1,807,628	1,625,249	1,573,858	1,493,038	1,549,520	1,524,663	1,495,733	1,388,595	1,400,645	0	1,395,813	1,501,869
B	284,585	108,696	0	69,806	0	134,452	0	0	0	0	0	1,463,575	85,984	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,845,968	1,914,017	1,807,628	1,695,055	1,573,858	1,627,490	1,549,520	1,524,663	1,495,733	1,388,595	1,400,645	1,463,575	1,481,797	1,501,869
NM	1,643,112	1,590,875	1,717,605	1,853,542	2,020,232	2,006,859	2,119,456	2,192,909	2,255,618	2,402,913	2,414,175	2,386,993	2,396,254	2,409,469
Total	3,489,080	3,504,892	3,525,233	3,548,597	3,594,090	3,634,349	3,668,976	3,717,572	3,751,351	3,791,508	3,814,820	3,850,568	3,878,051	3,911,338

NM – Not Monitored

Figure OK-1

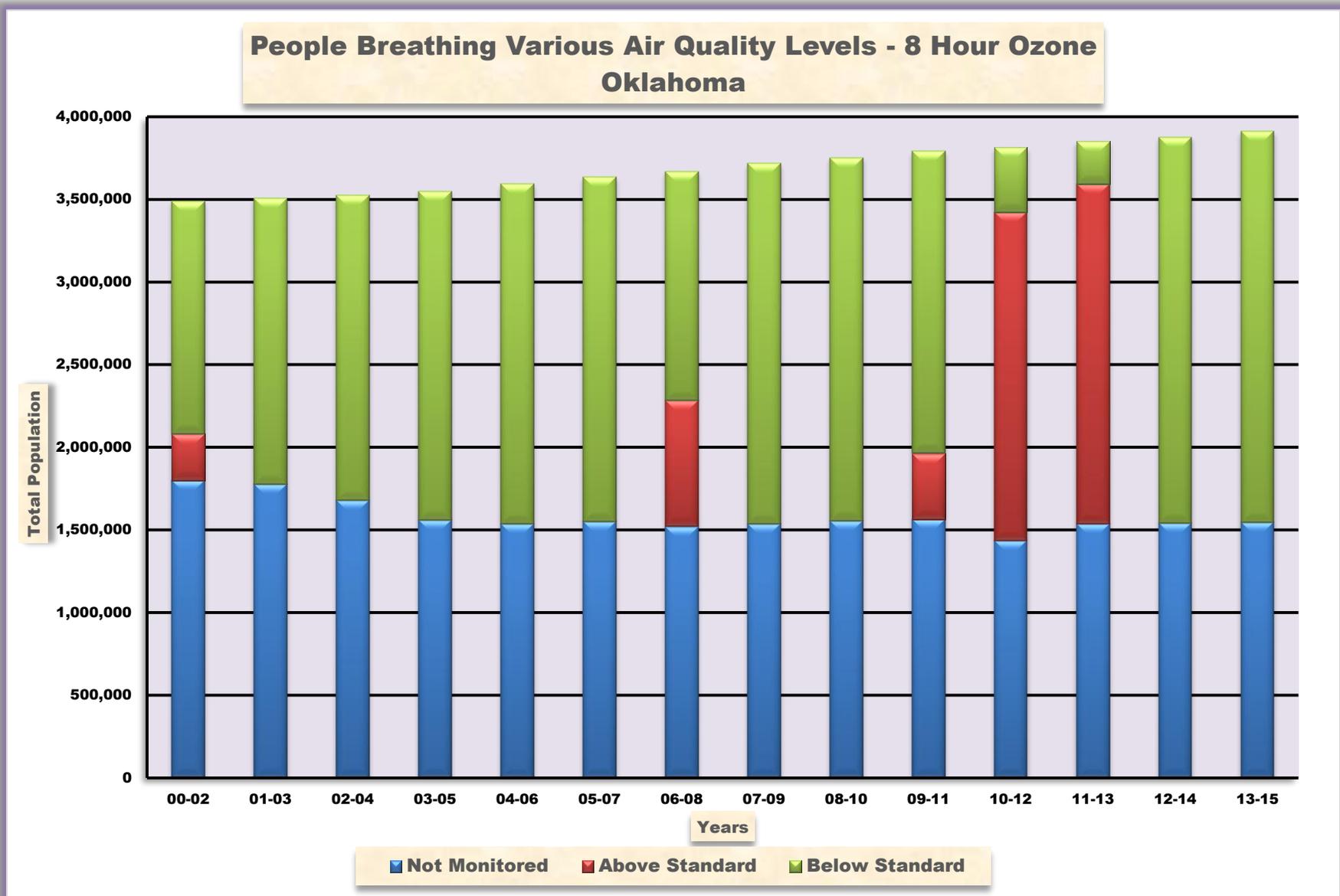


Figure OK-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Oklahoma

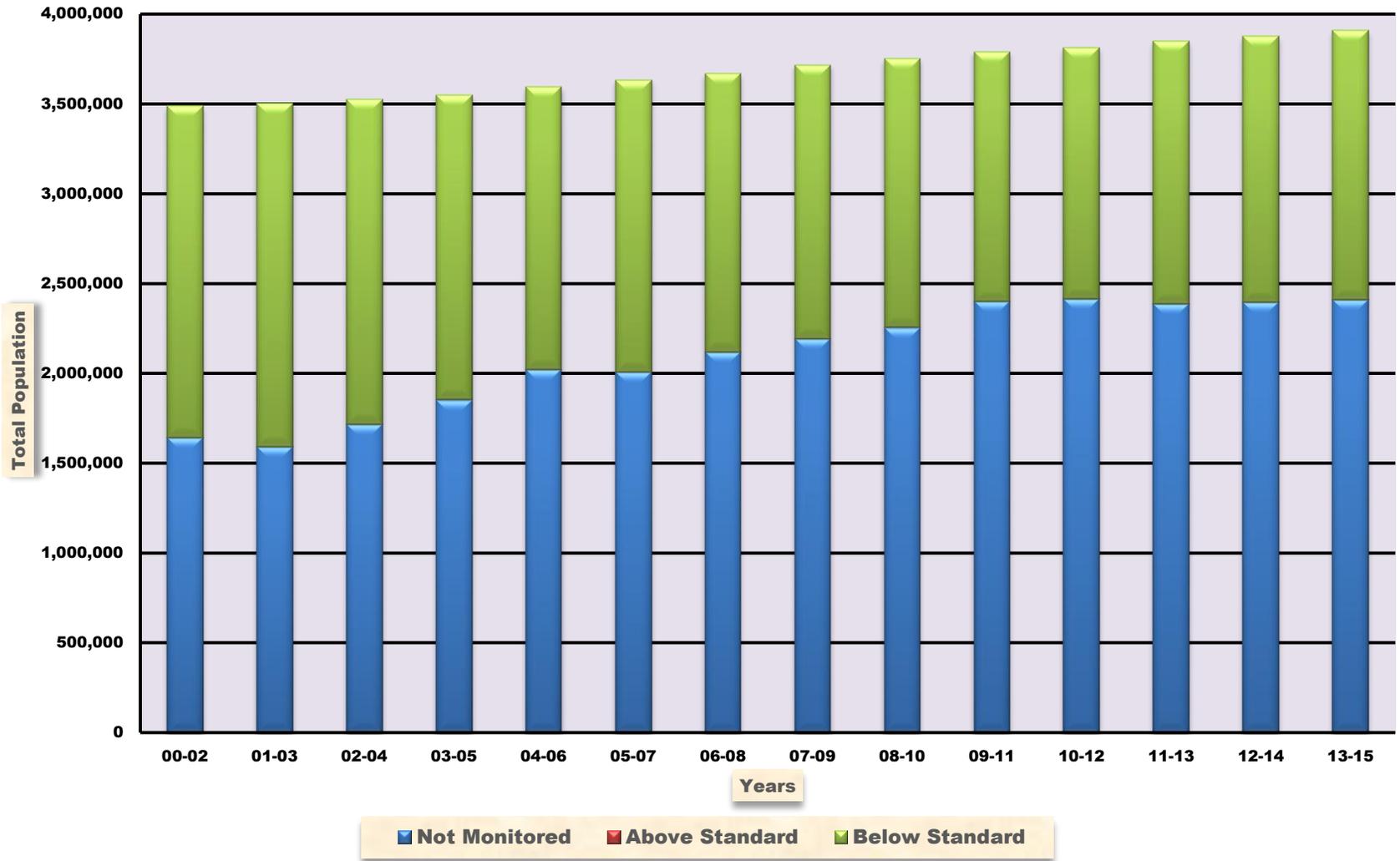
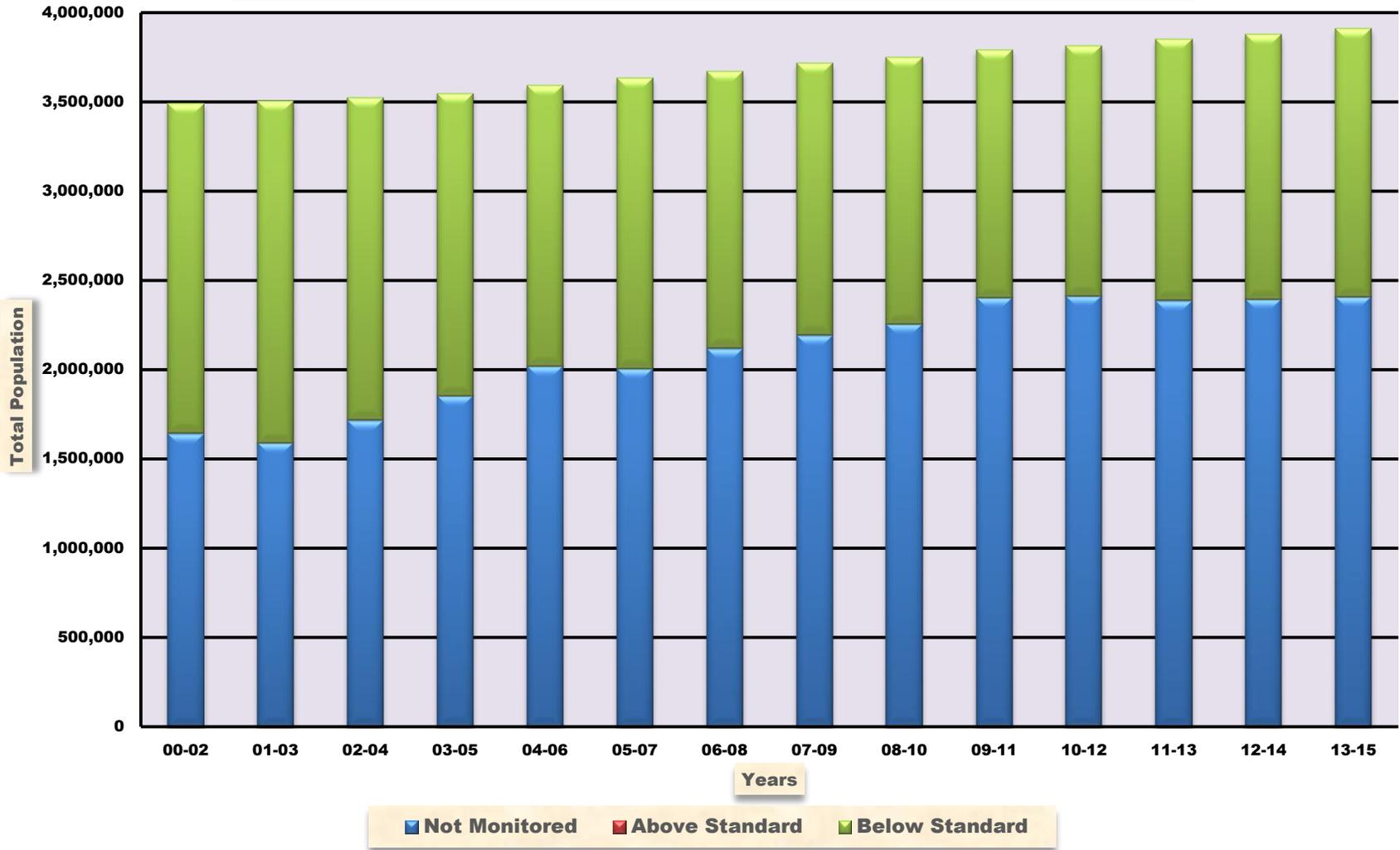


Figure OK-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Oklahoma



## OREGON

### Ozone

In the 2000 – 2002 time period, approximately 1.2 million (34.2%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 3.0 million people (73.8%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure OR-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.062 ppm. By 2013 – 2015 this had lowered to a value of 0.059 ppm, a reduction of 4.8 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.6 million people (73.6%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 1.8 million people (45.0%). The standard was lowered from 65 to 35 µg/m<sup>3</sup>. Figure OR-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29 µg/m<sup>3</sup>. By 2013 – 2015 this had increased to a value of 31 µg/m<sup>3</sup>, an increase of 6.9 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.6 million people (73.6%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had decreased to approximately 2.1 million people (52.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure OR-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.7 µg/m<sup>3</sup>. By 2013 -2015 this had lowered to a value of 8.1 µg/m<sup>3</sup>, a reduction of 6.9 percent.

**Table OR-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Clackamas	401,515	0.063	C	N	ND	--	ND	--	--
Columbia	49,600	0.052	A	N	ND	--	ND	--	--
<b>Crook</b>	<b>21,630</b>	ND	--	--	<b>46</b>	<b>F</b>	9.9	B	N
Deschutes	175,268	0.059	B	N	ND	--	ND	--	--
Harney	7,200	ND	--	--	31	B	9.1	A	N
Jackson	212,567	0.065	C	N	40	F	11.0	C	N
Josephine	84,745	ND	--	--	26	A	8.9	A	N
Klamath	65,016	ND	--	--	34	C	9.7	B	N
<b>Lake</b>	<b>7,829</b>	ND	--	--	<b>56</b>	<b>F</b>	10.6	B	N
Lane	362,895	0.060	B	Y	28	B	7.7	A	Y
Marion	330,700	0.060	B	N	ND	--	ND	--	--
Multnomah	790,294	0.055	A	N	27	A	7.4	A	N
Umatilla	76,531	0.065	C	N	ND	--	ND	--	--
Washington	574,326	0.057	B	N	33	C	8.0	A	N
Subtotal	<b>2,585,790</b>								
Not Monitored	1,443,187								
<b>Total</b>	<b>4,028,977</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table OR-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.062	29	8.7
2001 – 2003	0.066	28	8.5
2002 – 2004	0.066	29	8.7
2003 – 2005	0.065	29	8.8
2004 – 2006	0.063	29	9.2
2005 – 2007	0.062	29	8.4
2006 – 2008	0.063	28	8.2
2007 – 2009	0.062	28	8.2
2008 - 2010	0.062	23	7.4
2009 – 2011	0.060	26	7.8
2010 – 2012	0.059	25	7.5
2011 – 2013	0.058	32	8.4
2012 - 2014	0.058	28	7.9
2013 - 2015	0.059	31	8.1

# OREGON

**Table OR-3  
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	2011-2013	2012-2014	2013-2015
A	1,014,094	858,408	687,374	693,986	1,398,749	1,964,465	49,209	1,127,965	1,136,400	1,674,889	2,015,747	2,216,255	1,917,894	839,894
B	186,704	355,261	536,228	542,271	536,784	0	1,741,997	964,974	970,422	1,157,334	844,360	673,528	1,007,474	1,443,189
C	0	0	0	0	0	0	201,162	0	0	0	0	0	0	690,613
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>1,200,798</b>	<b>1,213,668</b>	<b>1,223,601</b>	<b>1,236,256</b>	<b>1,935,533</b>	<b>1,964,465</b>	<b>1,992,368</b>	<b>2,092,939</b>	<b>2,106,822</b>	<b>2,832,223</b>	<b>2,860,107</b>	<b>2,889,783</b>	<b>2,925,368</b>	<b>2,973,696</b>
<b>NM</b>	<b>2,312,626</b>	<b>2,333,708</b>	<b>2,345,862</b>	<b>2,376,946</b>	<b>1,735,350</b>	<b>1,757,952</b>	<b>1,776,380</b>	<b>1,715,661</b>	<b>1,724,252</b>	<b>1,039,636</b>	<b>1,039,246</b>	<b>1,040,282</b>	<b>1,044,871</b>	<b>1,055,281</b>
<b>Total</b>	<b>3,513,424</b>	<b>3,547,376</b>	<b>3,569,463</b>	<b>3,613,202</b>	<b>3,670,883</b>	<b>3,722,417</b>	<b>3,768,749</b>	<b>3,808,600</b>	<b>3,831,074</b>	<b>3,871,859</b>	<b>3,899,353</b>	<b>3,930,065</b>	<b>3,970,239</b>	<b>4,028,977</b>

**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	2011-2013	2012-2014	2013-2015
A	2,502,306	2,447,349	1,918,894	1,267,135	534,798	588,687	598,607	1,046,601	2,091,705	1,312,311	1,909,451	249,079	1,003,646	1,021,197
B	81,877	82,711	0	111,944	407,503	348,900	457,076	708,165	0	644,236	7,212	178,106	641,791	7,200
C	0	0	0	0	36,921	214,524	116,059	124,382	0	0	73,683	1,536,822	347,409	785,500
D	0	0	0	0	0	0	66,732	0	78,238	74,207	118,181	86,725	0	72,579
F	0	0	0	0	105,215	181,715	116,059	191,311	66,380	70,683	0	96,873	100,503	242,026
<b>Subtotal</b>	<b>2,584,182</b>	<b>2,530,060</b>	<b>1,918,894</b>	<b>1,379,079</b>	<b>1,084,437</b>	<b>1,333,825</b>	<b>1,354,532</b>	<b>2,070,458</b>	<b>2,236,323</b>	<b>2,101,437</b>	<b>2,108,527</b>	<b>2,147,605</b>	<b>2,093,350</b>	<b>2,128,502</b>
<b>NM</b>	<b>929,242</b>	<b>1,017,316</b>	<b>1,650,569</b>	<b>2,234,123</b>	<b>2,586,446</b>	<b>2,388,593</b>	<b>2,414,216</b>	<b>1,738,142</b>	<b>1,594,751</b>	<b>1,770,422</b>	<b>1,790,826</b>	<b>1,782,460</b>	<b>1,876,889</b>	<b>1,900,475</b>
<b>Total</b>	<b>3,513,424</b>	<b>3,547,376</b>	<b>3,569,463</b>	<b>3,613,202</b>	<b>3,670,883</b>	<b>3,722,417</b>	<b>3,768,749</b>	<b>3,808,600</b>	<b>3,831,074</b>	<b>3,871,859</b>	<b>3,899,353</b>	<b>3,930,065</b>	<b>3,970,239</b>	<b>4,028,977</b>

**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	2011-2013	2012-2014	2013-2015
A	2,502,306	2,397,722	1,808,118	1,267,135	1,047,516	1,333,825	1,354,532	2,070,458	2,236,323	2,101,437	2,108,527	1,844,515	1,788,772	1,747,881
B	0	66,169	110,776	111,944	36,921	0	0	0	0	0	0	229,360	304,578	168,054
C	81,877	66,169	0	0	0	0	0	0	0	0	0	73,730	0	212,567
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>2,584,182</b>	<b>2,530,060</b>	<b>1,918,894</b>	<b>1,379,079</b>	<b>1,084,437</b>	<b>1,333,825</b>	<b>1,354,532</b>	<b>2,070,458</b>	<b>2,236,323</b>	<b>2,101,437</b>	<b>2,108,527</b>	<b>2,147,605</b>	<b>2,093,350</b>	<b>2,178,502</b>
<b>NM</b>	<b>929,242</b>	<b>1,017,316</b>	<b>1,650,569</b>	<b>2,234,123</b>	<b>2,586,446</b>	<b>2,388,592</b>	<b>2,414,216</b>	<b>1,738,142</b>	<b>1,594,751</b>	<b>1,770,422</b>	<b>1,790,826</b>	<b>1,782,460</b>	<b>1,876,889</b>	<b>1,900,475</b>
<b>Total</b>	<b>3,513,424</b>	<b>3,547,376</b>	<b>3,569,463</b>	<b>3,613,202</b>	<b>3,670,883</b>	<b>3,722,417</b>	<b>3,759,749</b>	<b>3,808,600</b>	<b>3,831,074</b>	<b>3,871,859</b>	<b>3,899,353</b>	<b>3,930,065</b>	<b>3,970,239</b>	<b>4,028,977</b>

**NM – Not Monitored**

Figure OR-1

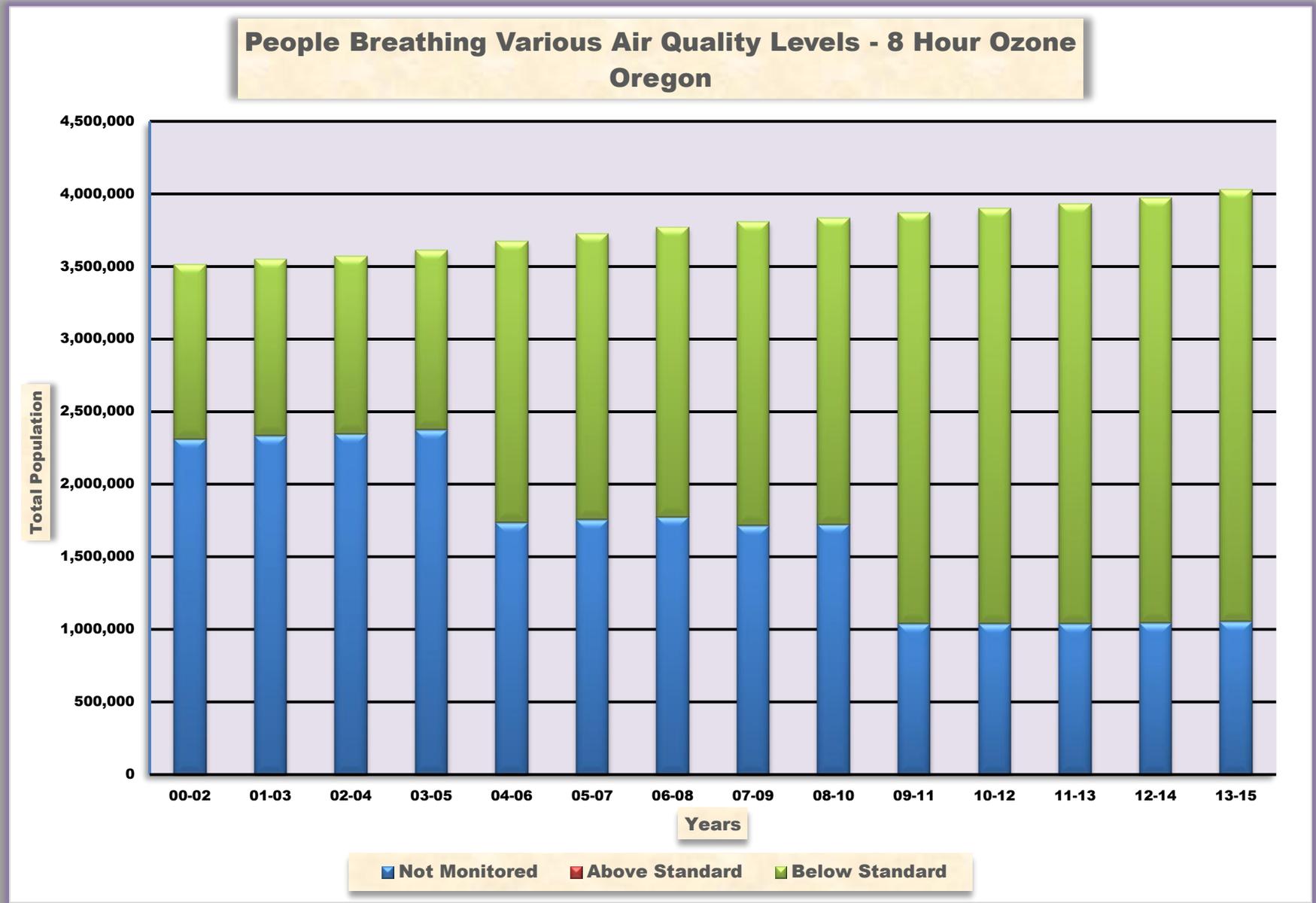


Figure OR-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Oregon

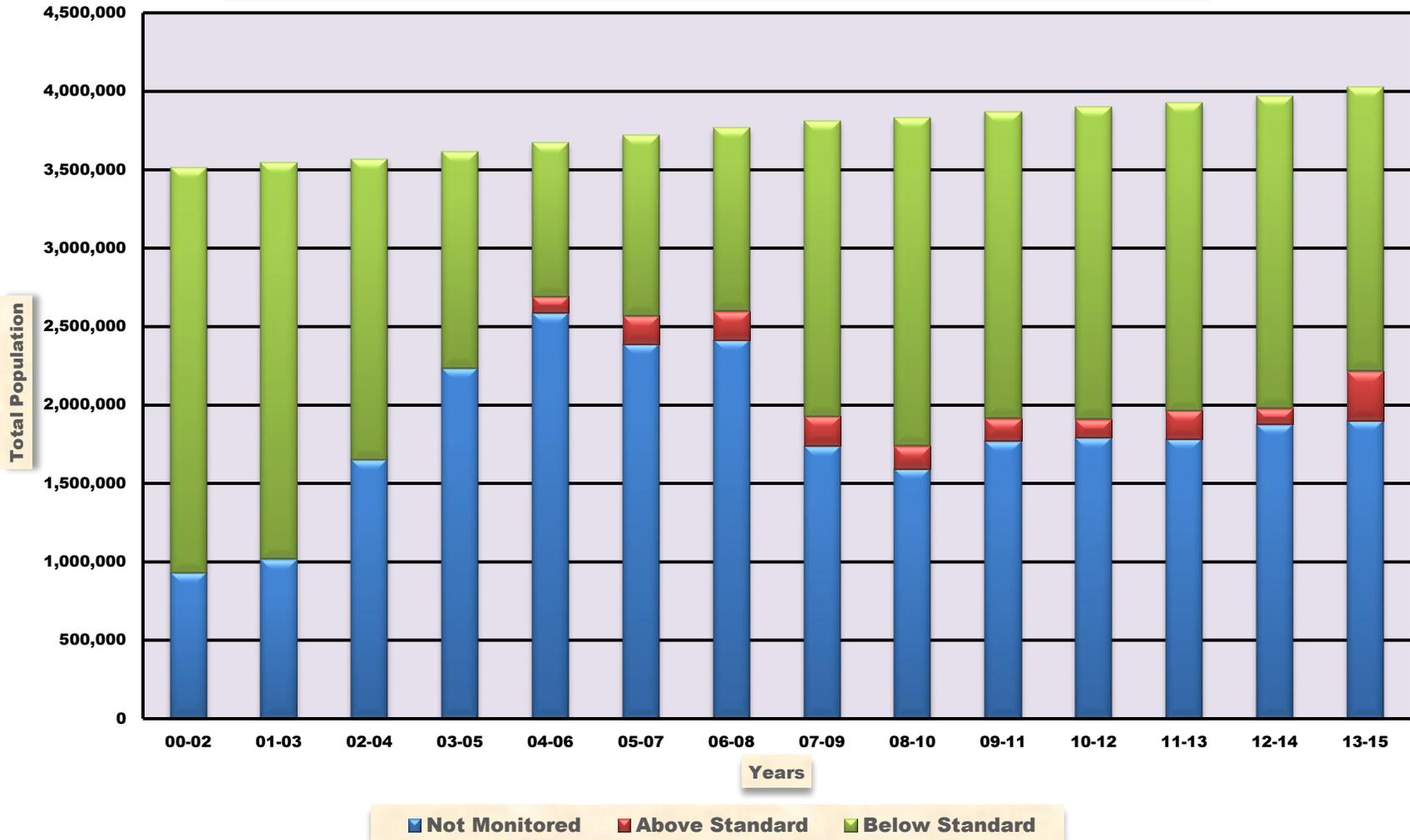
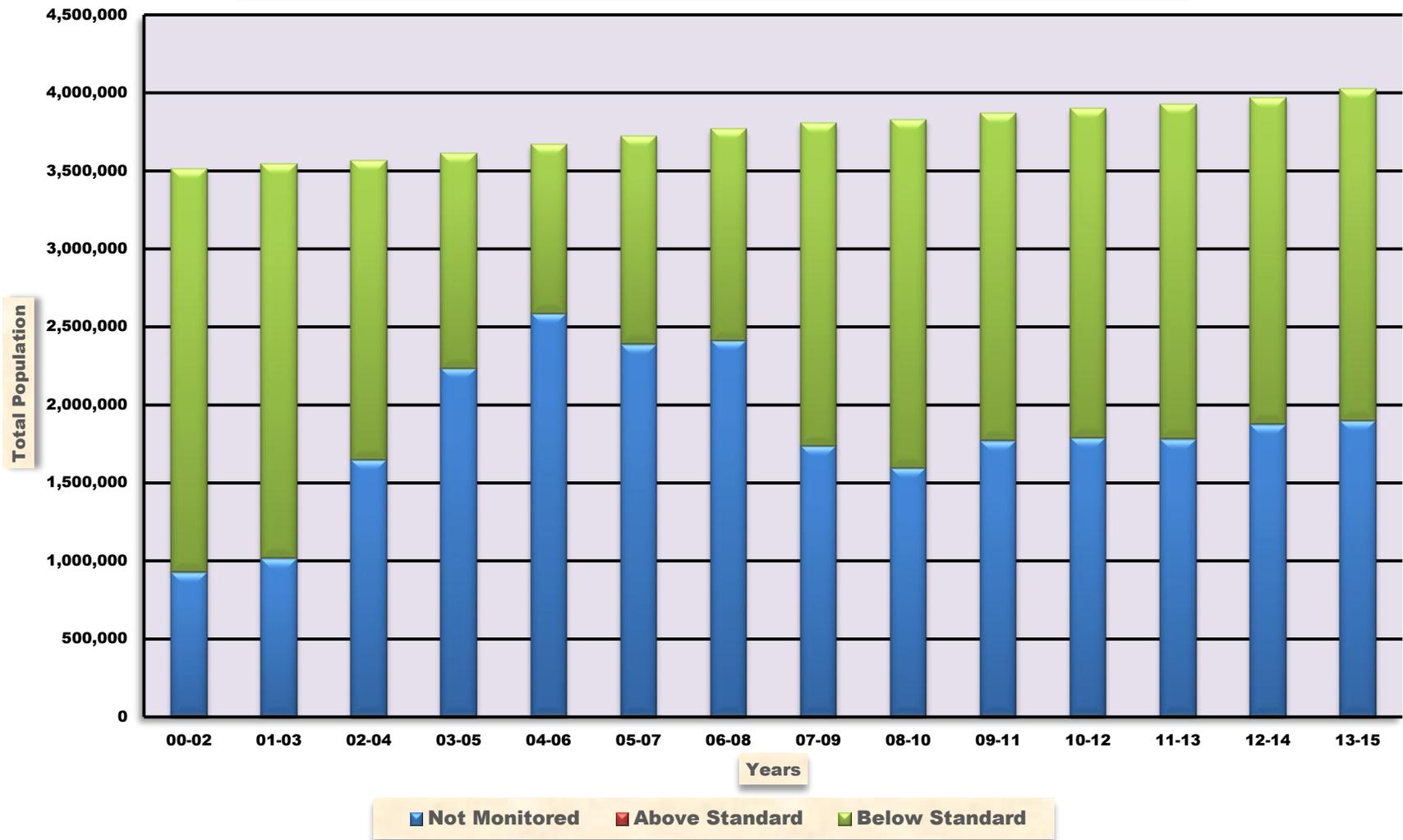


Figure OR-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Oregon



# PENNSYLVANIA

## Ozone

In the 2000 – 2002 time period, approximately 1.7 million people (12.4%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 8.7 million people (68.1%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure PA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.091 ppm. By 2013 – 2015 this had lowered to a value of 0.067 ppm, a reduction of 26.4 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 8.9 million people (72.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013- 2015 this was approximately 7.7 million people (60.3%). The standard was lowered from 65  $\mu\text{g}/\text{m}^3$  to 35  $\mu\text{g}/\text{m}^3$ . Figure PA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 39  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 27  $\mu\text{g}/\text{m}^3$ , a reduction of 30.8 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 4.4 million people (35.8%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 7.6 million people (59.1%). The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure PA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.1  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 10.5  $\mu\text{g}/\text{m}^3$ , a reduction of 30.5 percent.

# PENNSYLVANIA

**Table PA-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Adams	102,295	0.065	C	N	23	A	9.6	B	N
Allegheny	1,230,459	0.067	C	Y	23	A	10.1	B	Y
<b>Armstrong</b>	<b>67,052</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	22	A	11.1	C	N
Beaver	168,871	0.068	C	Y	24	A	10.9	C	N
Berks	415,271	0.066	C	Y	30	B	10.3	B	N
Blair	125,593	0.064	C	N	28	B	11.4	C	N
Bradford	61,281	0.054	A	N	ND	--	ND	--	--
<b>Bucks</b>	<b>627,367</b>	<b>0.075</b>	<b>D</b>	<b>N</b>	33	C	11.5	C	N
Cambria	136,411	0.063	C	N	28	B	11.7	C	N
Centre	160,580	0.064	C	Y	22	A	9.2	A	N
Chester	515,939	0.069	C	N	28	B	10.9	C	N
Clearfield	80,994	0.065	C	N	ND	--	ND	--	--
Cumberland	246,338	ND	--	--	33	C	12.0	C	N
Dauphin	272,983	0.065	C	Y	ND	--	ND	--	--
<b>Delaware</b>	<b>563,894</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	29	B	11.6	C	N
Elk	30,872	0.065	C	N	ND	--	ND	--	--
Erie	278,045	0.066	C	N	24	A	10.8	C	N
Franklin	153,638	0.064	C	N	ND	--	ND	--	--
Greene	37,519	0.067	C	N	ND	--	ND	--	--
<b>Indiana</b>	<b>86,966</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Lackawanna	211,917	0.065	C	N	ND	--	ND	--	--
Lancaster	536,624	0.066	C	Y	32	C	11.1	C	Y
Lawrence	88,082	0.068	C	N	ND	--	ND	--	--
<b>Lebanon</b>	<b>137,067</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	34	C	11.7	C	N
Lehigh	360,685	0.068	C	N	ND	--	ND	--	--
Luzerne	318,449	0.063	C	N	ND	--	ND	--	--
Lycoming	116,048	0.064	C	N	ND	--	ND	--	--
Mercer	114,234	0.065	C	Y	22	A	9.4	A	N
Monroe	166,397	0.063	C	N	20	A	8.6	A	N
<b>Montgomery</b>	<b>819,264</b>	<b>0.071</b>	<b>D</b>	<b>N</b>	26	A	9.3	A	N
Northampton	300,813	0.065	C	N	30	B	10.5	B	Y
Philadelphia	1,567,442	0.063	C	N	ND	--	ND	--	--
Somerset	75,522	0.060	B	N	ND	--	ND	--	--
Tioga	41,877	0.063	C	N	ND	--	ND	--	--
Washington	208,261	0.067	C	Y	21	A	10.0	B	Y
Westmoreland	357,956	0.067	C	N	23	A	10.3	B	N
York	442,867	0.066	C	N	26	A	10.4	B	N
<b>Subtotal</b>	<b>11,225,879</b>								
Not Monitored	1,576,630								
<b>Total</b>	<b>12,802,503</b>								

**DV – Design Value**

**ND - No Data**

**MM – Multiple Monitors**

**Table PA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.091	39	15.1
2001 – 2003	0.090	41	15.0
2002 – 2004	0.085	38	14.5
2003 – 2005	0.081	38	14.7
2004 – 2006	0.080	36	14.2
2005 – 2007	0.081	37	14.2
2006 – 2008	0.079	35	13.4
2007 – 2009	0.075	32	12.7
2008 - 2010	0.074	30	11.9
2009 – 2011	0.073	29	11.5
2010 – 2012	0.077	28	11.3
2011 – 2013	0.073	28	11.0
2012 - 2014	0.069	26	10.6
2013 - 2015	0.067	27	10.5

# PENNSYLVANIA

**Table PA-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	2011-2013	2012-2014	2013-2015
A	0	0	0	496,954	496,237	159,116	0	0	0	0	0	517,722	780,149	845,002
B	374,623	373,451	373,221	758,446	1,608,896	1,346,087	909,471	634,103	1,438,815	1,001,751	321,027	718,363	1,920,686	75,522
C	1,277,799	1,459,038	2,991,360	6,515,82=85	6,077,825	6,316,822	1,925,306	3,589,781	4,987,181	6,055,880	3,783,469	6,061,260	7,833,887	7,792,944
D	4,548,592	6,517,648	6,293,928	2,363,163	1,594,918	2,085,454	4,257,510	4,125,363	4,182,568	2,820,761	5,066,439	3,600,305	410,418	2,266,067
F	3,228,276	1,558,167	373,221	0	0	0	3,023,926	1,815,017	0	768,236	1,400,857	0	0	0
Subtotal	9,429,290	9,908,302	10,031,729	10,134,447	9,777,875	9,907,479	10,116,213	10,164,263	10,608,563	10,646,627	10,571,791	10,897,649	10,945,140	10,979,535
NM	2,901,742	2,466,356	2,378,993	2,315,543	2,732,934	2,656,458	2,496,072	2,502,595	2,093,816	2,096,259	2,191,745	1,876,152	1,842,069	1,822,968
Total	12,331,031	12,374,658	12,410,722	12,449,990	12,510,809	12,563,937	12,612,885	12,666,858	12,702,379	12,742,886	12,763,536	12,773,801	12,787,209	12,802,503

**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	2011-2013	2012-2014	2013-2015
A	8,763,264	9,019,780	9,391,344	9,545,678	0	0	0	195,494	1,683,505	1,837,180	4,143,283	3,571,940	4,753,465	4,062,745
B	0	0	113,412	0	212,595	1,931,885	1,281,980	3,999,654	3,869,807	5,638,214	4,002,863	2,284,909	1,792,832	1,857,379
C	126,558	114,402	113,412	0	3,139,158	3,062,174	4,256,358	3,851,315	1,226,842	1,579,549	175,620	1,401,377	1,160,713	1,801,474
D	0	0	0	102,899	4,064,665	2,047,61	2,720,810	203,695	0	0	0	153,941	0	0
F	0	0	0	0	1,586,540	1,588,134	407,024	203,695	203,891	204,511	175,620	0	0	0
Subtotal	8,889,822	9,134,182	9,618,168	9,648,577	9,002,958	8,629,854	8,666,172	8,453,854	6,984,045	8,894,983	8,497,386	7,412,167	7,707,010	7,721,598
NM	3,441,209	3,240,476	2,792,554	2,801,413	3,507,851	3,934,083	3,946,113	4,213,004	5,718,334	3,847,903	4,266,150	5,351,369	5,080,199	5,080,905
Total	12,331,031	12,374,658	12,410,722	12,449,990	12,510,809	12,563,937	12,612,885	12,666,858	12,702,379	12,742,886	12,763,536	12,773,801	12,787,209	12,802,503

**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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	212,595	213,513	948,943	2,570,879	3,459,763	6,438,880	6,239,822	1,004,533	1,105,859	1,672,220
B	806,142	1,204,609	2,461,088	1,052,515	3,172,733	3,093,786	3,319,147	3,628,175	3,320,391	1,449,219	2,445,340	1,989,414	3,250,059	2,186,226
C	3,612,989	3,924,141	4,061,460	3,310,226	2,999,188	3,180,052	3,991,058	2,051,105	0	1,371,355	175,620	3,395,759	2,779,347	3,709,345
D	2,616,529	2,782,014	2,090,828	4,176,250	2,465,188	1,989,694	203,512	0	203,891	0	0	868,520	571,746	153,807
F	1,803,962	1,223,417	1,004,792	1,109,586	153,253	152,810	203,512	203,695	0	0	0	153,941	0	0
Subtotal	8,889,822	9,134,182	9,618,168	9,648,577	9,002,958	8,629,854	8,666,172	8,453,854	6,984,045	9,259,454	8,860,781	7,412,167	7,707,010	7,721,598
NM	3,441,209	3,240,476	2,792,554	2,801,413	3,507,851	3,934,083	3,946,113	4,213,004	5,718,334	3,483,432	3,902,755	5,351,369	5,080,199	5,080,905
Total	12,331,031	12,374,658	12,410,722	12,449,990	12,510,809	12,563,937	12,612,885	12,666,858	12,702,379	12,742,886	12,763,536	12,773,801	12,787,209	12,802,503

NM – Not Monitored

Figure PA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Pennsylvania

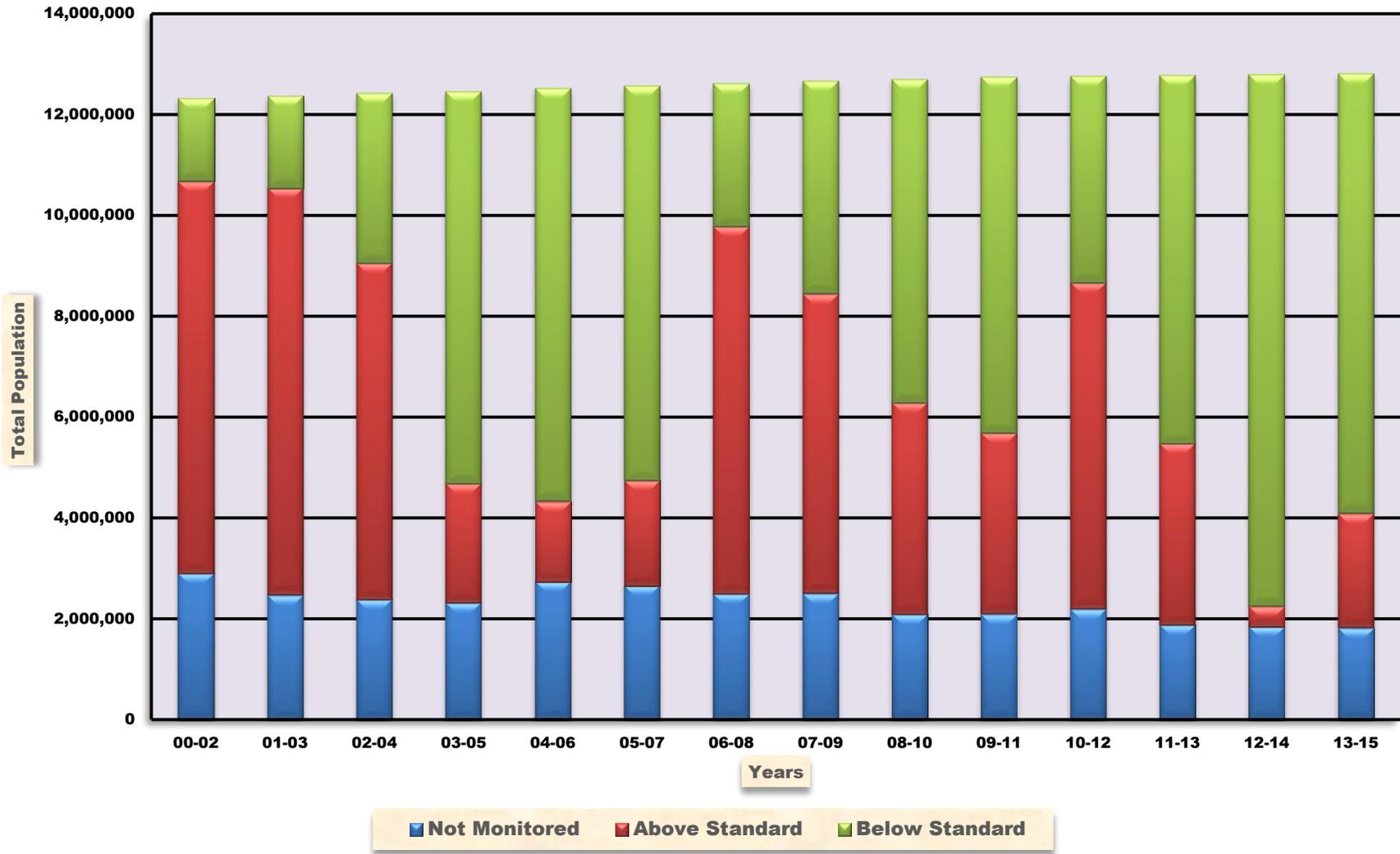


Figure PA-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Pennsylvania

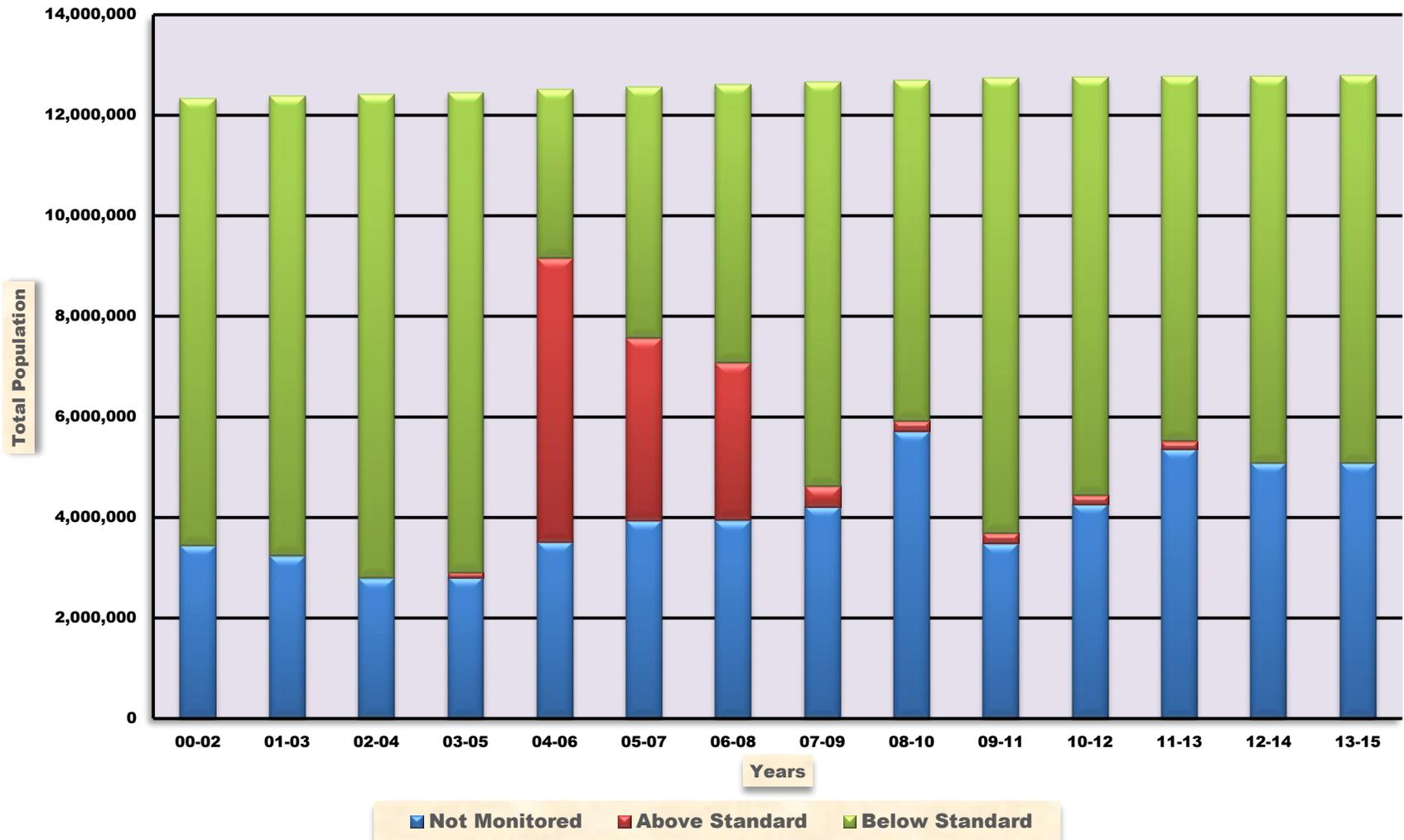
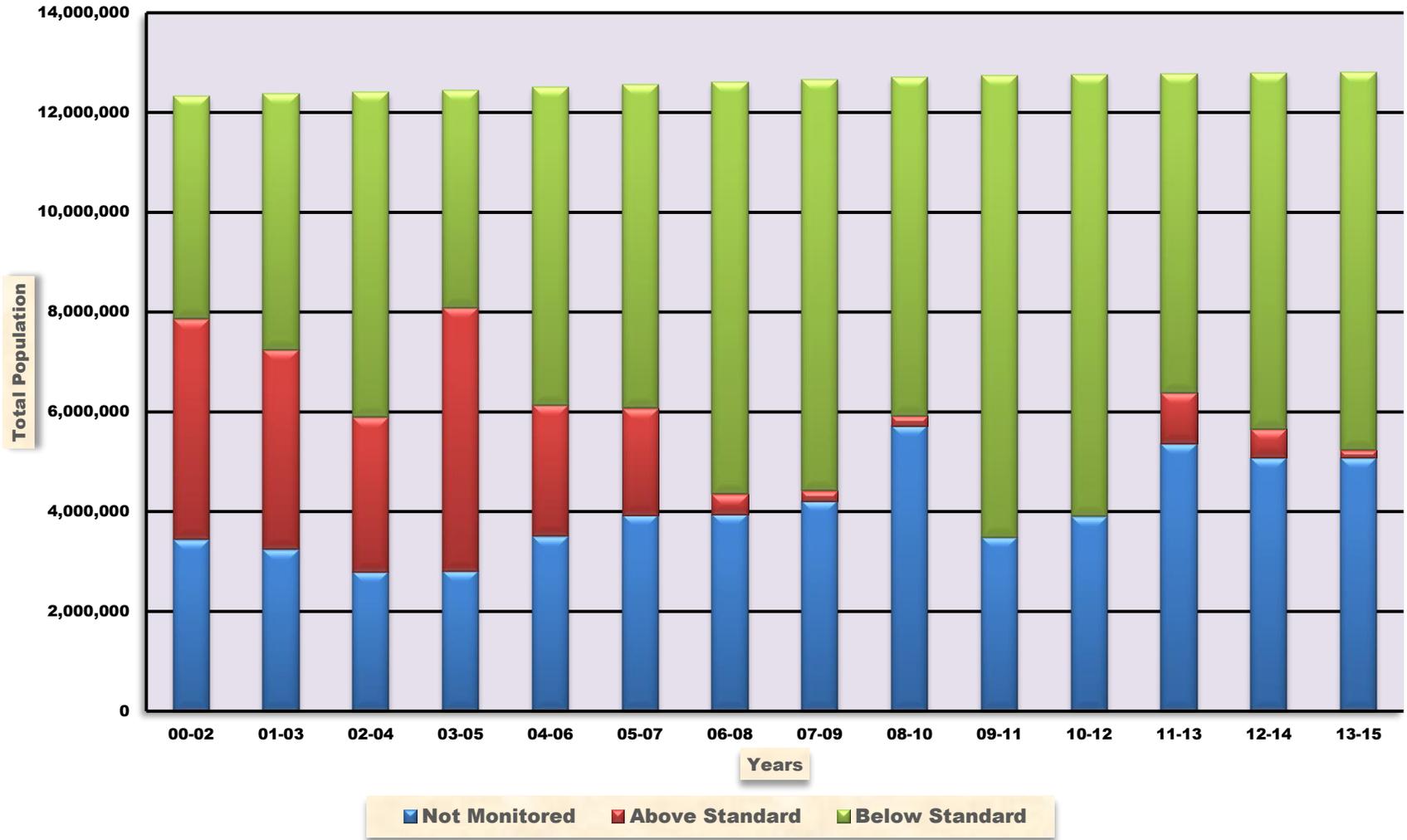


Figure PA-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Pennsylvania



# RHODE ISLAND

## Ozone

In the 2000 – 2002 time period, no people lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.8 million people (75.6%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure RI-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.092 ppm. By 2013 – 2015 this had lowered to a value of 0.070 ppm, a reduction of 23.9 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.9 million people (87.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.9 million people (87.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m3. Figure RI-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 28 µg/m3. By 2013 – 2015 this had lowered to a value of 18 µg/m3, a reduction of 35.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.9 million people (87.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 0.9 million people (87.6%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure RI-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 10.2 µg/m3. By 2013 – 2015 this had lowered to a value of 6.7 µg/m3, a reduction of 34.3 percent.

**Table RI-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg.24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Kent	164,801	0.070	C	N	13	A	4.9	A	N
Providence	633,473	0.070	C	N	19	A	7.5	A	Y
Washington	126,517	0.073	D	N	16	A	5.1	A	N
<b>Subtotal</b>	<b>924,791</b>								
Not Monitored	131,507								
<b>Total</b>	<b>1,056,298</b>								

DV – Design Value

ND - No Data

MM- Multiple Monitors

**Table RI-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.092	28	10.2
2001 – 2003	0.094	32	11.1
2002 – 2004	0.085	31	10.7
2003 – 2005	0.083	31	10.7
2004 – 2006	0.082	29	10.3
2005 – 2007	0.084	29	10.1
2006 – 2008	0.081	27	9.5
2007 – 2009	0.077	25	9.4
2008 - 2010	0.072	23	8.7
2009 – 2011	0.072	22	8.0
2010 – 2012	0.075	22	8.1
2011 – 2013	0.076	21	8.0
2012 - 2014	0.073	17	6.5
2013 - 2015	0.070	18	6.7

# RHODE ISLAND

**Table RI-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	165,128	0
C	0	0	638,358	804,875	926,970	756,005	0	0	792,825	918,807	793,166	165,035	758,627	798,274
D	758,714	636,149	298,499	127,412	0	167,515	921,830	920,675	126,979	0	125,946	754,859	0	126,517
F	169,478	297,889	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	928,192	934,038	936,857	932,287	926,970	923,520	921,830	920,675	919,804	918,807	919,112	919,894	923,755	924,791
NM	137,803	137,304	137,722	135,629	136,126	133,795	133,173	132,971	132,763	132,495	131,180	131,617	131,418	131,507
Total	1,065,995	1,071,342	1,074,579	1,067,916	1,063,096	1,057,315	1,055,003	1,053,646	1,052,567	1,051,302	1,050,292	1,051,511	1,055,173	1,056,298

**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	2011-2013	2012-2014	2013-2015
A	928,192	806,790	808,897	804,875	800,213	796,625	638,186	626,304	626,667	795,244	793,166	793,685	923,755	924,791
B	0	0	0	0	0	0	156,972	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	928,192	806,790	808,897	804,875	800,213	796,625	795,158	626,304	626,667	792,244	793,166	793,635	923,755	924,791
NM	137,803	264,552	265,682	263,041	262,883	260,690	259,845	427,342	425,900	259,058	257,126	257,876	131,418	131,507
Total	1,065,995	1,071,342	1,074,579	1,067,916	1,063,096	1,057,315	1,055,003	1,053,646	1,052,567	1,051,302	1,050,292	1,051,511	1,055,173	1,056,298

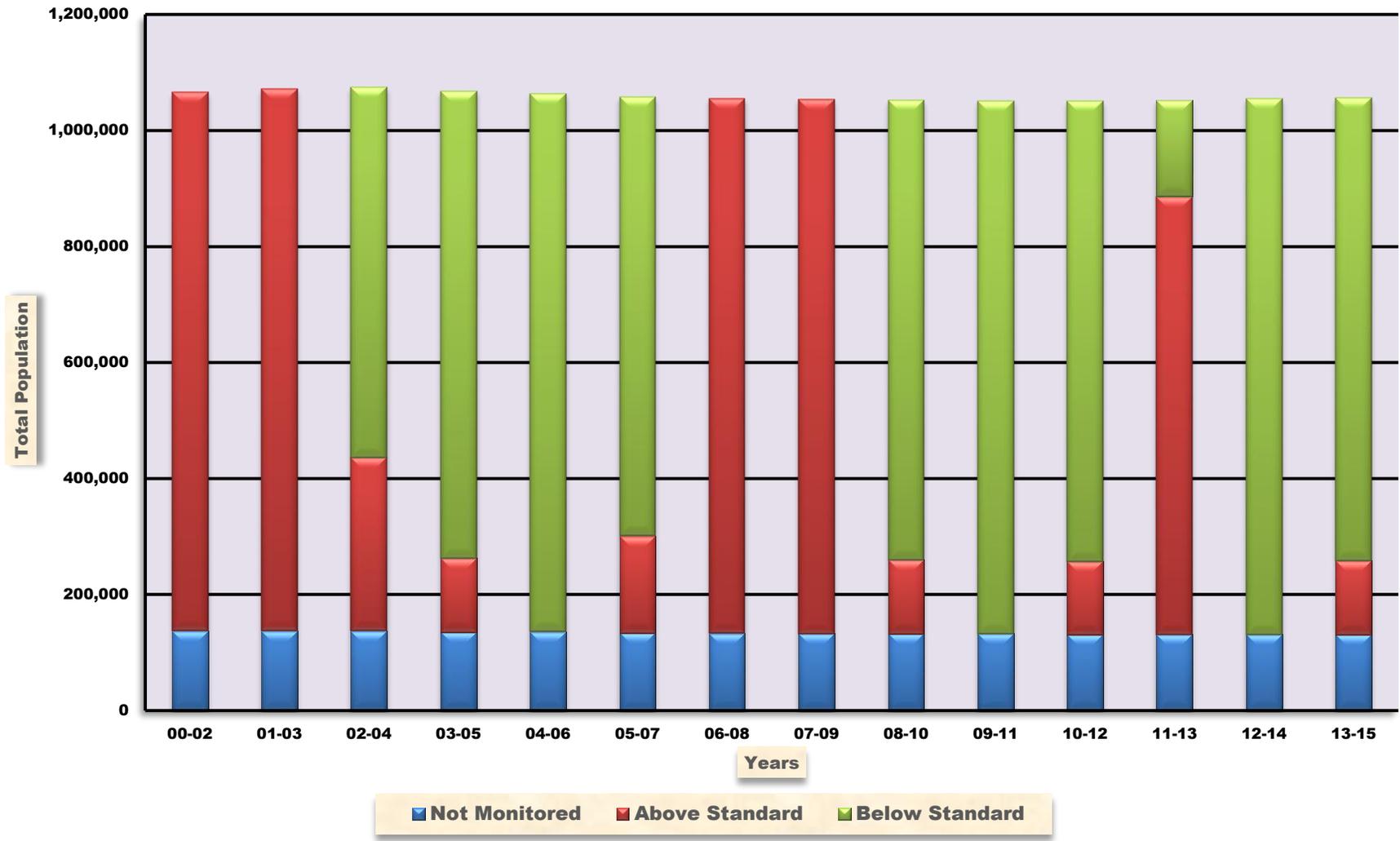
**People Breathing Year Round Particle Pollution (Annual PM-2.5)**

Grade	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015
A	928,192	594,740	596,111	593,188	642,290	639,348	795,158	626,304	626,667	792,244	793,166	584,102	923,755	924,791
B	0	212,050	212,786	211,687	157,923	157,278	0	0	0	0	0	209,533	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	928,192	806,790	808,897	804,875	800,213	796,625	795,158	626,304	626,667	792,244	793,166	793,635	923,755	924,791
NM	137,803	264,552	265,682	263,041	262,883	260,690	259,845	427,342	425,900	259,058	257,126	257,876	131,418	131,507
Total	1,065,995	1,074,342	1,074,579	1,067,916	1,063,096	1,057,315	1,055,003	1,053,646	1,052,567	1,051,302	1,050,292	1,051,511	1,055,173	1,056,298

**NM – Not Monitored**

Figure RI-1

**People Breathing Various Air Quality Levels - 8 Hour Ozone  
Rhode Island**



**Figure RI-2**

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Rhode Island**

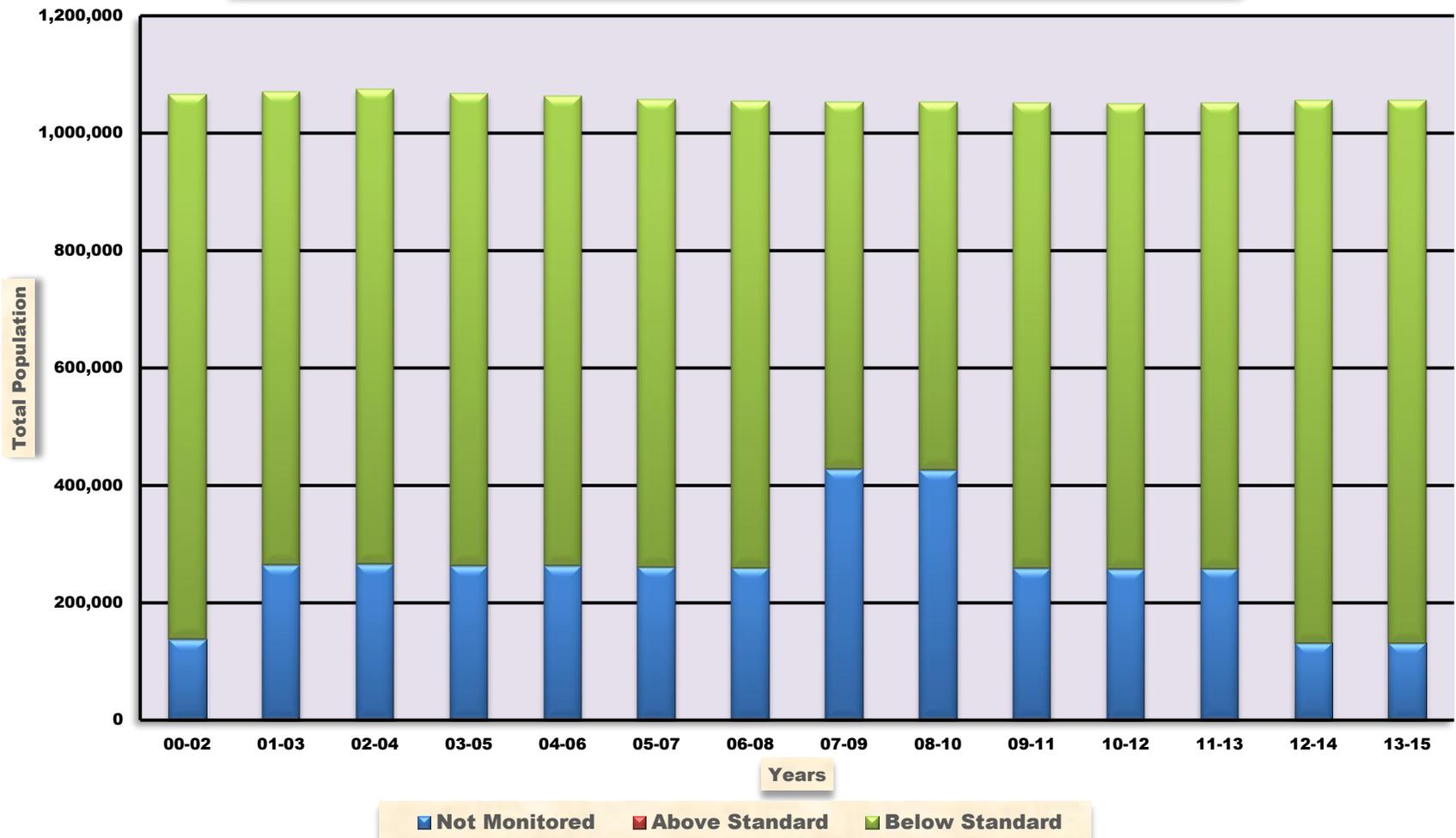
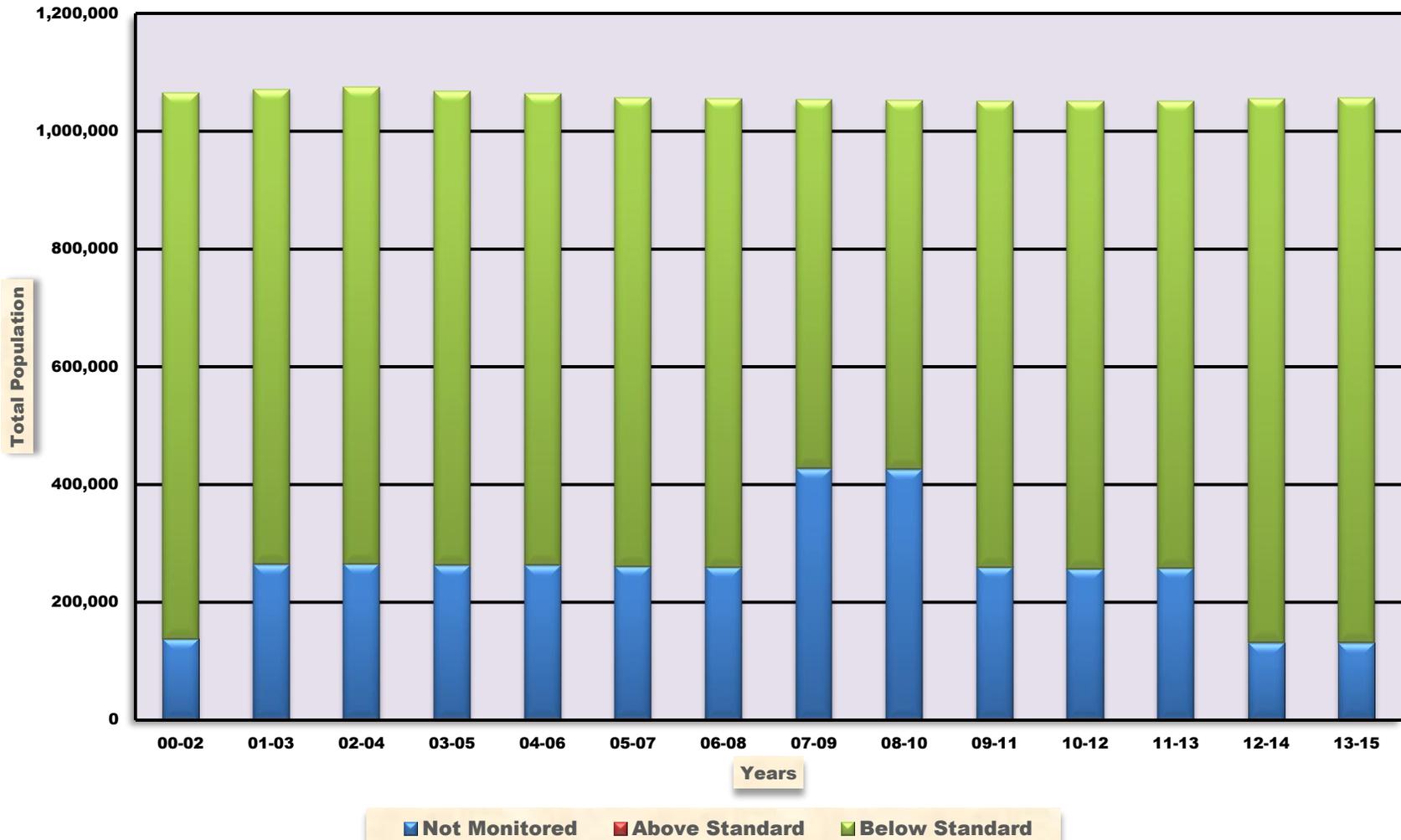


Figure RI-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Rhode Island



## **SOUTH CAROLINA**

### **Ozone**

In the 2000 – 2002 time period, 1.3 million people (30.9%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 2.9 million people (58.3%). The remainder of the population lived in counties where ozone was not monitored. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure SC-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.082 ppm. By 2013 – 2015 this had lowered to a value of 0.060 ppm, a reduction of 26.8 percent.

### **24-Hour PM-2.5**

In the 2000 – 2002 time period, approximately 2.0 million people (49.6%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 2.1 million people (42.5%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure SC-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29  $\mu\text{g}/\text{m}^3$ . By 2013 -2015 this had lowered to a value of 18  $\mu\text{g}/\text{m}^3$ , a reduction of 37.9 percent.

### **Annual PM-2.5**

In the 2000 – 2002 time period, approximately 2.0 million people (49.6%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 2.1 million people (42.5%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure SC-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 13.6  $\mu\text{g}/\text{m}^3$ . By 2013 -2015 this had lowered to a value of 8.6  $\mu\text{g}/\text{m}^3$ , a reduction of 36.8 percent.

**Table SC-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Abbeville	24,932	0.057	B	N	ND	--	ND	--	--
Aiken	165,829	0.061	B	N	ND	--	ND	--	--
Anderson	194,692	0.060	B	N	ND	--	ND	--	--
Berkeley	202,786	0.057	B	N	ND	--	ND	--	--
Charleston	389,262	0.057	B	N	16	A	7.6	A	Y
Cherokee	56,194	0.063	C	N	ND	--	ND	--	--
Chesterfield	46,017	0.058	B	N	16	A	7.9	A	N
Colleton	37,731	0.054	A	N	ND	--	ND	--	--
Darlington	67,548	0.061	B	N	ND	--	ND	--	--
Edgefield	26,514	0.054	A	N	17	A	8.5	A	N
Florence	138,900	ND	--	--	17	A	8.8	A	N
Greenville	491,863	0.063	C	Y	19	A	8.7	A	Y
Lexington	281,833	ND	--	--	19	A	9.2	B	N
Oconee	75,713	0.059	B	N	ND	--	ND	--	--
Pickens	121,691	0.061	B	Y	ND	--	ND	--	--
Richland	407,051	0.059	A	Y	18	A	8.9	A	Y
Spartanburg	297,302	0.065	C	N	19	A	8.8	A	N
York	251,195	0.059	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>3,277,053</b>								
Not Monitored	1,619,093								
<b>Total</b>	<b>4,896,146</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table SC-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.082	29	13.6
2001 – 2003	0.080	27	12.6
2002 – 2004	0.079	27	12.5
2003 – 2005	0.076	30	13.0
2004 – 2006	0.076	31	13.5
2005 – 2007	0.076	30	13.2
2006 – 2008	0.075	27	12.7
2007 – 2009	0.071	24	11.4
2008 - 2010	0.068	22	10.5
2009 – 2011	0.067	23	10.7
2010 – 2012	0.068	22	10.3
2011 – 2013	0.064	21	9.5
2012 - 2014	0.061	18	9.0
2013 - 2015	0.060	18	8.6

# SOUTH CAROLINA

**Table SC-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	164,913	0	0	0	0	0	272,354	530,240	297,881
B	500,445	504,849	669,375	1,362,681	1,498,723	857,055	171,099	742,648	1,160,713	1,559,751	1,527,800	1,892,566	2,284,546	1,898,166
C	767,972	1,140,530	1,268,462	812,956	716,777	1,053,363	775,467	796,613	780,689	1,153,289	1,217,27	614,695	0	660,273
D	788,664	432,085	115,250	0	0	0	767,551	283,335	284,307	0	0	0	0	0
F	0	0	0	0	0	0	279,673	0	0	0	0	0	0	0
Subtotal	2,057,080	2,077,464	2,053,087	2,175,637	1,215,500	2,075,331	1,993,790	1,822,596	2,225,709	2,713,040	2,745,727	2,779,616	2,814,786	2,856,320
NM	2,050,715	2,072,833	2,157,834	2,094,513	2,142,347	2,368,779	2,535,206	2,767,276	2,399,655	1,966,190	1,977,996	1,995,223	2,017,696	2,039,826
Total	4,107,795	4,150,297	4,210,921	4,270,150	4,357,847	4,444,110	4,528,996	4,589,872	4,625,364	4,679,230	4,723,723	4,774,839	4,832,482	4,896,146

## 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	2011-2013	2012-2014	2013-2015
A	2,038,396	2,274,327	2,469,116	2,356,930	167,413	337,147	1,249,671	1,863,512	1,333,930	1,973,205	1,996,146	2,022,005	2,048,672	2,078,742
B	0	0	0	0	1,139,307	1,607,925	718,415	0	0	0	0	0	0	0
C	0	0	0	0	1,104,622	457,271	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,038,396	2,274,327	2,469,116	2,356,930	2,411,342	2,402,342	1,968,086	1,863,512	1,333,930	1,973,205	1,996,146	2,022,005	2,048,672	2,078,742
NM	2,069,399	1,875,970	1,741,805	1,913,220	1,946,505	2,041,768	2,560,910	2,726,360	3,341,434	2,706,025	2,727,577	2,752,834	2,783,810	2,817,404
Total	4,107,795	4,150,297	4,210,921	4,270,150	4,357,847	4,444,110	4,528,996	4,589,872	4,625,364	4,679,230	4,723,723	4,774,839	4,832,482	4,896,146

## 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	2011-2013	2012-2014	2013-2015
A	356,174	776,952	904,934	607,773	386,116	644,856	415,010	1,157,874	1,333,930	1,973,205	1,996,146	961,241	1,770,784	2,078,742
B	412,517	766,860	1,164,863	843,893	673,155	374,532	861,587	705,638	0	0	0	1,060,764	277,888	0
C	1,269,706	533,394	199,660	905,265	1,144,093	1,382,955	691,489	0	0	0	0	0	0	0
D	0	197,121	199,660	0	207,979	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,038,396	2,274,327	2,469,116	2,356,930	2,411,342	2,402,342	1,968,086	1,863,512	1,333,930	1,973,205	1,996,146	2,022,005	2,048,672	2,078,742
NM	2,069,399	1,875,970	1,741,805	1,913,220	1,946,505	2,041,768	2,560,910	2,726,360	3,341,434	2,706,025	2,727,577	2,752,834	2,783,810	2,817,404
Total	4,107,795	4,150,297	4,210,921	4,270,150	4,357,847	4,444,110	4,528,996	4,589,872	4,625,364	4,679,230	4,723,723	4,774,839	4,832,482	4,896,146

NM – Not Monitored

Figure SC-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone South Carolina

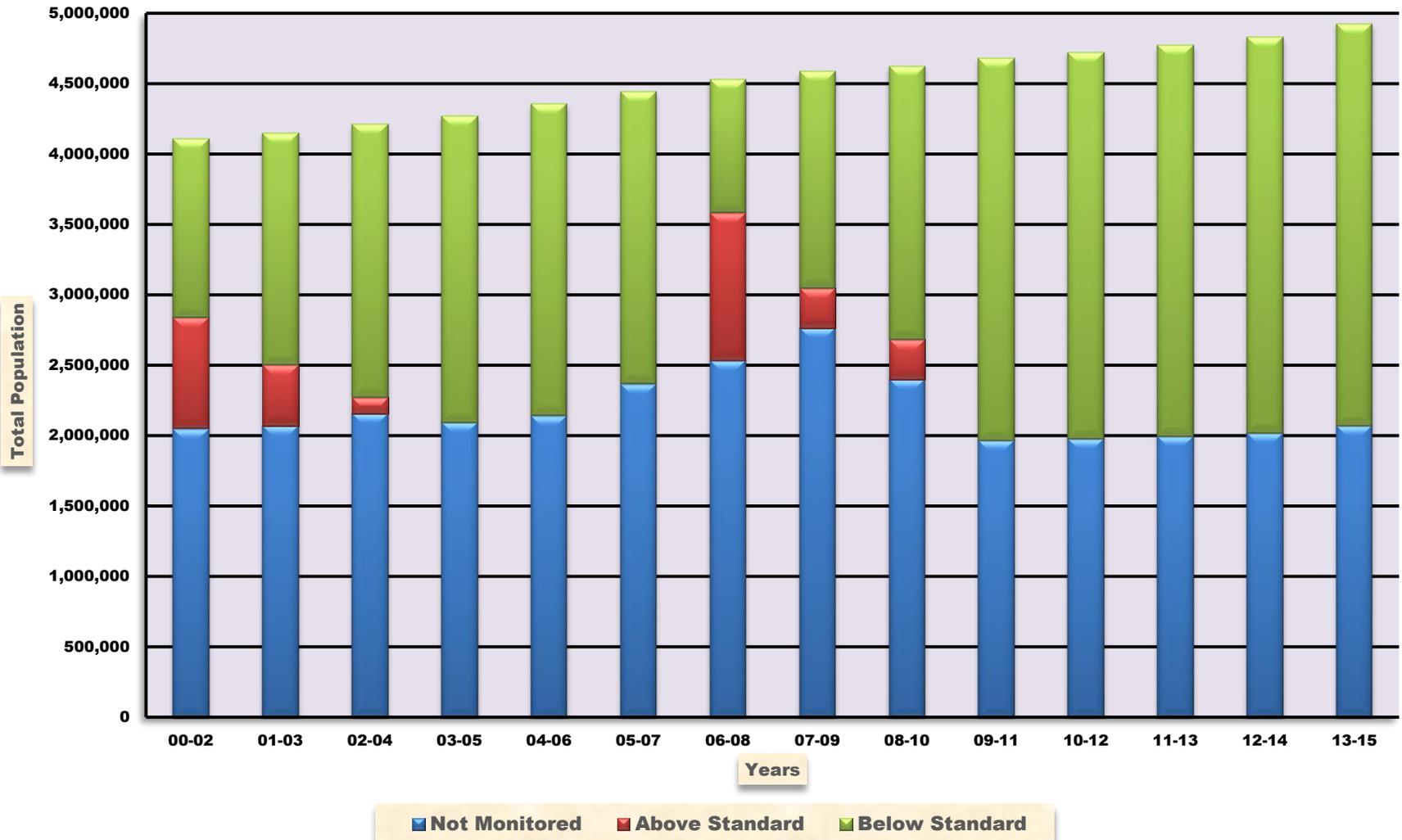


Figure SC-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 South Carolina

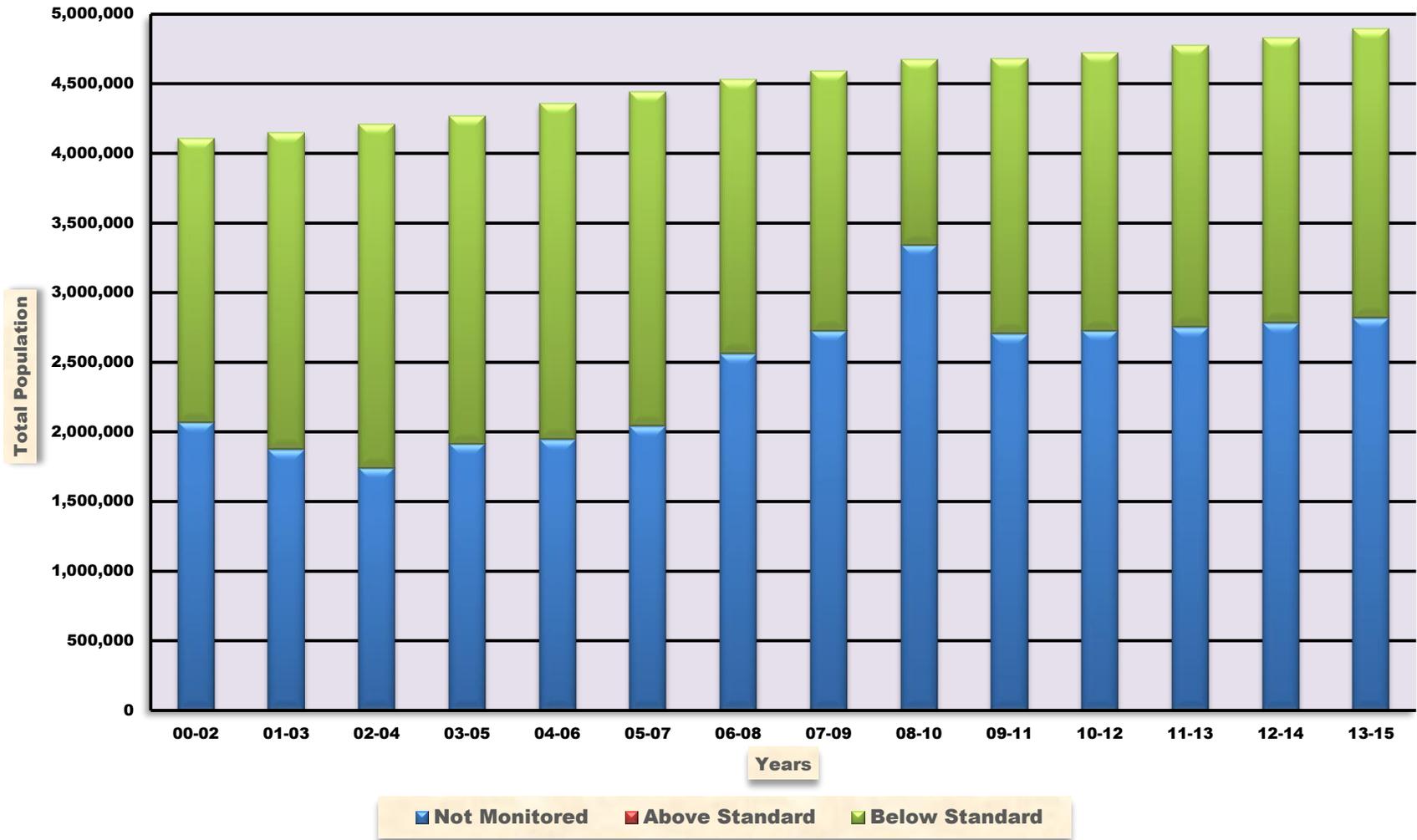
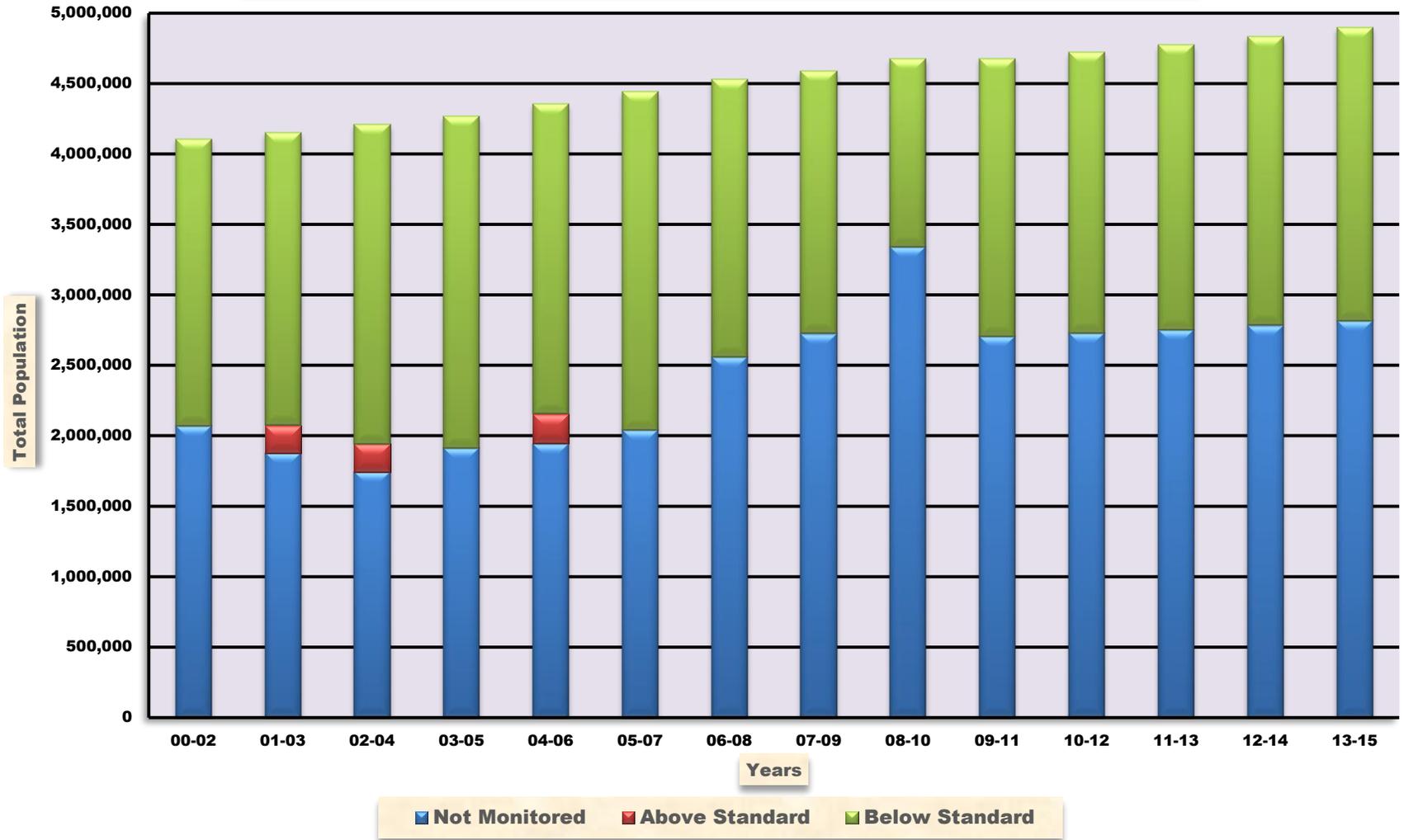


Figure SC-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 South Carolina



## **SOUTH DAKOTA**

### **Ozone**

In the 2000 – 2002 time period, there were no ozone monitors and no people lived in counties where measured air quality met the ozone standard. By 2013 – 2015 this had increased to approximately 0.27 million people (31.6%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure SD-1 shows the distribution of people by year. The population weighted ozone design value in 2002 – 2004 was 0.068 ppm. By 2013 – 2015 this had lowered to a value of 0.063 ppm, a reduction of 7.4 percent.

### **24-Hour PM-2.5**

In the 2000 – 2002 time period, approximately 0.3 million people (40.8%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.3 million people (34.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure SD-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 23  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 20  $\mu\text{g}/\text{m}^3$ , a reduction of 13.0 percent.

### **Annual PM-2.5**

In the 2000 – 2002 time period, approximately 0.3 million people (40.8%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 0.3 million people (34.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure SD-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 8.9  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 7.8  $\mu\text{g}/\text{m}^3$ , a reduction of 12.4 percent.

**Table SD-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Billings	936	0.058	B	N	ND	--	ND	--	--
Brown	38,785	ND	--	--	17	A	6.7	A	N
Burke	2,308	0.061	B	N	ND	--	ND	--	--
Burleigh	92,991	0.061	B	N	ND	--	ND	--	--
Cass	171,512	0.058	B	N	ND	--	ND	--	--
Codington	27,939	ND	--	--	18	A	7.0	A	N
Custer	8,446	ND	--	--	12	A	3.1	A	N
Dunn	4,646	0.059	B	N	ND	--	ND	--	--
Jackson	3,321	ND	--	--	15	A	4.6	A	N
McKenzie	12,826	0.058	B	N	ND	--	ND	--	--
Mercer	8,853	0.058	B	N	ND	--	ND	--	--
Minnehaha	185,197	ND	--	--	22	A	8.4	A	Y
Oliver	1,846	0.061	B	N	ND	--	ND	--	--
Pennington	108,702	ND	--	--	15	A	6.3	A	Y
Union	14,909	ND	--	--	22	A	8.5	A	N
Williams	35,294	0.058	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>718,511</b>								
Not Monitored	139,958								
<b>Total</b>	<b>858,469</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table SD-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	ND	23	8.9
2001 – 2003	ND	21	8.7
2002 – 2004	0.068	19	7.5
2003 – 2005	0.066	21	9.1
2004 – 2006	0.065	21	9.1
2005 – 2007	0.066	21	9.0
2006 – 2008	0.063	20	8.6
2007 – 2009	0.060	20	8.3
2008 - 2010	0.061	21	8.2
2009 – 2011	0.062	21	7.8
2010 – 2012	0.066	20	7.6
2011 – 2013	0.066	19	7.6
2012 - 2014	0.066	19	7.4
2013 - 2015	0.063	20	7.8

# SOUTH DAKOTA

**Table SD-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	93,099	258,009	163,577	0	25,314	68,646	28,715	3,191	3,216	0	0
B	0	0	92,560	0	0	11,036	174,380	176,577	169,468	226,967	256,912	83,467	87,013	87,559
C	0	0	0	0	0	0	0	0	0	0	0	179,640	182,882	185,197
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>92,560</b>	<b>93,099</b>	<b>258,009</b>	<b>174,613</b>	<b>174,380</b>	<b>201,891</b>	<b>238,114</b>	<b>255,682</b>	<b>260,103</b>	<b>266,323</b>	<b>269,895</b>	<b>272,756</b>
<b>NM</b>	<b>760,020</b>	<b>763,729</b>	<b>677,836</b>	<b>677,297</b>	<b>525,024</b>	<b>617,010</b>	<b>624,744</b>	<b>605,176</b>	<b>576,066</b>	<b>568,400</b>	<b>573,251</b>	<b>578,554</b>	<b>583,280</b>	<b>585,713</b>
<b>Total</b>	<b>760,020</b>	<b>763,729</b>	<b>770,396</b>	<b>775,493</b>	<b>783,033</b>	<b>791,623</b>	<b>799,124</b>	<b>807,067</b>	<b>814,180</b>	<b>824,082</b>	<b>833,354</b>	<b>844,877</b>	<b>853,175</b>	<b>858,469</b>

## 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	2011-2013	2012-2014	2013-2015
A	309,715	336,751	340,933	315,664	350,638	364,196	369,729	388,578	377,386	397,215	403,335	410,642	417,532	292,970
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>309,715</b>	<b>336,751</b>	<b>340,933</b>	<b>315,664</b>	<b>350,638</b>	<b>364,196</b>	<b>369,729</b>	<b>388,578</b>	<b>377,386</b>	<b>397,215</b>	<b>403,335</b>	<b>410,642</b>	<b>417,532</b>	<b>292,970</b>
<b>NM</b>	<b>450,305</b>	<b>426,978</b>	<b>429,463</b>	<b>459,829</b>	<b>432,395</b>	<b>427,427</b>	<b>429,395</b>	<b>417,489</b>	<b>436,794</b>	<b>426,867</b>	<b>430,019</b>	<b>434,235</b>	<b>435,643</b>	<b>565,439</b>
<b>Total</b>	<b>760,020</b>	<b>763,729</b>	<b>770,396</b>	<b>775,493</b>	<b>783,033</b>	<b>791,623</b>	<b>799,124</b>	<b>807,067</b>	<b>814,180</b>	<b>824,082</b>	<b>833,354</b>	<b>844,877</b>	<b>853,175</b>	<b>858,469</b>

## 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	2011-2013	2012-2014	2013-2015
A	309,715	336,751	340,933	315,664	350,638	364,196	369,729	388,578	377,386	397,215	403,335	382,789	417,532	292,970
B	0	0	0	0	0	0	0	0	0	0	0	27,853	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>309,715</b>	<b>336,751</b>	<b>340,933</b>	<b>315,664</b>	<b>350,638</b>	<b>364,196</b>	<b>369,729</b>	<b>388,578</b>	<b>377,386</b>	<b>397,215</b>	<b>403,335</b>	<b>410,648</b>	<b>417,532</b>	<b>292,970</b>
<b>NM</b>	<b>450,305</b>	<b>426,978</b>	<b>429,463</b>	<b>459,829</b>	<b>432,395</b>	<b>427,427</b>	<b>429,395</b>	<b>418,489</b>	<b>436,794</b>	<b>426,867</b>	<b>430,019</b>	<b>434,235</b>	<b>435,643</b>	<b>565,499</b>
<b>Total</b>	<b>760,020</b>	<b>763,729</b>	<b>770,396</b>	<b>775,493</b>	<b>783,033</b>	<b>791,623</b>	<b>799,124</b>	<b>807,067</b>	<b>814,180</b>	<b>824,082</b>	<b>833,354</b>	<b>844,877</b>	<b>853,175</b>	<b>858,469</b>

**NM –Not Monitored**

Figure SD-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone South Dakota

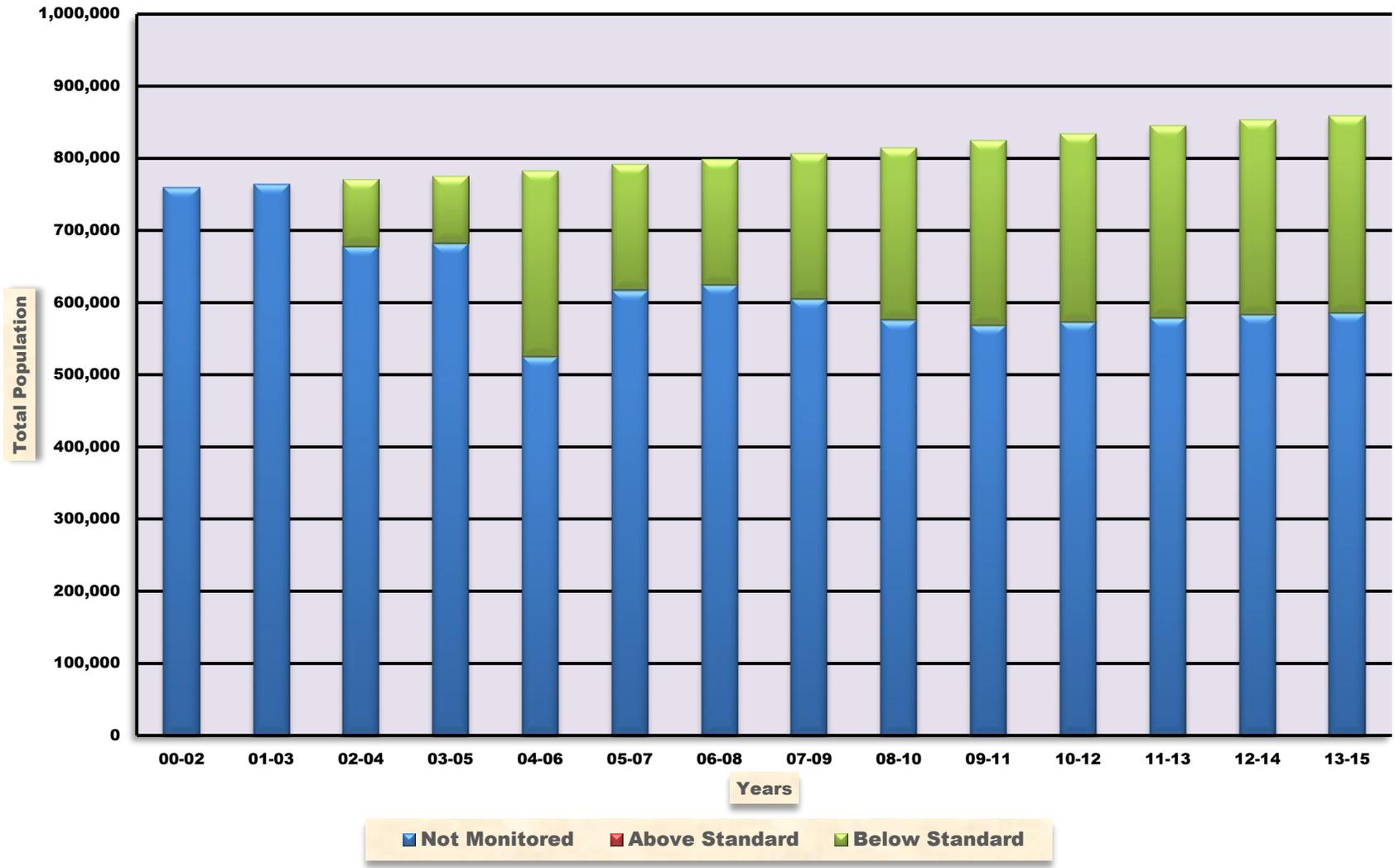


Figure SD-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
South Dakota**

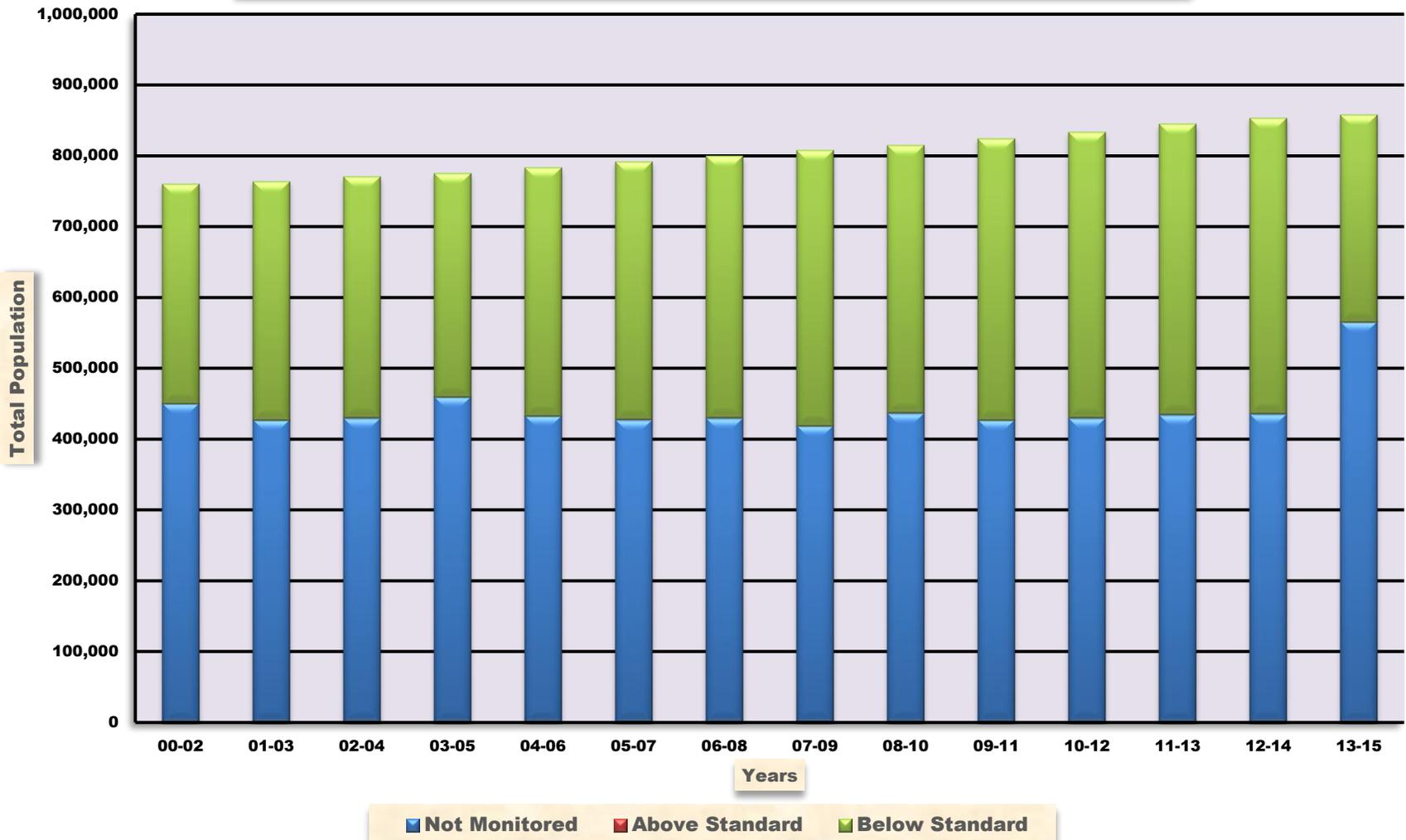
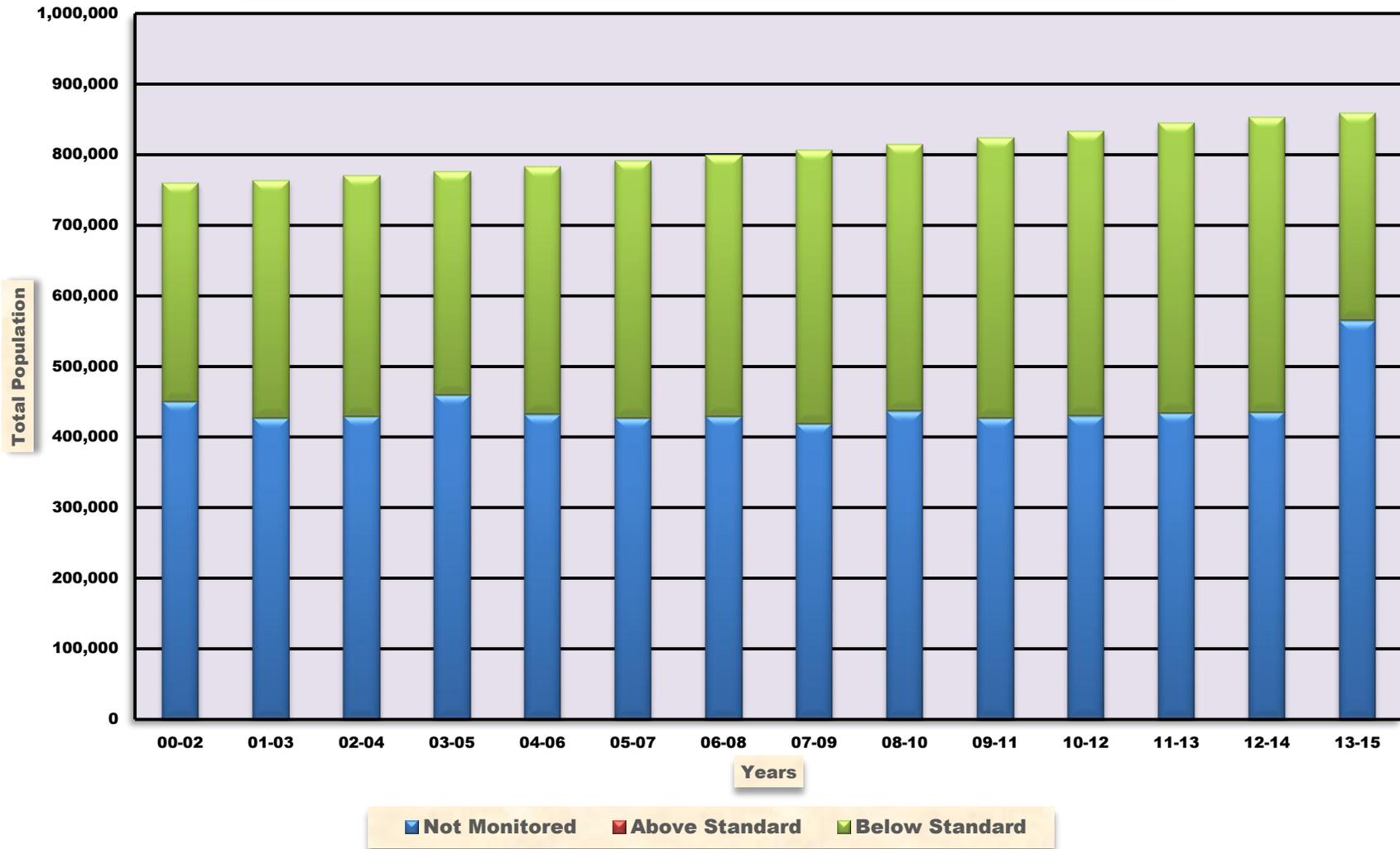


Figure SD-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 South Dakota



# TENNESSEE

## Ozone

In the 2000 – 2002 time period, 0.96 million people (16.5%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 3.5 million people (53.0%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure TN-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.087 ppm. By 2013 – 2015 this had lowered to a value of 0.064 ppm, a reduction of 26.4 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 3.0 million people (52.0%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.6 million people (54.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure TN-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 35  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 19  $\mu\text{g}/\text{m}^3$ , a reduction of 45.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.8 million people (30.4%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 3.6 million people (54.1%). The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure TN-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.1  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 9.0, a reduction of 40.4 percent.

# TENNESSEE

**Table TN-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Anderson	75,749	0.061	B	N	ND	--	ND	--	--
Blount	127,253	0.062	B	Y	18	A	8.6	A	N
Claiborne	31,709	0.062	B	N	ND	--	ND	--	--
Davidson	678,889	0.064	C	Y	20	A	9.7	B	Y
DeKalb	19,182	0.061	B	N	ND	--	ND	--	--
Dyer	37,893	ND	--	--	17	A	8.5	A	N
Hamilton	354,098	0.064	C	Y	18	A	8.8	A	Y
Jefferson	53,240	0.067	C	N	ND	--	ND	--	--
Knox	451,324	0.062	B	Y	19	A	9.6	B	Y
Lawrence	42,561	ND	--	--	16	A	7.7	A	N
Loudon	51,130	ND	--	--	18	A	9.4	A	N
McMinn	52,639	ND	--	--	17	A	8.6	A	N
Madison	97,610	ND	--	--	17	A	8.3	A	Y
Maury	87,757	ND	--	--	16	A	8.0	A	N
Montgomery	193,479	ND	--	--	20	A	8.9	A	N
Putnam	74,553	ND	--	--	18	A	8.2	A	N
Roane	52,753	ND	--	--	18	A	8.7	A	Y
Sevier	95,946	0.067	C	N	ND	--	ND	--	--
Shelby	938,069	0.066	C	Y	19	A	8.8	A	Y
Sullivan	156,791	0.063	C	Y	15	A	8.3	A	N
Sumner	175,989	0.067	C	N	19	A	9.0	A	N
Williamson	211,672	0.062	B	N	ND	--	ND	--	--
Wilson	128,911	0.062	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>4,113,448</b>								
Not Monitored	2,486,851								
<b>Total</b>	<b>6,600,299</b>								

**DV – Design Value**

**ND - No Data**

**MM – Multiple Monitors**

**Table TN-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.087	35	15.1
2001 – 2003	0.083	33	14.1
2002 – 2004	0.080	30	13.4
2003 – 2005	0.077	32	13.8
2004 – 2006	0.077	31	13.7
2005 – 2007	0.079	31	13.4
2006 – 2008	0.078	28	12.6
2007 – 2009	0.074	25	11.6
2008 - 2010	0.071	23	11.0
2009 – 2011	0.070	22	10.6
2010 – 2012	0.074	21	10.5
2011 – 2013	0.071	20	9.7
2012 - 2014	0.068	19	9.4
2013 - 2015	0.064	19	9.0

# TENNESSEE

**Table TN-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	291,507	352,562	59,114	0	0	0	0	0	0	0	0	0
B	287,108	55,578	388,678	1,132,314	972,957	606,444	0	310,504	626,681	904,396	0	616,911	1,347,246	756,512
C	671,940	1,977,849	2,445,136	1,783,221	2,356,649	2,773,606	795,246	2,091,951	2,061,673	2,243,515	2,019,009	1,640,115	2,120,637	2,742,311
D	2,196,384	1,702,508	568,311	57,668	0	59,975	2,415,860	1,168,536	911,652	61,951	1,230,617	795,198	0	0
F	542,053	0	0	0	0	0	273,496	0	0	0	0	0	0	0
Subtotal	3,697,484	3,735,935	3,693,631	3,325,764	3,388,720	3,440,024	3,484,601	3,570,990	3,600,005	3,209,861	3,249,626	3,052,224	3,467,883	3,498,822
NM	2,098,434	2,111,878	2,217,178	2,665,293	2,700,046	2,735,703	2,762,810	2,735,029	2,746,100	3,193,492	3,206,617	3,443,754	3,081,469	3,101,477
Total	5,796,918	5,847,812	5,910,809	5,991,057	6,088,766	6,175,727	6,247,411	6,306,019	6,346,105	6,408,353	6,456,143	6,495,978	6,549,352	6,600,299

## 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	2011-2013	2012-2014	2013-2015
A	3,013,576	2,473,480	2,494,577	2,523,064	362,123	324,784	1,401,703	3,174,128	3,422,601	3,458,584	3,497,363	3,518,121	3,547,279	3,572,788
B	0	0	0	0	1,106,530	920,987	1,292,381	222,961	0	0	0	0	0	0
C	0	0	0	0	1,661,884	1,503,412	174,000	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,013,576	2,473,480	2,494,577	2,523,064	2,130,537	2,749,183	2,868,083	3,397,089	3,422,601	3,458,584	3,497,363	3,518,121	3,547,279	3,572,788
NM	2,782,342	3,374,332	3,416,232	3,467,993	2,958,229	3,426,544	3,379,328	2,908,930	2,923,504	2,944,769	2,958,880	2,977,857	3,002,073	3,027,511
Total	5,796,918	5,847,812	5,910,809	5,991,057	6,088,766	6,072,727	6,247,411	6,306,019	6,346,105	6,408,353	6,456,143	6,495,978	6,549,352	6,600,299

## 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	2011-2013	2012-2014	2013-2015
A	0	226,683	381,330	40,794	40,773	230,280	482,810	2,468,513	3,085,894	3,240,120	3,360,301	1,139,990	2,227,278	3,007,682
B	262,540	353,779	884,512	337,666	933,765	911,997	2,109,558	451,161	336,707	218,465	137,062	2,111,615	1,302,418	565,107
C	1,507,177	1,185,676	963,196	1,740,371	1,699,007	1,560,613	275,716	477,415	0	0	0	248,835	17,583	0
D	984,231	707,342	265,538	404,234	456,992	46,294	0	0	0	0	0	17,682	0	0
F	259,629	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,013,576	2,473,480	2,494,577	2,523,064	3,130,537	2,749,183	2,868,083	3,397,089	3,422,601	3,458,584	3,497,363	2,518,121	3,547,279	3,572,788
NM	2,782,342	3,374,332	3,416,232	3,467,993	2,958,229	3,426,544	3,379,328	2,908,930	2,923,504	2,944,769	2,958,880	2,977,857	3,002,073	3,027,511
Total	5,796,918	5,847,812	5,910,809	5,991,057	6,088,766	6,072,727	6,247,411	6,306,019	6,346,105	6,408,353	6,456,143	6,495,978	6,549,352	6,600,299

NM – Not Monitored

Figure TN-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Tennessee

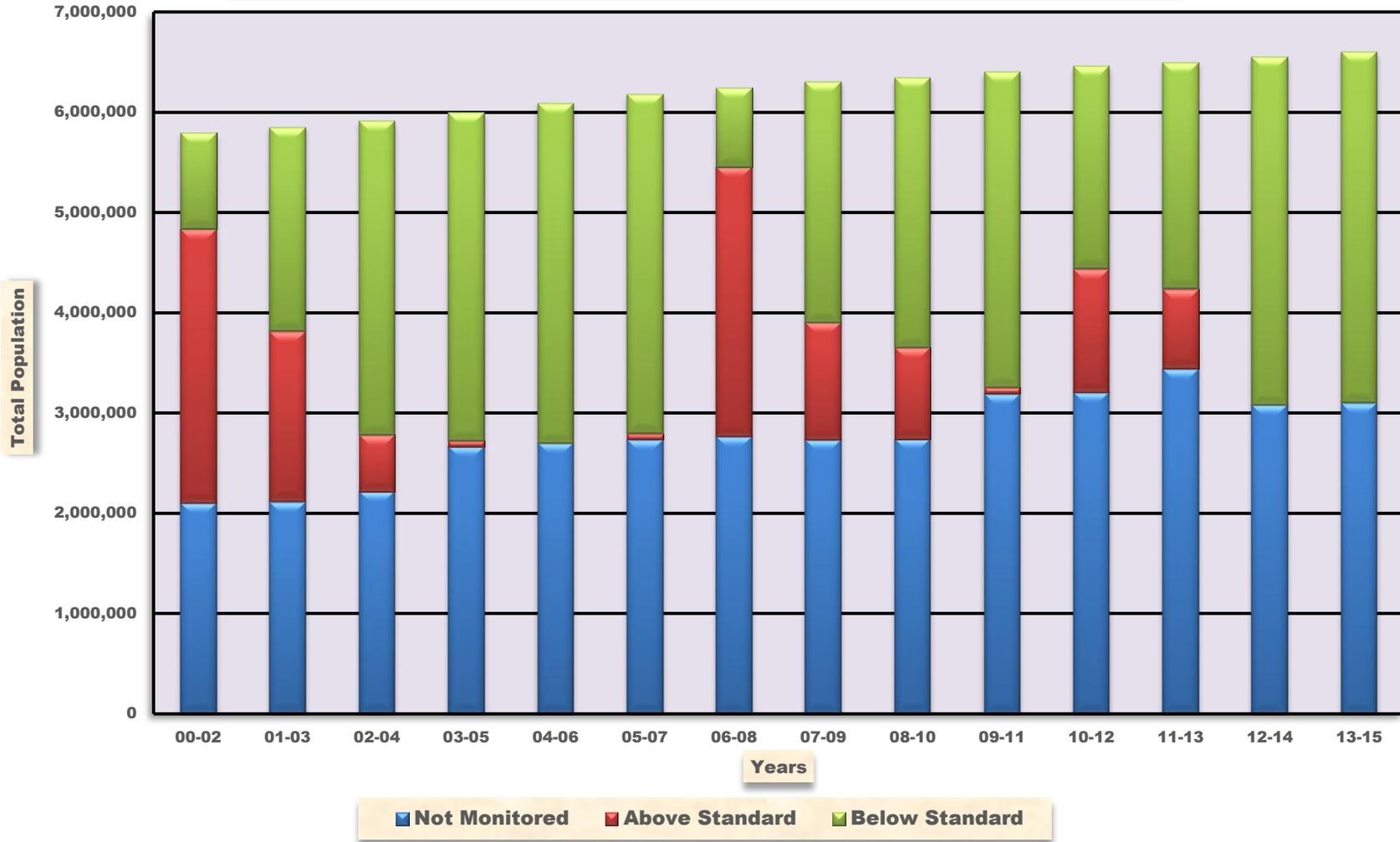


Figure TN-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Tennessee

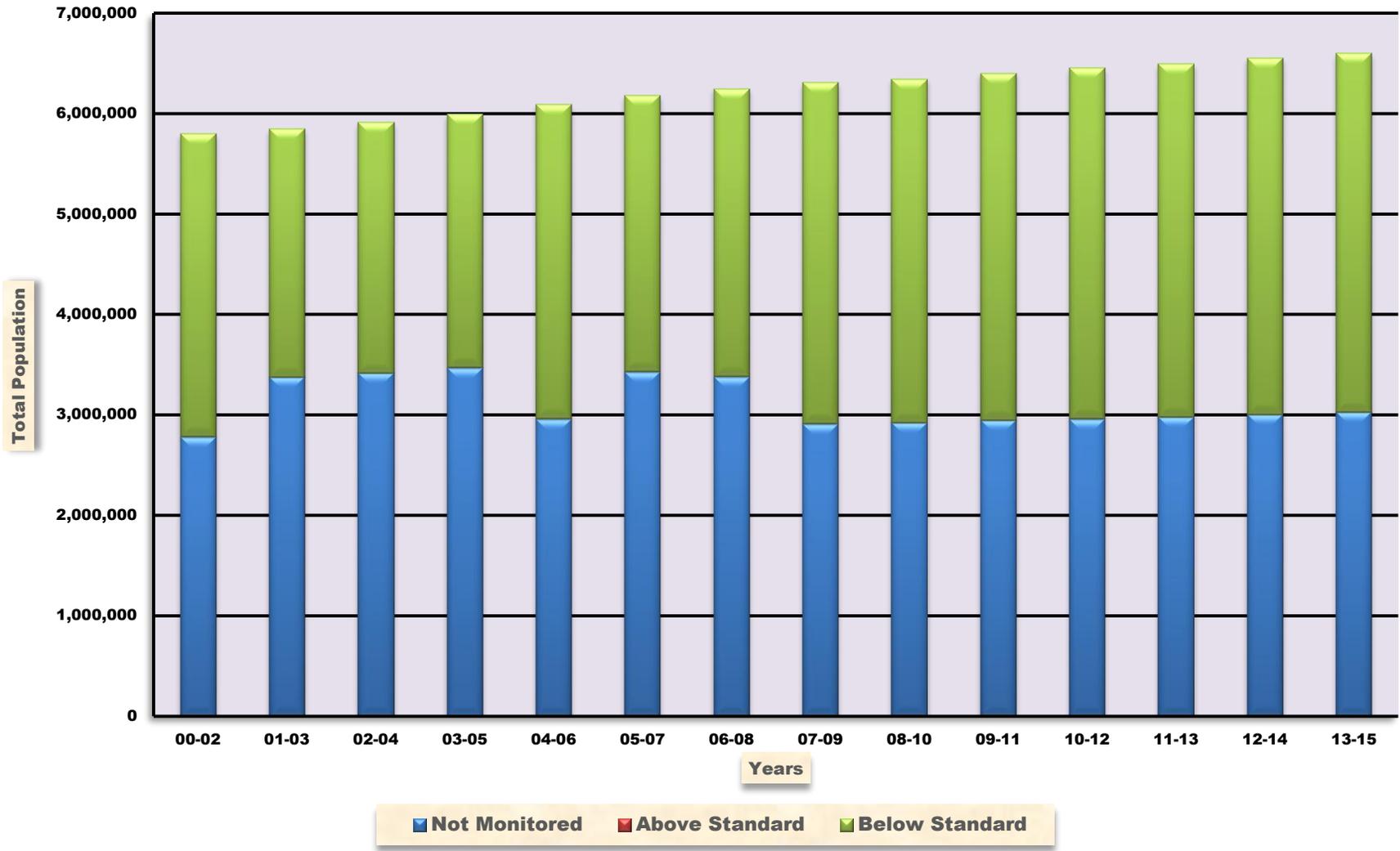
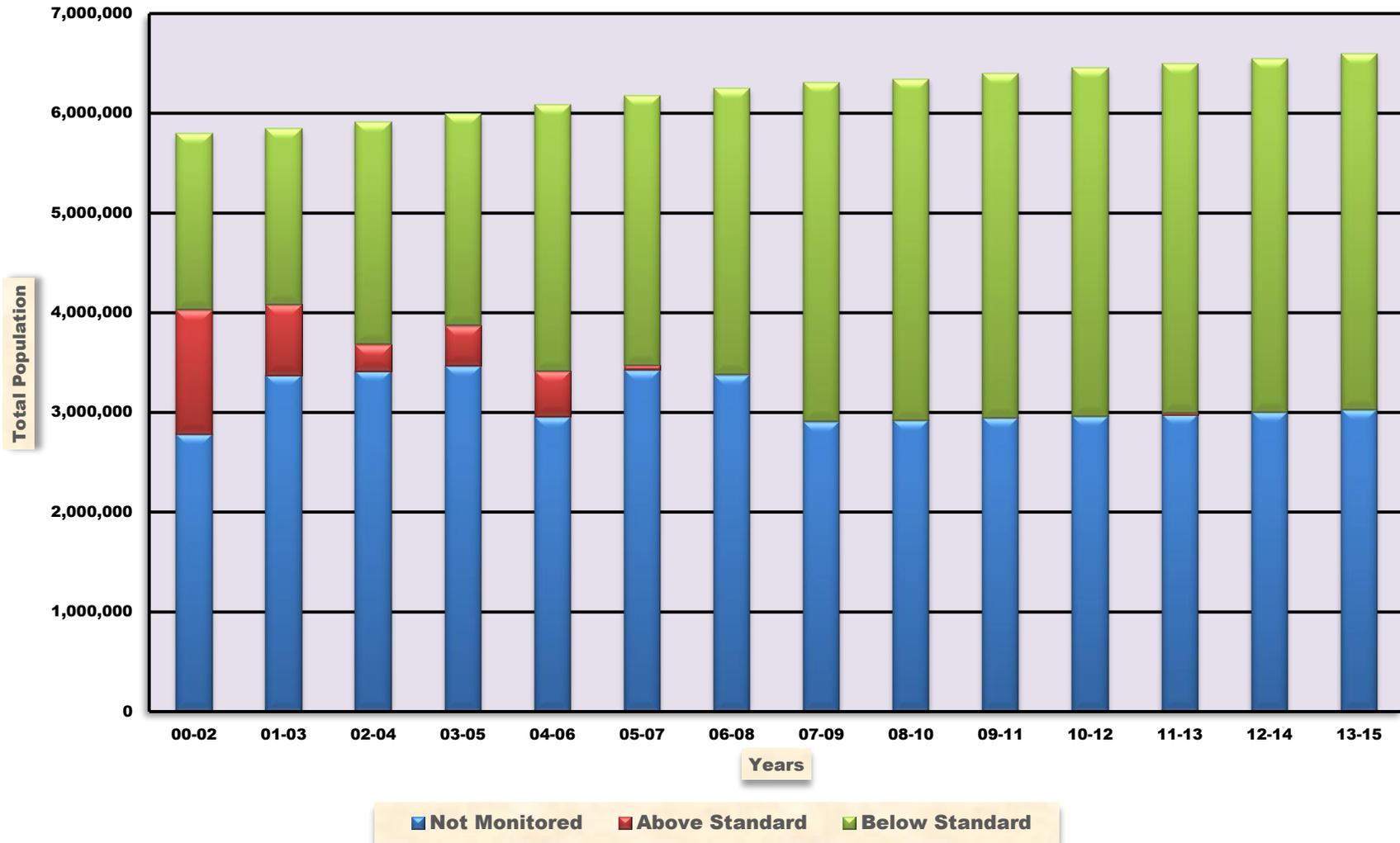


Figure TN-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Tennessee



# TEXAS

## Ozone

In the 2000 – 2002 time period, 5.9 million people (27.0%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 9.7 million people (35.3%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure TX-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.088 ppm. By 2013 – 2015 this had lowered to a value of 0.070 ppm, a reduction of 20.5 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 14.1 million people (65.2%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 13.7 million people (49.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure TX-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 28  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 17.9 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 14.1 million people (565.2%) lived in counties where annual PM-2.5 levels met the standard. By 2013– 2015 this had decreased to approximately 13.7 million people (49.8%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure TX-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 11.2  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 10.1  $\mu\text{g}/\text{m}^3$ , a reduction of 9.8 percent.

# TEXAS

**Table TX-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bell	334,941	0.069	C	N	ND	--	ND	--	--
<b>Bexar</b>	<b>1,897,753</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	21	A	8.4	A	Y
Bowie	93,389	ND	--	--	24	A	10.0	B	N
Brazoria	346,312	0.069	C	Y	ND	--	ND	--	--
Brewster	9,145	0.064	C	N	ND	--	ND	--	--
Cameron	422,156	0.059	B	Y	ND	--	ND	--	--
<b>Collin</b>	<b>914,127</b>	<b>0.075</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
<b>Dallas</b>	<b>2,553,385</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	24	A	11.0	C	Y
<b>Denton</b>	<b>780,612</b>	<b>0.077</b>	<b>D</b>	<b>Y</b>	ND	--	ND	--	--
Ellis	163,632	0.067	C	Y	22	A	9.4	A	N
El Paso	835,593	0.066	C	Y	ND	--	ND	--	--
<b>Galveston</b>	<b>322,225</b>	<b>0.072</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Gregg	124,108	0.068	C	N	ND	--	ND	--	--
<b>Harris</b>	<b>4,538,028</b>	<b>0.071</b>	<b>D</b>	<b>Y</b>	22	A	11.1	C	Y
Harrison	66,746	0.066	C	N	21	A	9.2	A	N
Hidalgo	842,304	0.056	B	N	ND	--	ND	--	--
<b>Hood</b>	<b>55,423</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Hunt	89,844	0.064	C	N	ND	--	ND	--	--
Jefferson	254,308	0.065	B	Y	ND	--	ND	--	--
<b>Johnson</b>	<b>159,990</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Kaufman	114,690	0.067	C	N	ND	--	ND	--	--
McLennan	245,671	0.067	C	N	ND	--	ND	--	--
<b>Montgomery</b>	<b>537,559</b>	<b>0.073</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Navarro	48,323	0.065	C	N	ND	--	ND	--	--
Nueces	359,715	0.064	C	Y	25	A	9.6	B	Y
Orange	84,260	0.064	C	Y	ND	--	ND	--	--
<b>Parker</b>	<b>126,042</b>	<b>0.075</b>	<b>D</b>	<b>N</b>	ND	--	ND	--	--
Randall	130,269	0.066	C	N	ND	--	ND	--	--
Rockwall	90,861	0.070	C	N	ND	--	ND	--	--
Smith	222,936	0.067	C	N	ND	--	ND	--	--
<b>Tarrant</b>	<b>1,982,498</b>	<b>0.074</b>	<b>D</b>	<b>Y</b>	24	A	10.2	B	Y
Travis	1,176,558	0.068	C	Y	23	A	8.4	A	Y
Victoria	92,382	0.064	C	N	ND	--	ND	--	--
Webb	269,721	0.059	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>20,285,506</b>								
Not Monitored	7,183,608								
<b>Total</b>	<b>27,469,114</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table TX-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.088	28	11.2
2001 – 2003	0.086	28	11.5
2002 – 2004	0.086	28	11.8
2003 – 2005	0.085	27	12.2
2004 – 2006	0.085	26	12.5
2005 – 2007	0.081	25	12.0
2006 – 2008	0.078	24	11.0
2007 – 2009	0.074	24	10.8
2008 - 2010	0.074	22	10.3
2009 – 2011	0.076	21	10.4
2010 – 2012	0.077	22	10.4
2011 – 2013	0.077	23	10.3
2012 - 2014	0.072	22	10.0
2013 - 2015	0.070	23	10.1

# TEXAS

**Table TX-3  
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	2011-2013	2012-2014	2013-2015
A	870,400	886,516	920,049	570,024	1,313,618	1,510,263	368,347	1,003,376	250,304	398,905	0	407,998	1,418,162	0
B	868,446	1,000,790	1,142,421	2,103,423	1,174,521	2,147,187	1,243,938	2,078,874	2,255,873	1,808,807	1,387,589	1,278,449	2,280,460	1,927,501
C	4,114,068	4,452,017	4,226,013	3,895,998	5,699,123	7,327,198	3,996,215	6,610,760	7,981,972	6,415,407	4,387,029	5,386,098	9,170,921	7,779,976
D	3,895,628	3,760,210	4,960,471	6,947,296	5,348,563	4,207,398	6,615,622	5,342,311	6,538,057	6,707,331	9,907,364	7,770,654	6,669,578	9,852,056
F	4,262,482	4,453,573	3,972,398	2,468,841	2,913,711	1,191,891	4,657,031	2,457,036	858,990	2,596,818	3,010,483	4,166,868	0	632,584
Subtotal	14,011,024	14,553,105	15,221,351	15,985,582	16,449,536	16,383,937	16,881,153	17,492,357	17,885,195	17,927,269	18,692,465	18,960,067	19,539,121	20,192,117
NM	7,679,301	7,477,826	7,172,672	6,792,541	6,910,044	7,448,046	7,427,886	7,309,404	7,260,366	7,747,412	7,366,738	7,487,126	7,417,837	7,276,997
Total	21,690,325	22,030,931	22,394,023	22,778,123	23,359,580	23,831,983	24,309,039	24,801,761	25,145,561	25,674,681	26,059,203	26,448,193	26,956,958	27,469,114

**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	2011-2013	2012-2014	2013-2015
A	14,138,284	13,301,886	9,993,020	11,227,413	7,077,704	8,470,415	11,500,846	11,485,607	13,359,432	13,953,852	14,150,749	13,404,686	13,422,015	13,667,297
B	0	0	0	0	1,359,380	1,378,237	256,643	782,126	789,380	0	0	176,054	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	377,789	0	0	0	0	0	0	0	0
F	0	0	0	0	744,795	0	256,643	0	0	0	0	0	0	0
Subtotal	14,138,284	13,301,886	9,993,020	11,227,413	9,181,879	10,226,441	12,014,133	12,267,763	14,148,812	13,953,852	14,150,749	13,580,739	13,422,015	13,667,297
NM	7,552,041	8,729,045	12,401,003	11,550,710	14,177,701	13,605,542	12,294,906	12,533,998	10,996,749	11,720,829	11,908,454	12,867,454	13,534,943	13,801,817
Total	21,690,325	22,030,931	22,394,023	22,778,123	23,359,580	23,831,983	24,309,039	24,801,761	25,145,561	25,674,681	26,059,203	26,448,193	26,956,958	27,469,114

**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	2011-2013	2012-2014	2013-2015
A	8,342,426	7,471,364	5,358,426	5,135,189	5,050,081	6,418,670	9,040,421	9,315,599	12,517,777	12,560,221	12,732,849	2,968,000	2,867,464	4,320,140
B	4,826,751	4,286,548	3,296,734	3,516,259	2,117,858	2,142,201	1,404,209	1,344,955	1,364,153	1,393,631	1,417,900	6,067,480	6,113,182	3,532,437
C	969,108	1,367,674	979,034	1,847,870	1,269,145	0	1,312,860	1,344,955	266,882	0	0	4,545,260	4,441,370	5,814,721
D	0	0	0	0	744,795	1,287,781	256,643	262,253	0	0	0	0	0	0
F	0	176,300	358,826	728,095	0	377,789	0	0	0	0	0	0	0	0
Subtotal	14,138,284	13,301,886	9,993,020	11,227,413	9,181,879	10,226,441	12,014,133	12,267,763	14,148,812	13,953,852	14,150,749	13,580,739	13,422,015	13,667,297
NM	7,552,041	8,729,045	12,401,003	11,550,710	14,177,701	13,605,542	12,294,906	12,533,998	10,996,749	11,720,829	11,908,454	12,867,454	13,534,943	13,801,817
Total	21,690,325	22,030,931	22,394,023	22,778,123	23,359,580	23,831,983	24,309,039	24,801,761	25,145,561	25,674,681	26,059,203	26,448,193	26,956,958	27,469,114

NM – Not Monitored

Figure TX-1

People Breathing Various Air Quality Levels - 8 Hour Ozone  
Texas

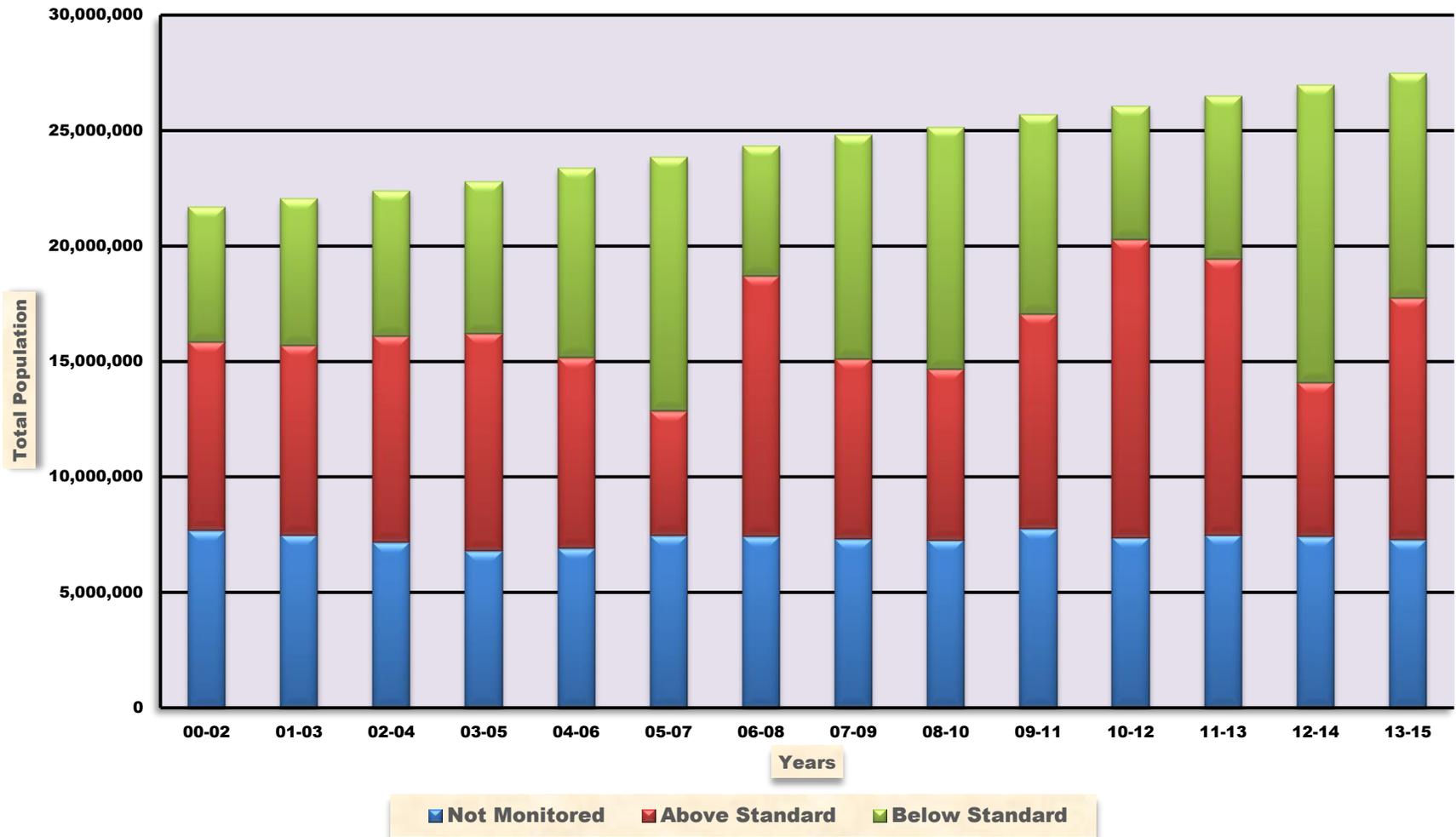


Figure TX-2

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Texas**

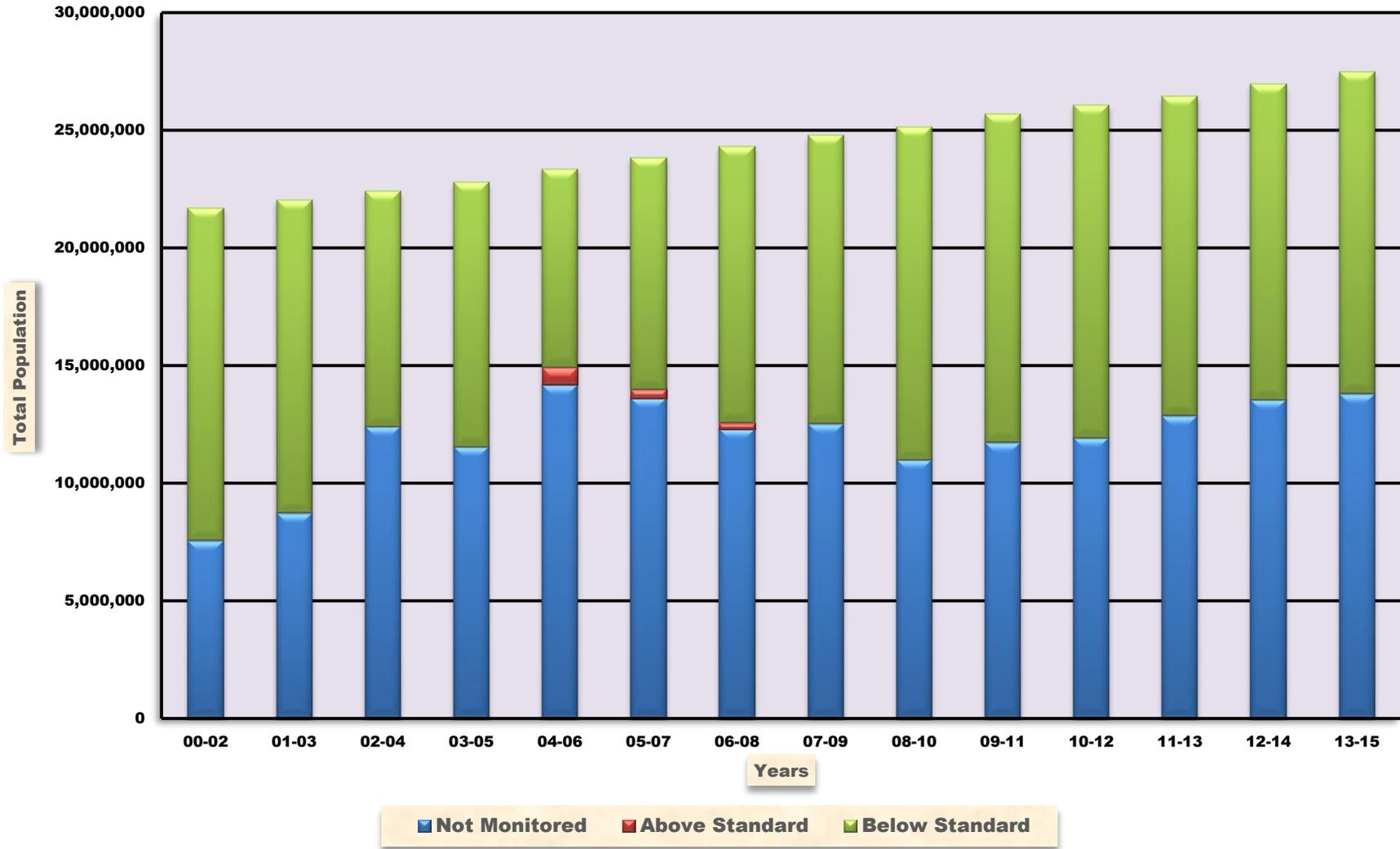
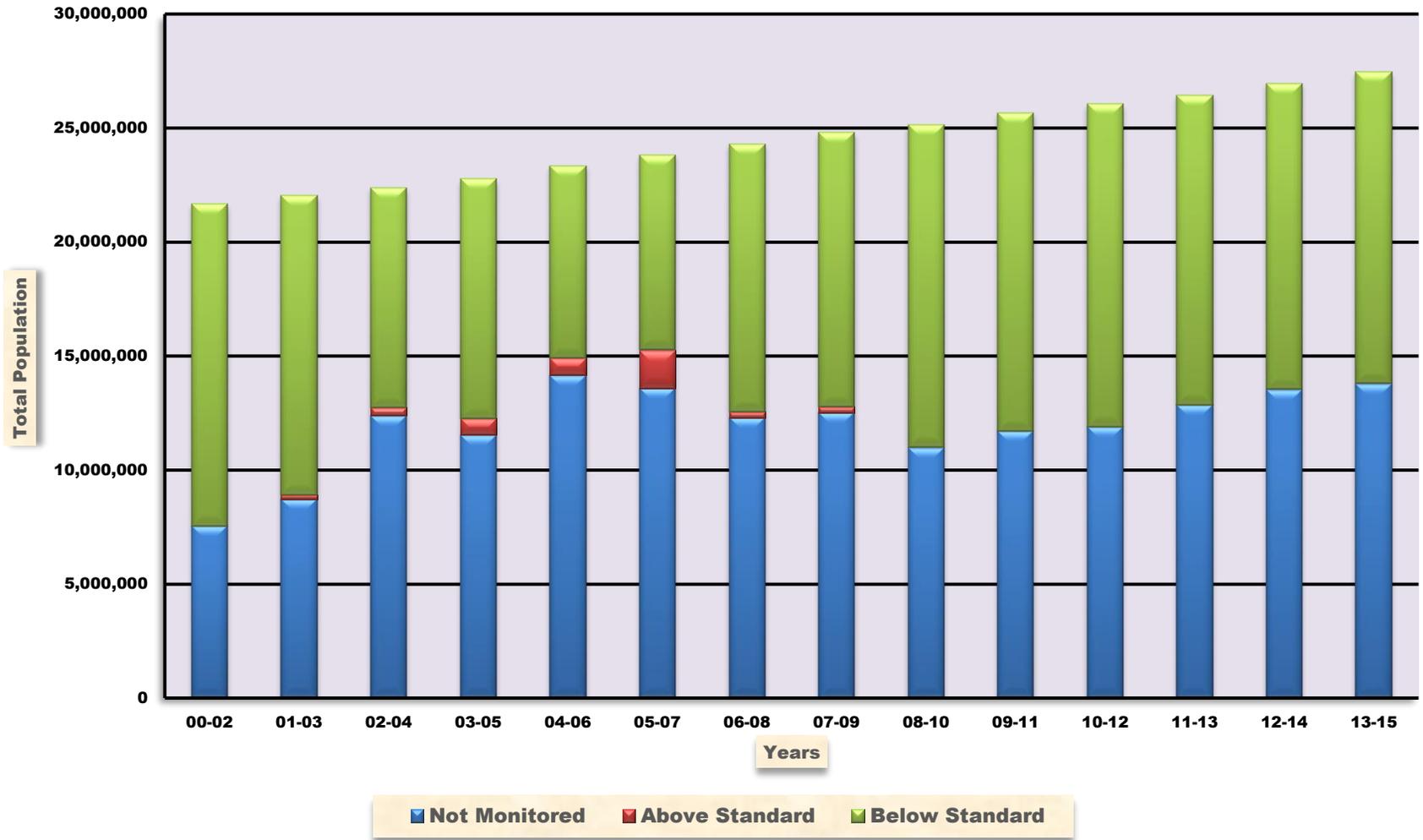


Figure TX-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Texas



# UTAH

## Ozone

In the 2000 – 2002 time period, 1.9 million people (80.7%) lived in counties that met the ozone standard. By 2013 – 2015 this had decreased to approximately 0.37 million people (12.3%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure UT-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.077 ppm. By 2013 – 2015 this had lowered to a value of 0.072 ppm, a reduction of 6.5 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.8 million people (78.0%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.77 million people (25.6%). The standard was lowered from 65 to 35 µg/m3. Figure UT-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 50 µg/m3. By 2013 – 2015 this had lowered to a value of 39 µg/m3, a reduction of 22.0 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 1.8 million people (78.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 2.6 million people (86.5%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure UT-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 11.5 µg/m3. By 2013 – 2015 this had lowered to a value of 8.3 µg/m3, a reduction of 27.8 percent.

**Table UT-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Box Elder	52,097	0.066	C	Y	38	D	7.6	A	N
Cache	120,783	0.064	C	N	46	F	9.1	A	N
Carbon	20,479	0.066	C	N	ND	--	ND	--	--
Davis	336,043	ND	--	--	36	D	7.7	A	N
Garfield	5,009	0.065	C	N	ND	--	ND	--	--
<b>Salt Lake</b>	<b>1,107,314</b>	<b>0.073</b>	<b>D</b>	<b>Y</b>	<b>41</b>	<b>F</b>	<b>8.8</b>	<b>A</b>	<b>Y</b>
San Juan	15,772	0.065	C	N	ND	--	ND	--	--
Uintah	37,928	0.081	F	N	ND	--	ND	--	--
<b>Utah</b>	<b>575,205</b>	<b>0.072</b>	<b>D</b>	<b>Y</b>	<b>44</b>	<b>F</b>	<b>8.5</b>	<b>A</b>	<b>Y</b>
Washington	155,602	0.067	C	N	12	A	4.1	A	N
Weber	243,645	0.072	D	Y	34	C	8.5	A	N
<b>Subtotal</b>	<b>2,669,877</b>								
Not Monitored	326,042								
<b>Total</b>	<b>2,995,919</b>								

- Design Value

ND - No Data

MM - Multiple Monitors

**Table UT-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.077	50	11.5
2001 – 2003	0.077	47	11.1
2002 – 2004	0.075	46	11.5
2003 – 2005	0.075	42	10.7
2004 – 2006	0.076	42	10.8
2005 – 2007	0.078	38	9.6
2006 – 2008	0.076	37	9.6
2007 – 2009	0.073	40	9.9
2008 - 2010	0.070	37	9.3
2009 – 2011	0.070	37	8.6
2010 – 2012	0.071	32	8.1
2011 – 2013	0.073	39	8.9
2012 - 2014	0.072	40	8.7
2013 - 2015	0.072	39	8.3

# UTAH

**Table UT-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	98,854	100,501	101,236	0	0	0	0	0	0	0	0	0
B	806,531	381,444	952,162	973,700	741,047	430,050	0	143,222	170,232	501,072	134,764	116,909	138,618	0
C	1,070,687	1,310,055	664,381	673,853	1,351,926	1,826,168	848,773	2,007,906	2,320,001	2,038,613	2,426,610	1,967,990	2,498,607	369,742
D	0	0	0	0	0	0	1,515,030	301,965	0	0	11,508	539,861	38,814	1,926,164
F	0	0	0	0	0	0	0	0	0	0	23,016	35,555	18,434	37,928
Subtotal	1,877,218	1,691,499	1,715,397	1,748,054	2,194,209	2,256,218	2,363,803	2,453,093	2,490,232	2,539,684	2,595,898	2,660,314	2,694,472	2,333,834
NM	447,597	633,316	686,183	709,665	431,298	341,528	299,226	275,328	273,654	277,538	59,389	240,558	248,430	662,085
Total	2,324,815	2,360,197	2,401,580	2,457,719	2,525,507	2,597,746	2,663,029	2,723,421	2,763,885	2,817,222	2,855,287	2,900,872	2,942,902	2,995,919

**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	2011-2013	2012-2014	2013-2015
A	894,909	958,259	1,042,236	1,903,108	0	196,744	55,909	57,218	58,218	240,992	204,679	0	0	155,602
B	688,614	924,802	560,484	0	0	101,014	493,459	1,368,132	129,141	0	626,297	420,669	61,598	0
C	229,538	0	0	100,501	232,018	341,788	651,447	0	601,500	703,328	1,146,218	441,354	604,389	612,750
D	0	0	0	0	619,781	712,939	895,096	240,259	587,690	117,210	549,972	170,054	381,210	388,140
F	0	0	0	0	1,201,934	811,249	121,904	602,951	928,234	1,270,166	0	1,388,614	1,407,145	1,434,197
Subtotal	1,813,061	1,883,061	1,602,720	2,003,609	2,053,734	2,163,734	2,217,815	2,268,560	2,304,783	2,331,696	2,527,165	2,420,690	2,454,342	2,590,689
NM	511,754	477,126	798,860	454,110	471,773	434,012	450,214	454,861	459,102	485,526	328,122	480,182	446,530	405,230
Total	2,324,815	2,360,197	2,401,580	2,457,719	2,525,507	2,597,746	2,663,029	2,723,421	2,763,885	2,817,222	2,855,287	2,900,872	2,942,902	2,995,919

**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	2011-2013	2012-2014	2013-2015
A	249,676	1,189,460	786,143	1,523,923	1,630,232	2,163,734	2,217,815	2,268,560	2,304,783	2,331,696	2,527,165	1,824,615	2,090,428	2,590,689
B	1,333,847	462,401	629,749	290,094	262,369	0	0	0	0	0	0	596,076	363,914	0
C	229,538	231,201	186,808	189,593	161,133	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	1,813,061	1,883,061	1,602,720	2,003,609	2,053,734	2,163,734	2,217,815	2,268,560	2,304,783	2,331,696	2,527,165	2,420,690	2,454,342	2,590,689
NM	511,754	477,126	798,860	454,110	471,773	434,012	450,214	454,561	459,102	485,526	328,122	480,182	446,530	405,230
Total	2,324,815	2,360,197	2,401,580	2,457,719	2,525,507	2,597,746	2,663,029	2,723,421	2,763,885	2,817,222	2,855,287	2,900,872	2,942,902	2,995,919

NM – Not Monitored

Figure UT-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Utah

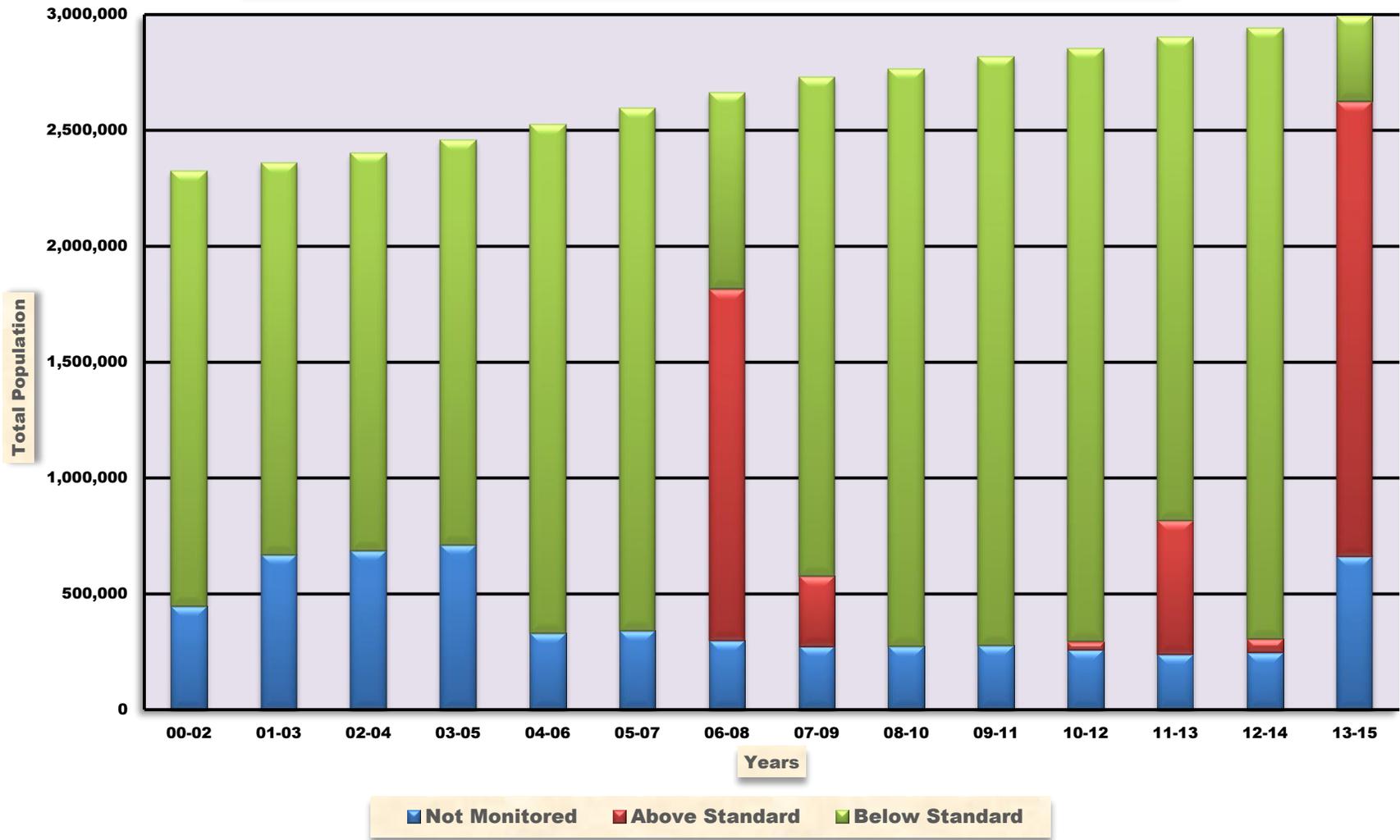


Figure UT-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Utah

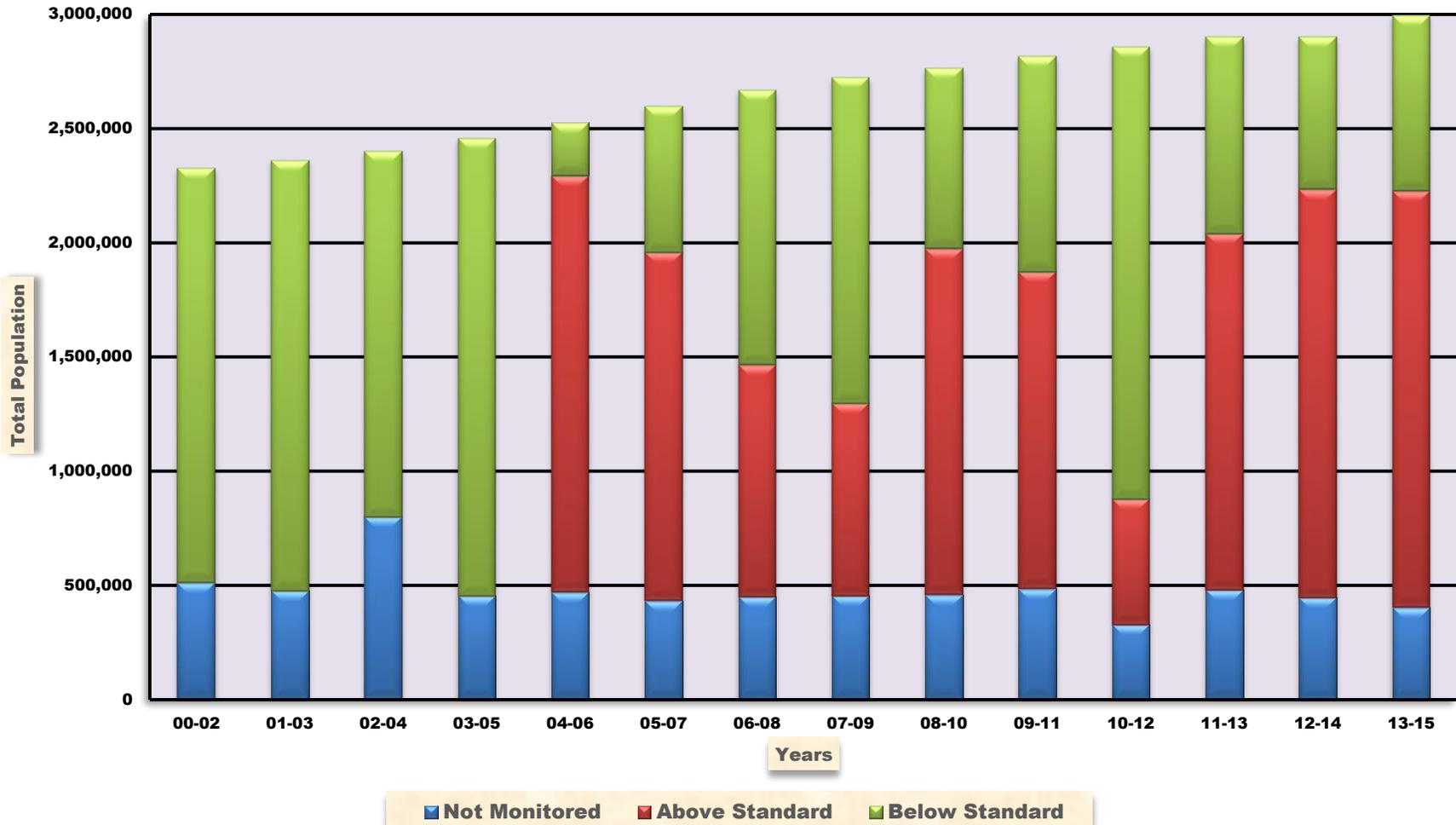
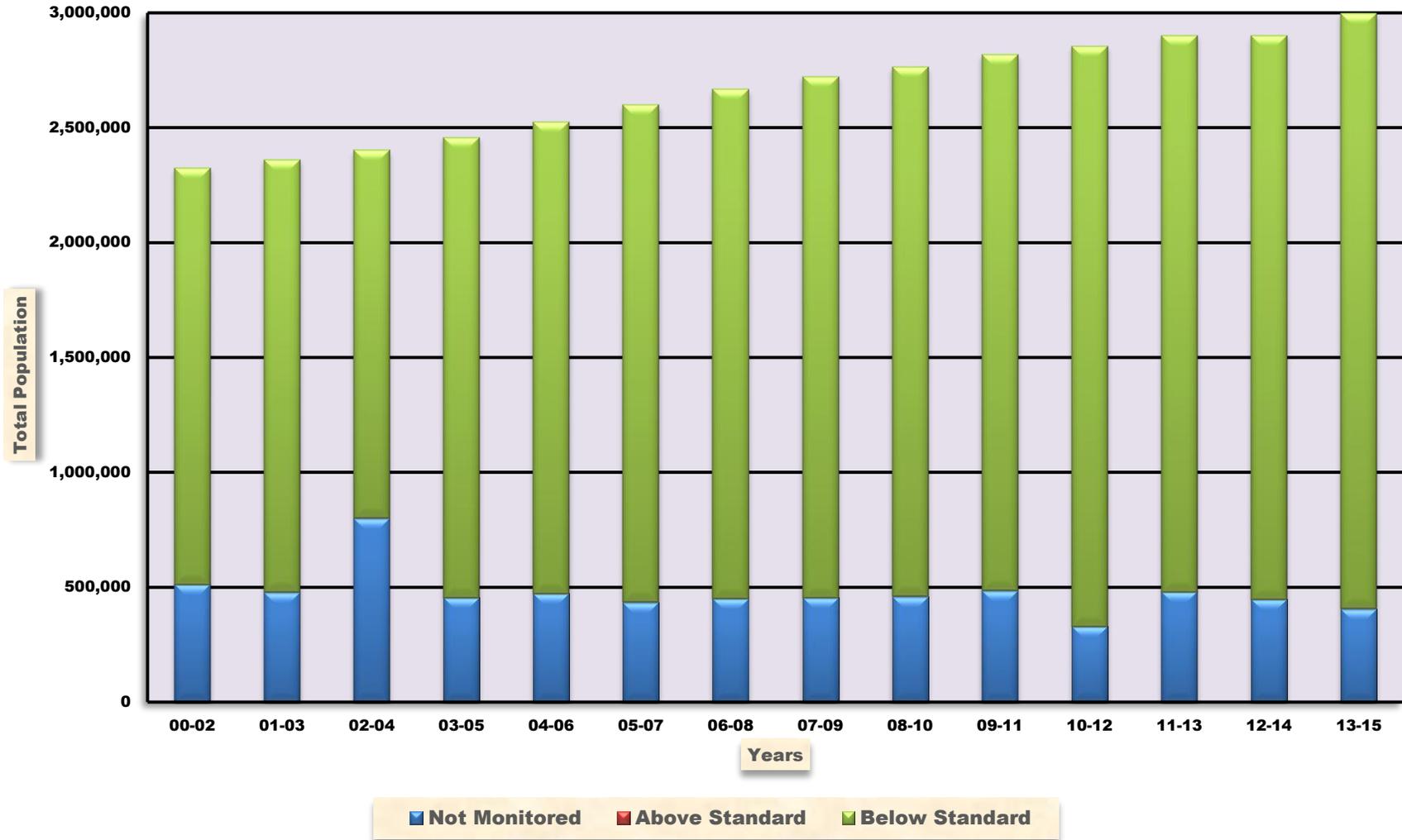


Figure UT-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Utah



# VERMONT

## Ozone

In the 2000 – 2002 time period, 0.19 million people (30.3%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.2 million people (31.6%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure VT-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.078 ppm. By 2013 – 2015 this had lowered to a value of 0.062 ppm, a reduction of 20.5 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.31 million people (50.1%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this were no people. The standard was lowered from 65 to 35 µg/m3. Figure VT-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 29 µg/m3. By 2012 – 2014 this had lowered to a value of 17 µg/m3, a reduction of 41.4 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.31 million people (50.1%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this were no people. The standard was lowered from 15 to 12 µg/m3. Figure VT-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 9.7 µg/m3. By 2012 – 2014 this had lowered to a value of 6.7 µg/m3, a reduction of 30.9 percent.

**Table VT-1**  
**2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Bennington	36,317	0.062	B	N	ND	--	ND	--	--
Chittenden	161,382	0.062	B	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>197,699</b>								
Not Monitored	428,343								
<b>Total</b>	<b>626,042</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table VT-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
<b>2000 – 2002</b>	<b>0.078</b>	<b>29</b>	<b>9.7</b>
<b>2001 – 2003</b>	<b>0.078</b>	<b>32</b>	<b>10.2</b>
<b>2002 – 2004</b>	<b>0.076</b>	<b>32</b>	<b>10.1</b>
<b>2003 – 2005</b>	<b>0.071</b>	<b>29</b>	<b>9.4</b>
<b>2004 – 2006</b>	<b>0.069</b>	<b>30</b>	<b>9.5</b>
<b>2005 – 2007</b>	<b>0.070</b>	<b>29</b>	<b>8.8</b>
<b>2006 – 2008</b>	<b>0.070</b>	<b>26</b>	<b>8.8</b>
<b>2007 – 2009</b>	<b>0.069</b>	<b>22</b>	<b>7.8</b>
<b>2008 - 2010</b>	<b>0.065</b>	<b>23</b>	<b>7.9</b>
<b>2009 – 2011</b>	<b>0.061</b>	<b>22</b>	<b>7.3</b>
<b>2010 – 2012</b>	<b>0.062</b>	<b>21</b>	<b>7.1</b>
<b>2011 – 2013</b>	<b>0.061</b>	<b>19</b>	<b>6.9</b>
<b>2012 - 2014</b>	<b>0.062</b>	<b>17</b>	<b>6.7</b>
<b>2013 - 2015</b>	<b>0.062</b>	<b>ND</b>	<b>ND</b>

# VERMONT

**Table VT-3  
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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	151,445	189,123	189,988	190,702	0	0	156,545	194,461	195,201	196,174	196,976	197,699
C	186,744	187,493	37,062	0	0	0	191,827	192,944	37,125	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>186,744</b>	<b>187,493</b>	<b>188,507</b>	<b>189,123</b>	<b>189,988</b>	<b>190,702</b>	<b>191,827</b>	<b>192,944</b>	<b>193,670</b>	<b>194,461</b>	<b>195,201</b>	<b>196,174</b>	<b>196,976</b>	<b>197,699</b>
<b>NM</b>	<b>428,698</b>	<b>430,365</b>	<b>431,413</b>	<b>432,092</b>	<b>432,904</b>	<b>432,779</b>	<b>432,324</b>	<b>431,873</b>	<b>432,071</b>	<b>431,970</b>	<b>430,810</b>	<b>430,456</b>	<b>429,586</b>	<b>428,343</b>
<b>Total</b>	<b>615,442</b>	<b>617,868</b>	<b>619,920</b>	<b>621,216</b>	<b>622,861</b>	<b>623,481</b>	<b>624,151</b>	<b>624,817</b>	<b>625,741</b>	<b>626,431</b>	<b>626,911</b>	<b>626,630</b>	<b>626,562</b>	<b>626,042</b>

## 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	2011-2013	2012-2014	2013-2015
A	308,565	213,523	214,442	189,123	37,127	37,077	191,827	192,944	193,670	194,461	195,201	256,796	257,062	0
B	0	0	0	0	234,134	216,243	62,368	61,946	61,642	61,289	60,869	0	0	0
C	0	0	0	0	18,379	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>308,565</b>	<b>213,523</b>	<b>214,442</b>	<b>189,123</b>	<b>289,640</b>	<b>253,320</b>	<b>254,195</b>	<b>254,890</b>	<b>255,312</b>	<b>255,750</b>	<b>256,070</b>	<b>256,796</b>	<b>257,062</b>	<b>0</b>
<b>NM</b>	<b>306,877</b>	<b>404,335</b>	<b>405,478</b>	<b>432,092</b>	<b>333,252</b>	<b>370,161</b>	<b>369,956</b>	<b>369,927</b>	<b>370,429</b>	<b>370,731</b>	<b>369,941</b>	<b>396,834</b>	<b>369,500</b>	<b>626,042</b>
<b>Total</b>	<b>615,442</b>	<b>617,868</b>	<b>619,920</b>	<b>621,216</b>	<b>622,861</b>	<b>623,481</b>	<b>624,151</b>	<b>624,817</b>	<b>625,741</b>	<b>626,431</b>	<b>626,911</b>	<b>626,630</b>	<b>626,562</b>	<b>626,042</b>

## 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	2011-2013	2012-2014	2013-2015
A	308,565	213,523	214,442	189,123	289,640	253,320	254,195	254,890	255,312	255,750	256,070	256,796	257,062	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Subtotal</b>	<b>308,565</b>	<b>213,523</b>	<b>214,442</b>	<b>189,123</b>	<b>289,640</b>	<b>253,320</b>	<b>254,195</b>	<b>254,890</b>	<b>255,312</b>	<b>255,750</b>	<b>256,070</b>	<b>256,796</b>	<b>257,062</b>	<b>0</b>
<b>NM</b>	<b>306,877</b>	<b>404,335</b>	<b>405,478</b>	<b>432,092</b>	<b>333,252</b>	<b>370,161</b>	<b>369,956</b>	<b>369,927</b>	<b>370,429</b>	<b>370,731</b>	<b>369,941</b>	<b>369,834</b>	<b>369,500</b>	<b>626,042</b>
<b>Total</b>	<b>615,442</b>	<b>617,868</b>	<b>619,920</b>	<b>621,216</b>	<b>622,861</b>	<b>623,481</b>	<b>624,151</b>	<b>624,817</b>	<b>625,741</b>	<b>626,431</b>	<b>626,911</b>	<b>626,630</b>	<b>626,562</b>	<b>626,042</b>

NM – Not Monitored

Figure VT-1

**People Breathing Various Air Quality Levels - 8 Hour Ozone  
Vermont**

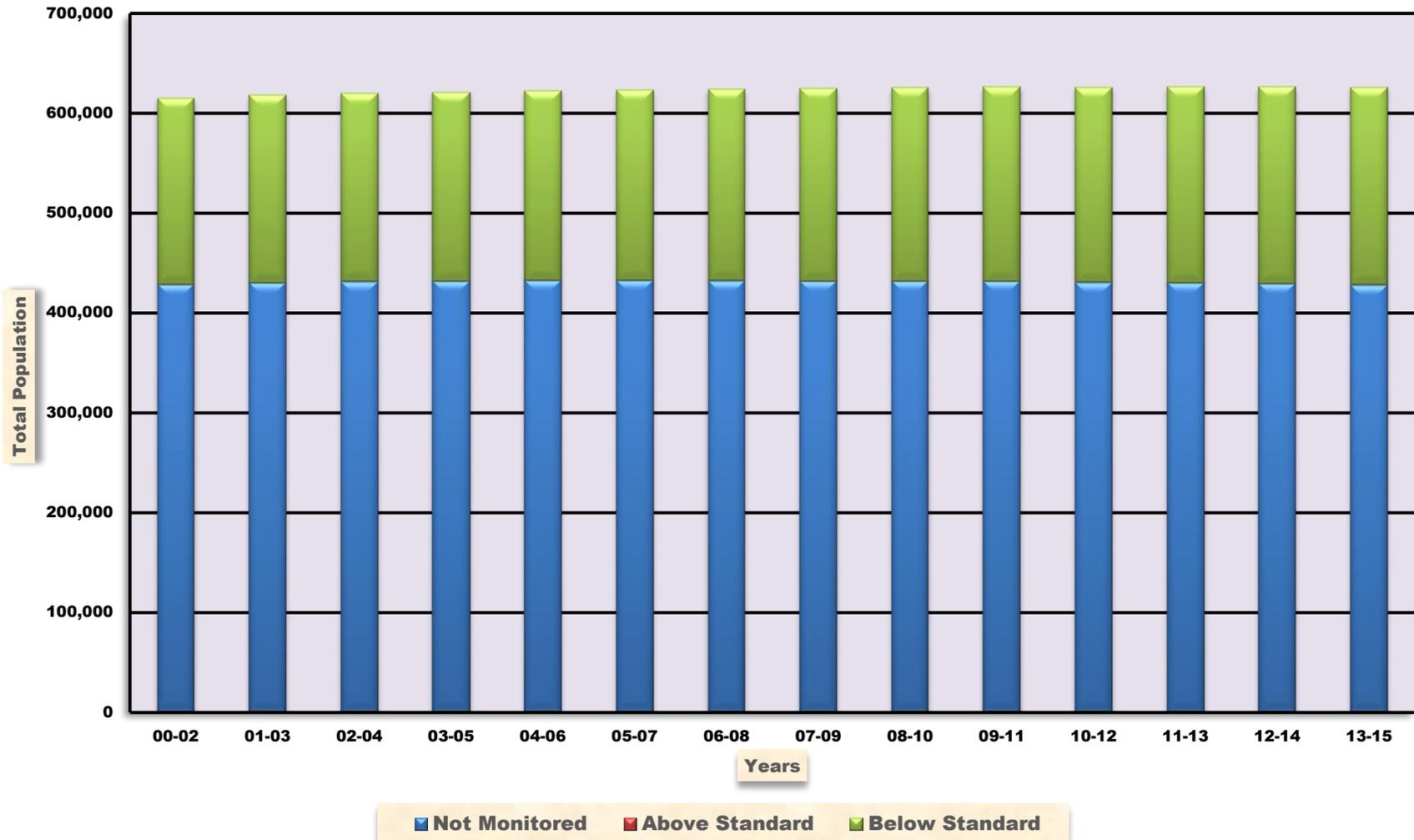


Figure VT-2

People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Vermont

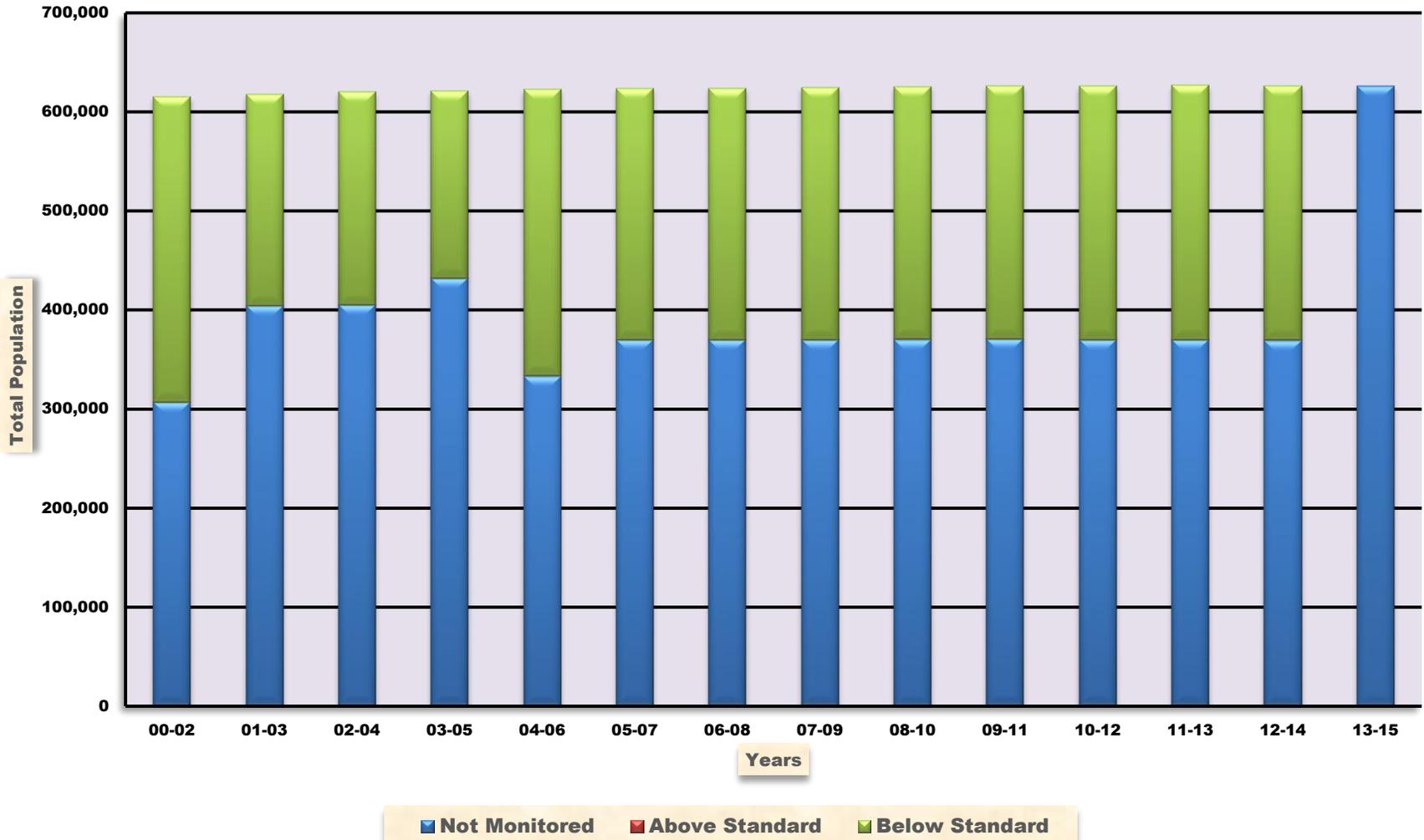
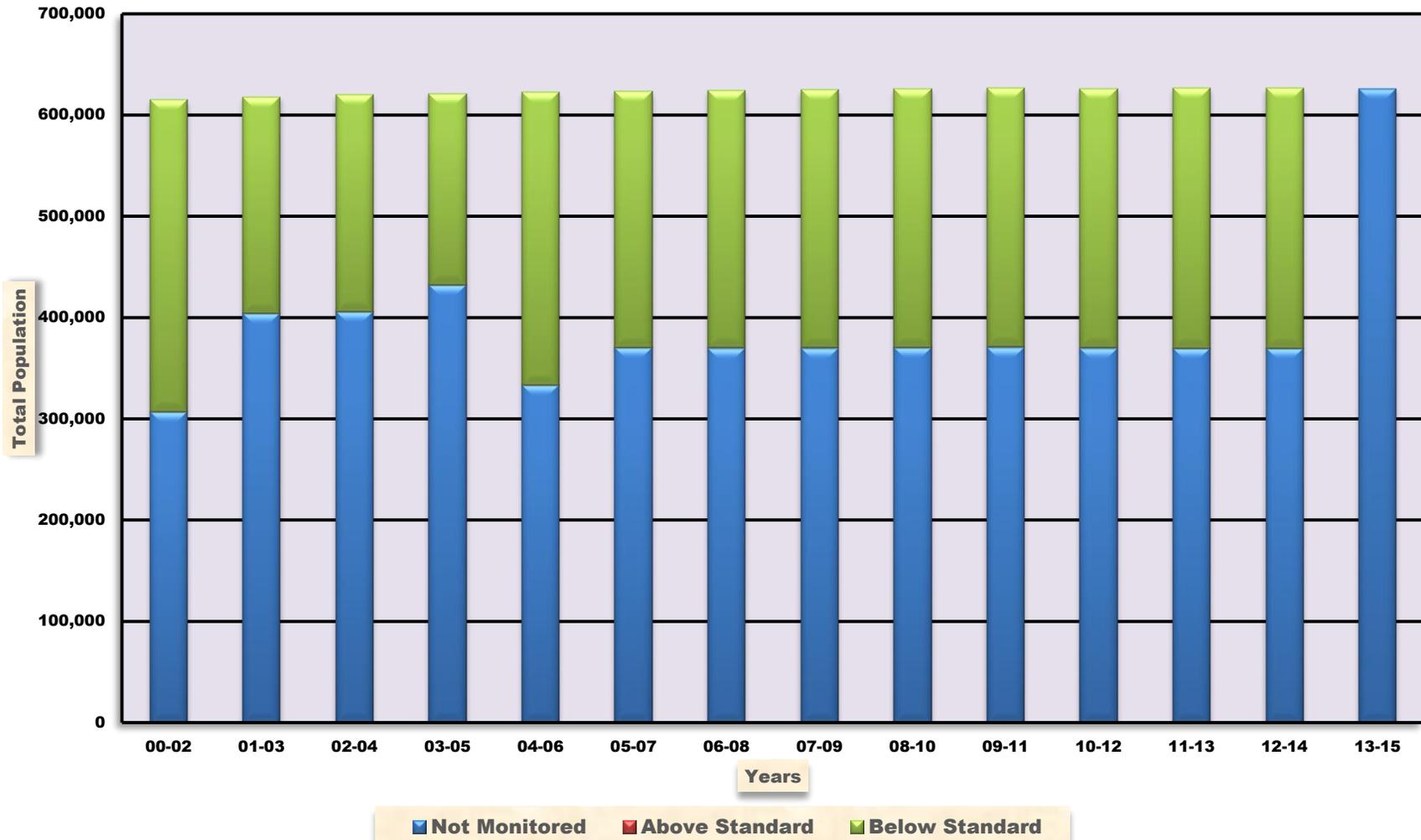


Figure VT-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Vermont



# VIRGINIA

## Ozone

In the 2000 – 2002 time period, 0.57 million people (7.8%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 3.8 million people (453.0%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure VA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.089 ppm. By 2013 – 2015 this had lowered to a value of 0.065 ppm, a reduction of 27.0 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 3.1 million people (42.9%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.5 million people (42.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure VA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 33  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 19  $\mu\text{g}/\text{m}^3$ , a reduction of 42.4 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 3.1 million people (42.3%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 3.5 million people (42.1%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure VA-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 13.6  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.2  $\mu\text{g}/\text{m}^3$ , a reduction of 39.7 percent.

# VIRGINIA

**Table VA-1  
2013 – 2015**

		OZONE			PARTICLE POLLUTION (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Albemarle	105,703	ND	--	--	17	A	7.4	A	N
Arlington	229,164	0.069	C	N	20	A	8.9	A	N
Caroline	29,984	0.062	B	N	ND	--	ND	--	--
Charles city	7,040	0.062	B	N	17	A	7.7	A	N
Chesterfield	335,687	0.062	B	N	18	A	8.3	A	N
Fairfax	1,142,234	0.068	C	N	20	A	8.2	A	N
Fauquier	68,782	0.058	B	N	ND	--	ND	--	--
Frederick	83,199	0.060	B	N	24	A	8.9	A	N
Giles	16,708	0.062	B	N	ND	--	ND	--	--
Hanover	103,227	0.063	C	N	ND	--	ND	--	--
Henrico	325,155	ND	--	--	17	A	7.9	A	N
Loudoun	375,629	0.066	B	N	20	A	8.7	A	N
Madison	13,134	0.062	B	N	ND	--	ND	--	--
Page	23,726	0.059	B	N	21	A	7.6	A	N
Prince Edward	22,952	0.060	B	N	ND	--	ND	--	--
Prince William	451,721	0.065	B	N	ND	--	ND	--	--
Roanoke	94,409	0.059	B	N	ND	--	ND	--	--
Rockbridge	22,354	0.057	B	N	ND	--	ND	--	--
Rockingham	78,593	0.058	B	N	22	A	8.5	A	N
Stafford	142,003	0.063	C	N	ND	--	ND	--	--
Wythe	29,119	0.060	B	N	ND	--	ND	--	--
Bristol City	6,618	ND	--	--	15	A	8.2	A	N
Hampton City	52,538	0.064	B	N	16	A	7.3	A	N
Lynchburg City	41,754	ND	--	--	17	A	7.4	A	N
Norfolk City	246,393	ND	--	--	18	A	7.8	A	N
Salem City	25,432,538	ND	--	--	17	A	8.5	A	N
Suffolk City	88,161	0.061	B	Y	ND	--	ND	--	--
Virginia Beach City	452,745	ND	--	--	19	A	7.9	A	N
<b>Subtotal</b>	<b>4,264,213</b>								
Not Monitored	4,062,076								
<b>Total</b>	<b>8,326,269</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table VA-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.089	33	13.6
2001 – 2003	0.090	33	13.4
2002 – 2004	0.087	32	13.3
2003 – 2005	0.081	33	13.5
2004 – 2006	0.081	32	13.3
2005 – 2007	0.081	32	13.1
2006 – 2008	0.080	29	12.1
2007 – 2009	0.075	25	11.1
2008 - 2010	0.075	22	10.2
2009 – 2011	0.075	22	9.6
2010 – 2012	0.078	22	9.4
2011 – 2013	0.073	21	8.7
2012 - 2014	0.068	20	8.4
2013 - 2015	0.065	19	8.2

# VIRGINIA

## Table VA-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	21,432	295,647	820,936	540,113	22,368	216,318	217,101	398,416	118,187	537,990	437,766	1,278,432
C	570,834	344,655	1,569,757	1,942,002	1,450,998	1,970,967	479,244	1,573,709	2,109,619	1,824,362	1,595,151	1,944,788	1,936,969	5,496,516
D	2,455,734	1,922,284	839,744	799,454	799,565	601,850	1,326,669	1,670,391	1,289,353	1,460,997	693,945	1,355,830	1,364,446	0
F	54,911	783,736	794,464	0	0	0	1,624,415	0	0	0	1,339,647	0	0	0
Subtotal	3,081,479	3,050,674	3,255,396	3,037,103	3,071,489	3,112,930	3,452,696	3,460,418	3,616,073	3,683,775	3,746,930	3,838,608	3,739,181	3,774,948
NM	4,201,894	4,316,303	4,250,279	4,540,002	4,602,237	4,638,070	4,380,800	4,466,519	4,384,951	5,412,829	4,438,937	4,421,797	4,587,100	4,608,045
Total	7,286,873	7,366,977	7,475,576	7,677,106	7,673,725	7,751,000	7,833,496	7,925,937	8,001,024	8,096,604	8,186,867	8,260,405	8,326,269	8,382,993

## 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	2011-2013	2012-2014	2013-2015
A	3,127,068	3,528,212	2,987,810	3,022,275	0	0	363,074	2,808,125	3,380,954	3,462,094	3,653,197	3,617,571	3,500,700	3,531,610
B	0	0	0	0	1,531,744	1,383,673	2,812,405	355,047	0	0	0	0	0	0
C	0	0	0	0	1,568,598	1,748,458	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,127,068	3,528,212	2,987,810	3,022,275	3,100,342	3,132,131	3,175,479	3,163,172	3,380,954	3,462,094	3,653,197	3,617,571	3,500,700	3,531,610
NM	4,159,805	4,338,765	4,487,765	4,554,830	4,573,383	4,618,869	4,658,017	4,762,765	4,620,070	4,634,510	4,532,670	4,642,834	4,825,589	4,851,383
Total	7,286,873	7,366,977	7,475,576	7,677,106	7,673,725	7,751,000	7,833,496	7,925,937	8,001,024	8,096,604	8,186,867	8,260,405	8,326,269	8,382,993

## 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	2011-2013	2012-2014	2013-2015
A	135,304	183,404	0	0	0	140,222	1,069,046	2,960,535	3,380,954	3,462,094	3,653,197	3,505,118	3,500,700	3,531,610
B	700,874	1,186,108	1,780,751	1,134,383	1,853,720	2,003,543	2,106,433	202,637	0	0	0	112,453	0	0
C	2,249,249	2,158,701	1,207,059	1,887,892	1,246,622	988,366	0	0	0	0	0	0	0	0
D	41,641	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,127,068	3,528,212	2,987,810	3,022,275	3,100,342	3,132,131	3,175,479	3,163,172	3,380,954	3,462,094	3,653,197	3,617,571	3,500,700	3,531,610
NM	4,159,805	4,338,765	4,487,765	4,554,830	4,573,383	4,618,869	4,658,017	4,762,765	4,620,070	4,634,510	4,532,670	4,642,834	4,825,589	4,851,383
Total	7,286,873	7,366,977	7,475,576	7,677,106	7,673,725	7,751,000	7,833,496	7,925,937	8,001,024	8,096,604	8,186,867	8,260,405	8,326,269	8,382,993

NM – Not Monitored

Figure VA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Virginia

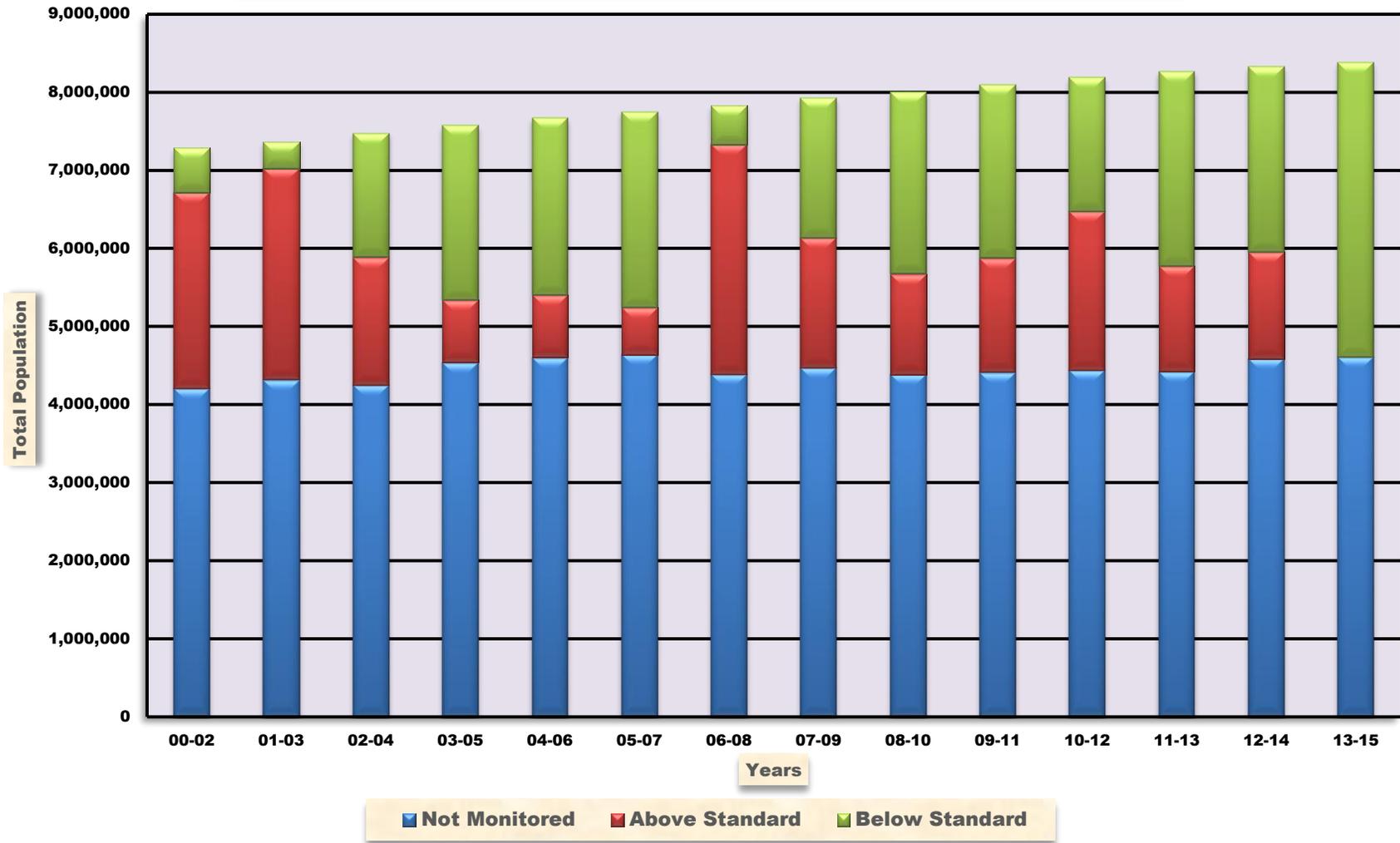


Figure VA-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 Virginia

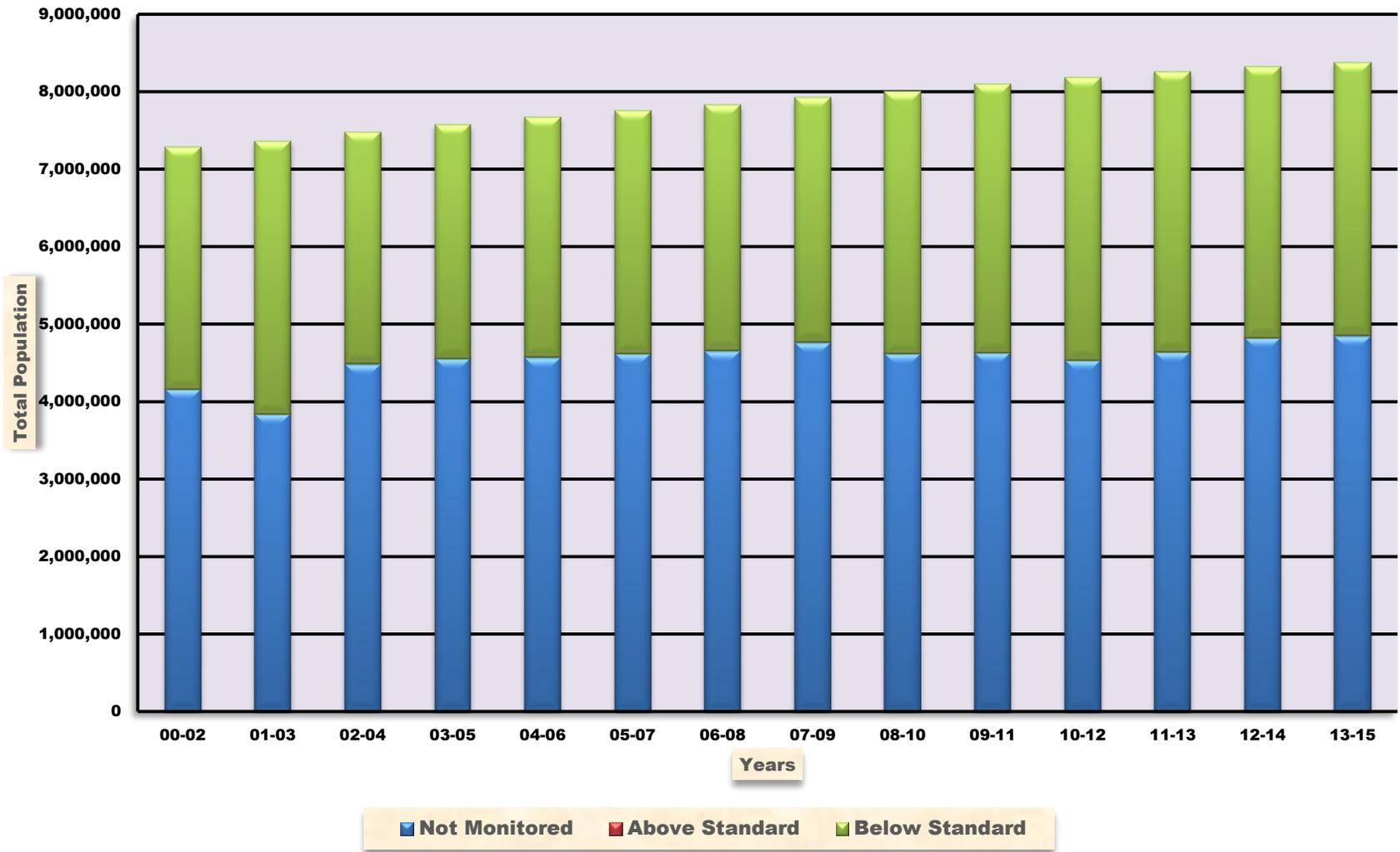
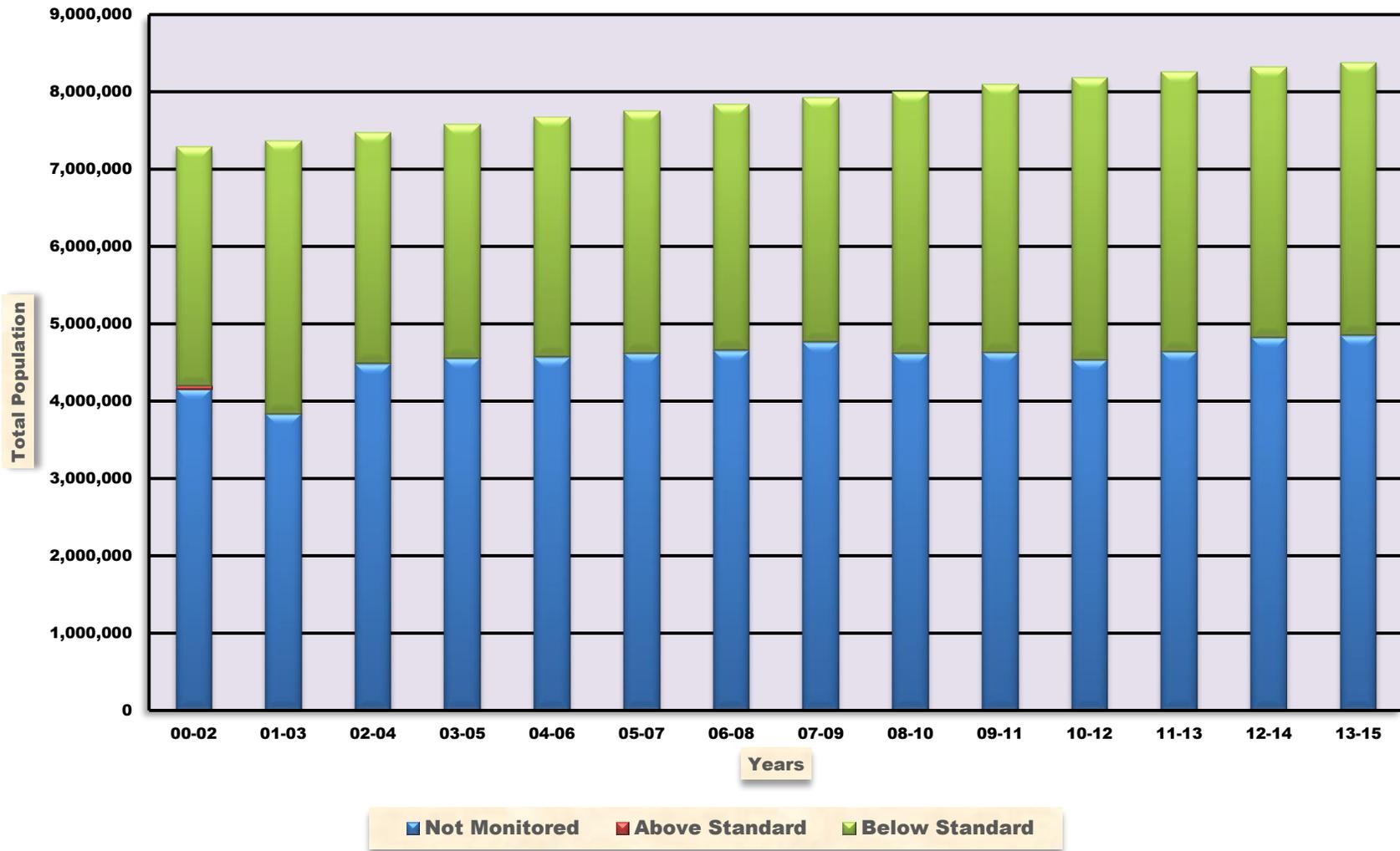


Figure VA-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Virginia



## WASHINGTON

### Ozone

In the 2000 – 2002 time period, approximately 3.9 million people (63.8%) lived in counties that met the ozone standard. In 2013 – 2015 this value was 4.6 million people (64.0%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure WA-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.058 ppm. By 2013 – 2015 this had lowered to a value of 0.056 ppm, a reduction of 3.4 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 4.7 million people (77.5%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 5.1 million people (70.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure WA-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 in 2000 - 2002 was 32  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 28.1 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 4.7 million people (77.5%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this was approximately 5.1 million people (70.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure WA-3 shows the distribution of people by year. The population weighted annual PM-2.5 in 2000 – 2002 was 9.8  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 6.8  $\mu\text{g}/\text{m}^3$ , a reduction of 30.6 percent.

**Table WA-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Clallam	73,486	0.052	A	N	ND	--	ND	--	--
Clark	459,495	0.058	B	N	ND	--	ND	--	--
King	2,117,125	0.055	A	Y	20	A	6.5	A	Y
Kitsap	260,131	ND	--	--	13	A	4.8	A	N
Pierce	843,954	0.060	B	N	29	B	7.5	A	Y
Skagit	121,846	0.045	A	Y	14	A	6.6	A	N
Snohomish	772,501	ND	--	--	27	A	6.7	A	Y
Spokane	490,945	0.061	B	Y	24	A	7.9	A	N
Thurston	269,536	0.054	A	N	ND	--	ND	--	--
Whatcom	212,284	0.045	A	N	18	A	7.0	A	N
Yakima	248,830	ND	--	--	33	C	8.1	A	N
<b>Subtotal</b>	<b>5,796,647</b>								
Not Monitored	1,373,704								
<b>Total</b>	<b>7,170,351</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table WA-2  
Population Weighted Design Values**

Period	Ozone (ppm)	24-Hour PM-2.5 (µg/m3)	Annual PM-2.5 (µg/m3)
2000 – 2002	0.058	32	9.8
2001 – 2003	0.062	31	9.3
2002 – 2004	0.063	32	9.5
2003 – 2005	0.062	31	9.8
2004 – 2006	0.064	31	9.5
2005 – 2007	0.060	34	9.4
2006 – 2008	0.060	36	9.3
2007 – 2009	0.059	32	9.3
2008 - 2010	0.059	33	8.5
2009 – 2011	0.060	24	7.1
2010 – 2012	0.055	19	6.5
2011 – 2013	0.054	24	7.7
2012 - 2014	0.056	23	7.0
2013 - 2015	0.056	23	6.8

# WASHINGTON

## Table WA-3 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	2011-2013	2012-2014	2013-2015
A	3,208,680	2,306,091	2,391,159	2,428,640	2,776,408	3,375,282	1,048,032	2,621,499	2,583,489	3,724,467	3,063,089	2,940,658	2,605,550	1,735,715
B	653,225	1,586,388	1,598,707	1,491,928	1,213,118	461,997	2,059,387	819,478	780,425	492,431	251,860	990,510	1,836,238	2,323,675
C	0	0	0	0	0	0	392,700	478,003	482,812	0	0	0	0	529,281
D	0	0	0	0	0	0	468,755	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	3,861,905	3,892,479	3,989,866	3,920,567	3,989,526	3,837,278	3,968,874	3,918,979	3,946,726	4,216,897	3,314,949	3,931,168	4,441,788	4,588,671
NM	2,190,444	2,211,636	2,188,779	2,336,738	2,881,227	2,624,309	2,593,357	2,748,447	2,777,814	2,613,141	3,672,063	3,040,238	2,619,742	2,581,680
Total	6,052,349	6,104,116	6,178,645	6,257,305	6,370,753	6,461,587	6,562,231	6,667,926	6,724,540	6,830,038	6,987,012	6,971,406	7,061,530	7,170,351

### 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	2011-2013	2012-2014	2013-2015
A	4,691,483	4,713,936	4,362,635	4,290,707	911,484	2,304,136	0	1,912,012	0	2,330,922	2,130,929	2,541,724	3,323,868	3,459,831
B	0	0	0	0	1,359,001	683,997	462,263	0	1,138,698	1,849,663	935,170	905,553	831,928	1,607,785
C	0	0	0	0	670,706	0	694,622	706,302	0	0	0	409,872	247,687	0
D	0	0	0	0	0	0	0	239,604	1,038,456	0	0	0	0	0
F	0	0	0	0	763,408	772,484	785,400	796,483	0	0	0	0	0	0
Subtotal	4,691,483	4,713,936	4,362,635	4,290,707	3,704,598	3,760,617	1,942,285	3,654,401	2,177,154	4,180,585	3,066,098	3,857,149	4,403,483	5,067,616
NM	1,360,866	1,390,179	1,816,010	1,966,598	2,666,160	2,700,910	4,619,946	3,013,025	4,547,386	2,649,453	3,920,914	3,114,257	2,658,047	2,102,735
Total	6,052,349	6,104,116	6,178,645	6,257,305	6,370,753	6,461,587	6,562,231	6,667,926	6,724,540	6,830,038	6,987,012	6,971,406	7,061,530	7,170,351

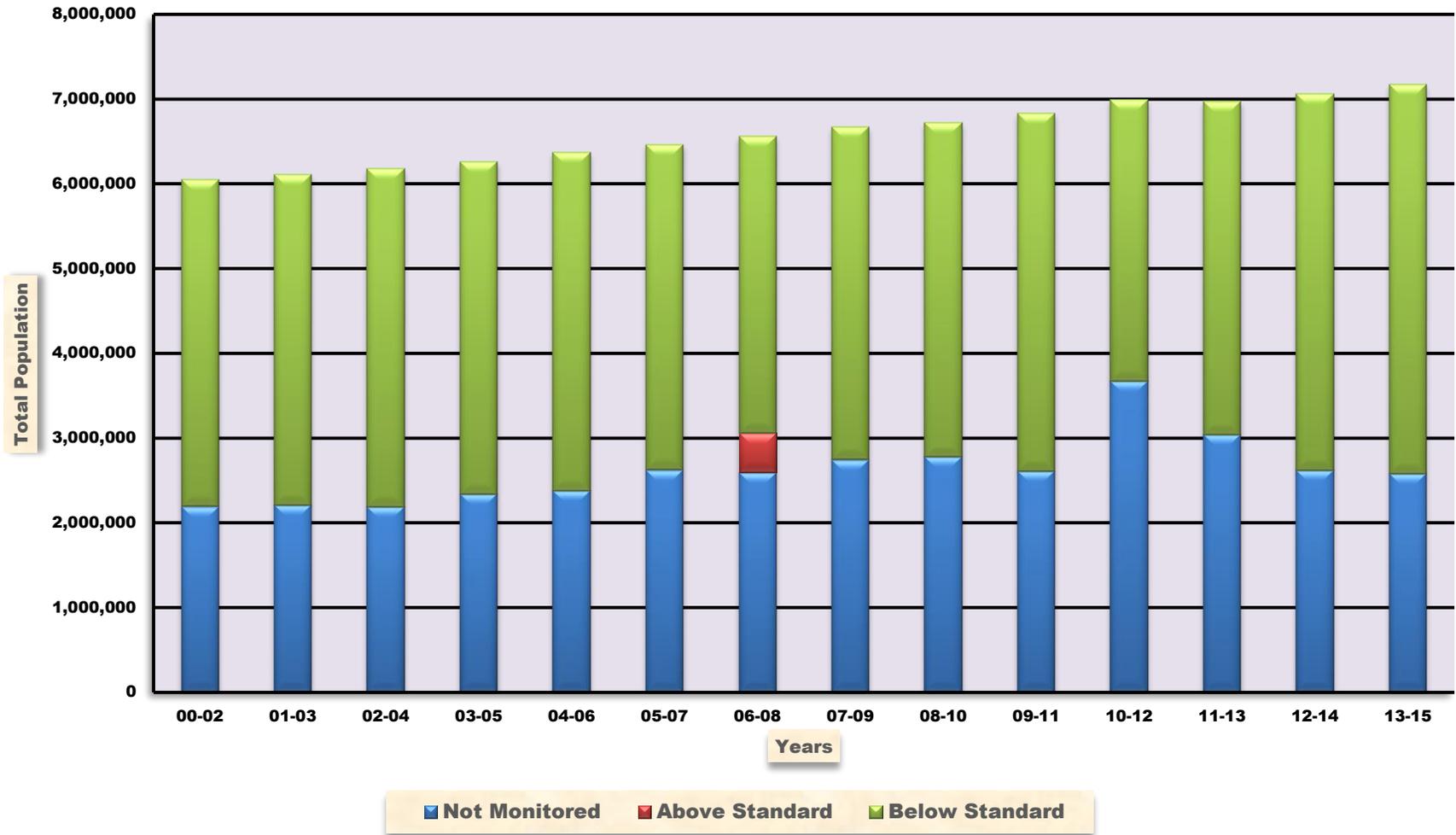
### People Breathing Year Round Particle Pollution (Annual PM-2.5)

Grade	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015
A	4,691,483	4,713,936	4,362,635	4,290,707	3,704,598	3,760,617	1,942,285	3,654,401	2,177,154	4,180,585	3,066,098	3,175,666	4,403,483	5,067,616
B	0	0	0	0	0	0	0	0	0	0	0	681,483	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	4,691,483	4,713,936	4,362,635	4,290,707	3,704,598	3,760,617	1,942,285	3,654,401	2,177,154	4,180,585	3,066,098	3,857,149	4,403,483	5,067,616
NM	1,360,866	1,390,179	1,816,010	1,966,598	2,666,160	2,700,470	4,619,946	3,043,025	4,547,386	2,649,453	3,920,914	2,114,257	2,658,047	2,102,735
Total	6,052,349	6,104,116	6,178,645	6,257,305	6,370,753	6,461,587	6,562,631	6,667,926	6,724,540	6,830,038	6,987,012	6,971,406	7,061,530	7,170,351

NM – Not Monitored

Figure WA-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Washington



**Figure WA-2**

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Washington**

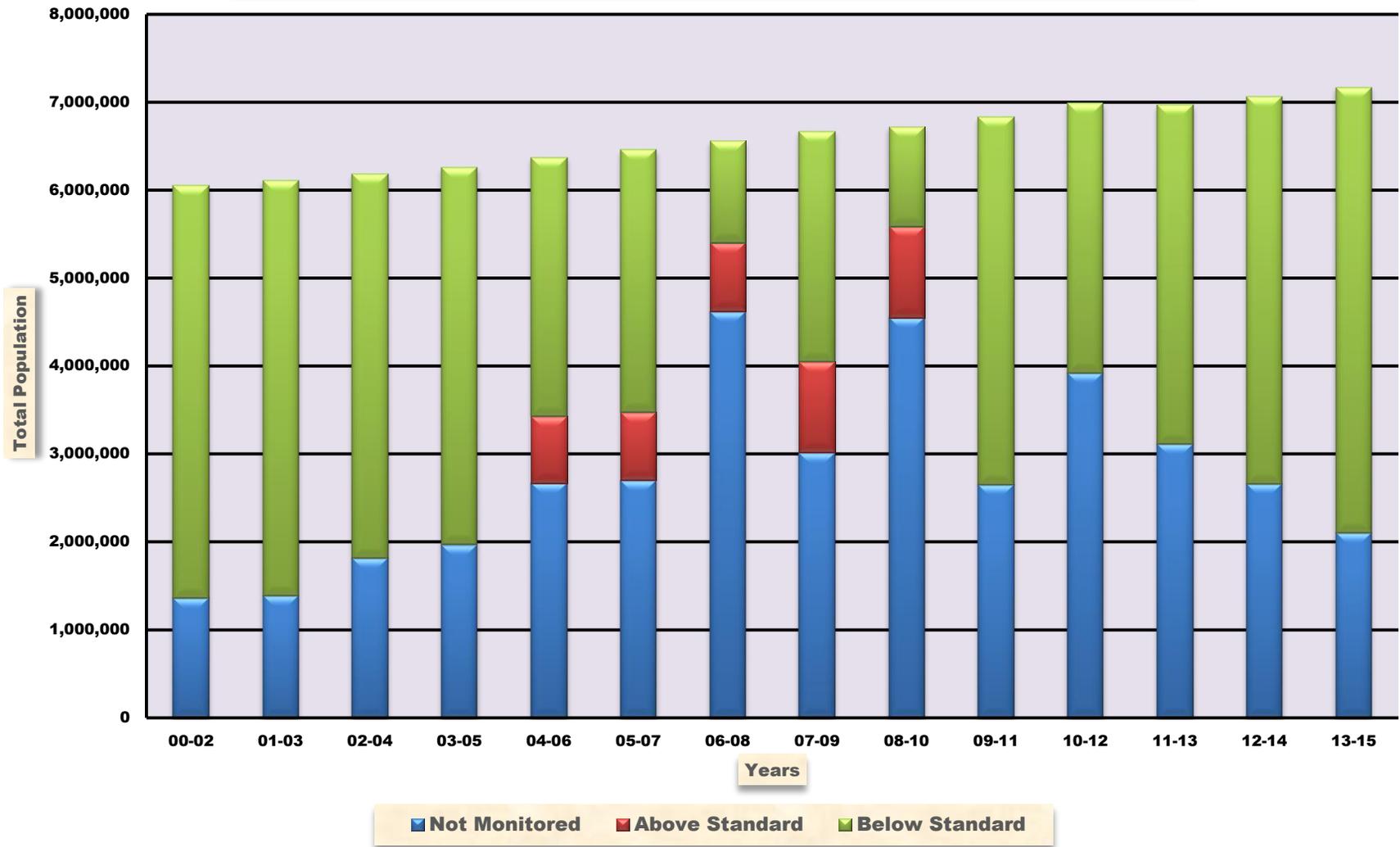
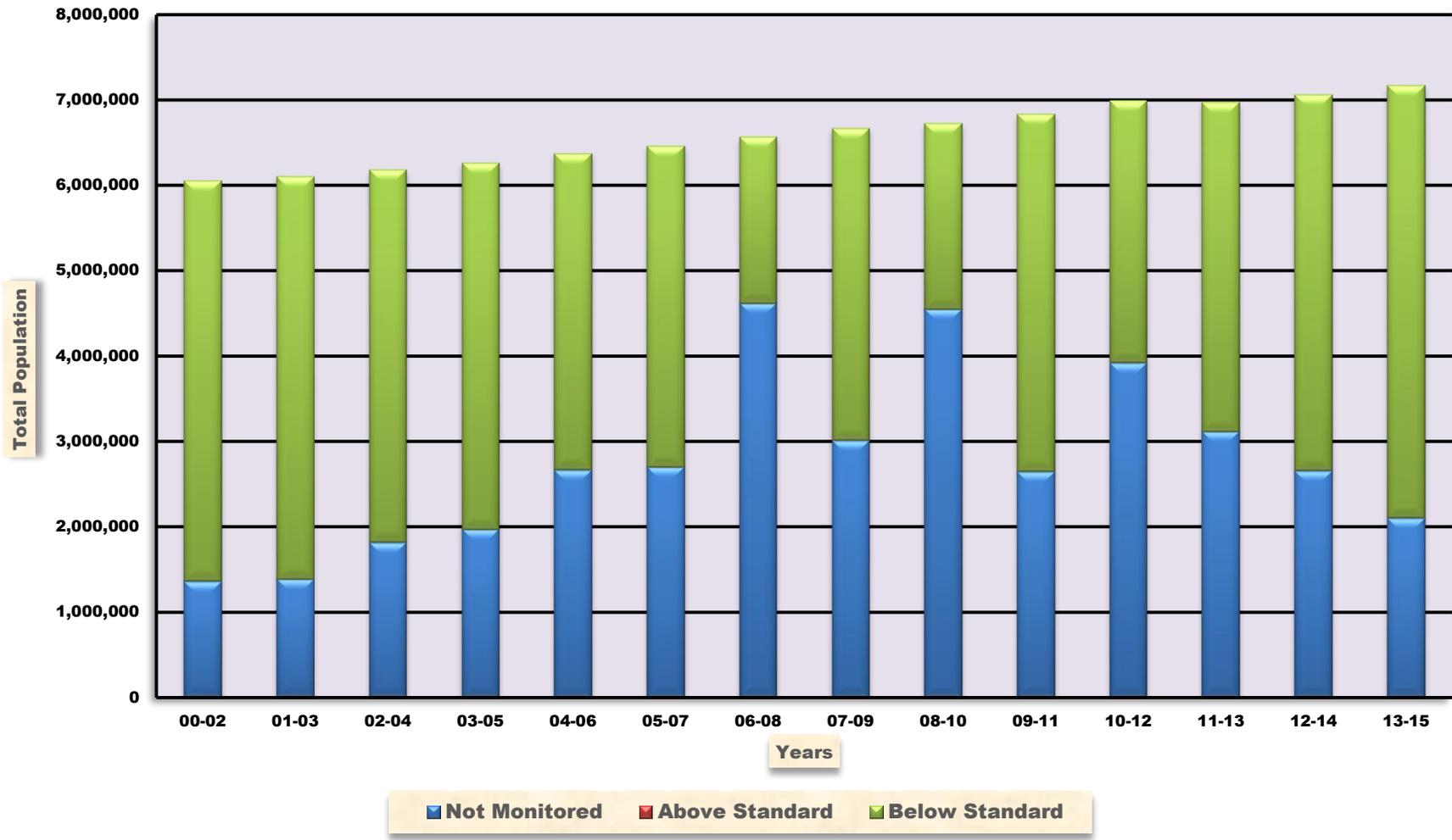


Figure WA-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Washington



## WEST VIRGINIA

### Ozone

In the 2000 – 2002 time period, 0.39 million people (21.8%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.68 million people (37.0%). The remainder of the population lived in counties where ozone was not measured. The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure WV-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.085 ppm. By 2013 – 2015 this had lowered to a value of 0.065 ppm, a reduction of 23.5 percent.

### 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 1.0 million people (53.3%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.8 million people (44.0%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m<sup>3</sup>. Figure WV-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 39 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 21 µg/m<sup>3</sup>, a reduction of 46.2 percent.

### Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.3 million people (17.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 0.8 million people (44.0%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m<sup>3</sup>. Figure WV-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 15.9 µg/m<sup>3</sup>. By 2013 – 2015 this had lowered to a value of 9.4 µg/m<sup>3</sup>, a reduction of 40.9 percent.

**Table WV-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Berkeley	111,901	0.060	C	N	27	A	10.3	B	N
Brooke	23,350	ND	--	--	25	A	10.7	B	Y
Cabell	96,844	0.062	B	N	21	A	9.1	A	N
Gilmer	8,518	0.057	B	N	ND	--	ND	--	--
Greenbrier	35,516	0.059	B	N	ND	--	ND	--	--
Harrison	68,714	ND	--	--	19	A	8.8	A	N
Kanawha	188,332	0.067	C	N	19	A	9.1	A	Y
Marion	56,925	ND	--	--	18	A	9.4	A	N
Marshall	31,978	ND	--	--	23	A	10.7	B	N
Monongalia	104,236	0.065	C	N	19	A	8.6	A	N
Ohio	43,066	0.066	C	N	23	A	10.2	B	N
Tucker	6,966	0.060	B	N	ND	--	ND	--	--
Wood	86,452	0.067	C	N	21	A	9.4	A	N
<b>Subtotal</b>	<b>862,798</b>								
Not Monitored	981,130								
<b>Total</b>	<b>1,844,128</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table WV-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.085	39	15.9
2001 – 2003	0.085	38	15.3
2002 – 2004	0.080	36	14.8
2003 – 2005	0.076	35	15.3
2004 – 2006	0.075	34	14.8
2005 – 2007	0.079	35	15.3
2006 – 2008	0.077	33	14.3
2007 – 2009	0.072	29	13.3
2008 - 2010	0.069	27	12.4
2009 – 2011	0.069	26	11.7
2010 – 2012	0.072	25	11.2
2011 – 2013	0.069	22	10.1
2012 - 2014	0.067	21	9.7
2013 - 2015	0.065	21	9.4

# WEST VIRGINIA

## Table WV-3 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	2011-2013	2012-2014	2013-2015
A	0	0	0	0	0	0	0	0	0	0	0	0	8,618	0
B	0	0	122,039	387,002	540,333	134,486	0	0	131,799	219,573	35,820	159,990	396,774	147,844
C	393,703	120,814	542,777	280,697	131,477	540,267	229,286	683,480	555,496	471,410	657,664	551,269	306,576	533,987
D	183,349	540,874	0	0	0	0	449,677	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	577,052	661,608	664,816	667,699	671,810	674,753	678,963	683,480	687,295	690,983	693,484	711,259	711,964	681,831
NM	1,228,362	1,150,608	1,151,622	1,152,793	1,156,102	1,159,299	1,161,347	1,164,295	1,165,699	1,164,381	1,161,929	1,143,045	1,138,362	1,162,297
Total	1,806,414	1,812,295	1,816,438	1,820,492	1,827,912	1,834,052	1,840,310	1,847,776	1,852,994	1,855,364	1,855,413	1,854,304	1,850,326	1,844,128

### 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	2011-2013	2012-2014	2013-2015
A	962,003	964,956	966,242	893,902	0	0	0	147,478	537,859	678,419	710,118	920,844	842,479	811,798
B	0	0	0	0	123,103	78,323	292,918	610,348	375,509	169,121	139,772	0	0	0
C	0	0	0	0	654,344	301,814	459,788	139,400	0	0	0	0	0	0
D	0	0	0	0	64,318	476,784	139,093	12,077	0	0	0	0	0	0
F	0	0	0	0	55,665	43,005	12,084	0	0	0	0	0	0	0
Subtotal	962,003	964,956	966,242	893,902	897,430	899,925	903,883	909,302	913,367	847,540	849,890	920,844	842,479	811,798
NM	843,411	847,339	850,246	926,590	930,482	934,127	936,427	938,473	939,627	1,007,824	1,005,523	933,460	1,007,847	1,032,330
Total	1,806,414	1,812,295	1,816,438	1,820,492	1,827,912	1,834,052	1,840,310	1,847,776	1,852,994	1,855,364	1,855,413	1,854,304	1,850,326	1,844,128

### 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	2011-2013	2012-2014	2013-2015
A	14,123	14,106	13,997	0	0	0	0	78,782	340,679	454,380	793,363	250,097	172,224	507,337
B	62,016	140,375	140,122	78,341	142,496	78,323	146,820	367,655	560,654	393,161	56,527	518,932	626,074	292,786
C	230,738	153,690	354,064	257,594	357,138	203,418	553,563	462,865	12,035	0	0	151,834	44,181	11,675
D	230,599	418,779	426,459	514,106	397,796	426,948	203,500	0	0	0	0	0	0	0
F	424,527	238,006	31,600	43,862	0	191,236	0	0	0	0	0	0	0	0
Subtotal	962,003	964,956	966,242	893,902	897,430	899,925	903,883	909,302	913,367	847,540	849,890	920,844	842,479	811,798
NM	843,411	847,339	850,246	926,590	930,482	934,127	936,427	938,473	939,627	1,007,824	1,005,523	933,460	1,007,847	1,032,330
Total	1,803,414	1,812,295	1,816,438	1,820,492	1,827,912	1,834,052	1,840,310	1,847,776	1,852,994	1,855,364	1,855,413	1,854,304	1,850,326	1,844,128

NM – Not Monitored

Figure WV-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone West Virginia

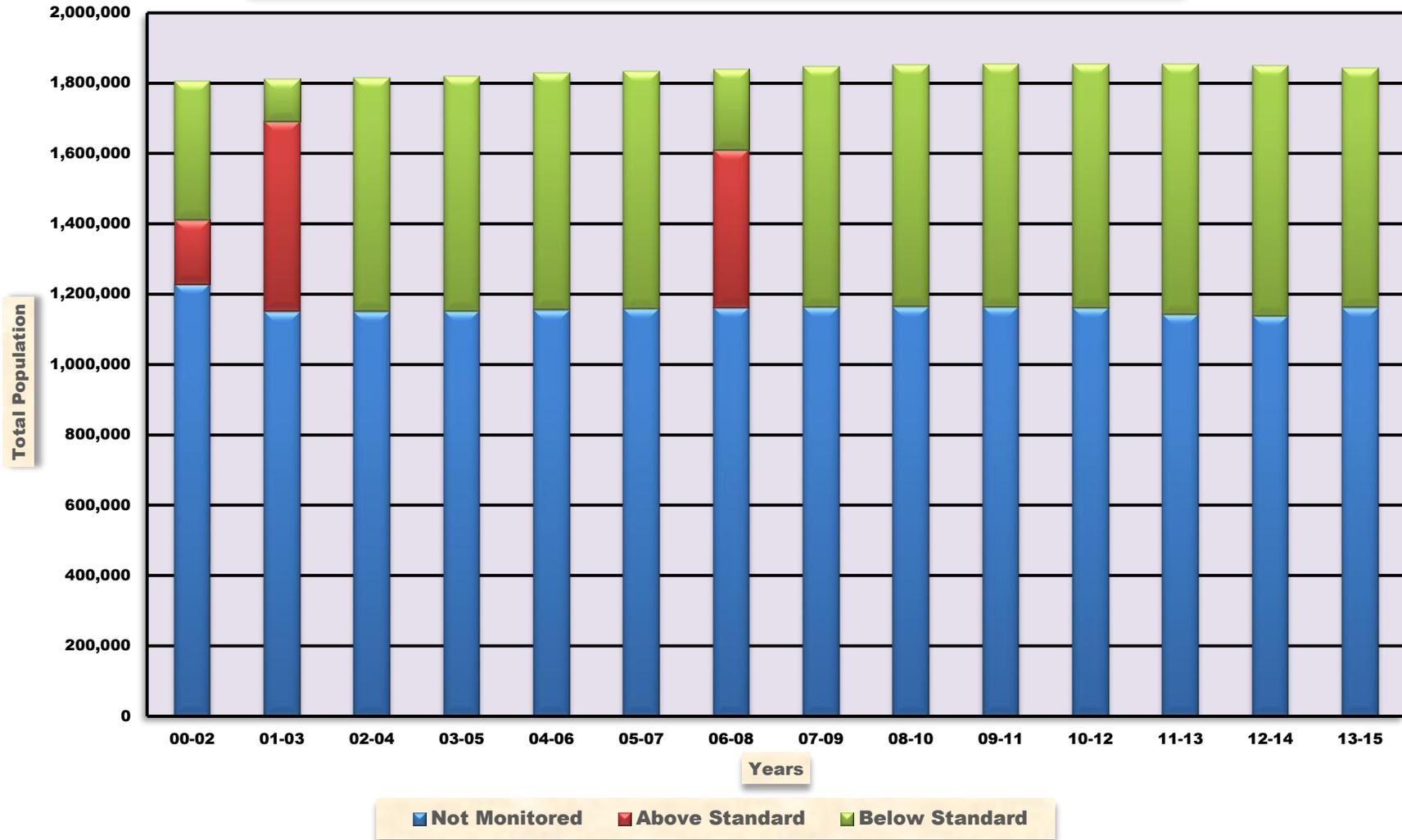


Figure WV-2

### People Breathing Various Air Quality Levels - 24 Hour PM-2.5 West Virginia

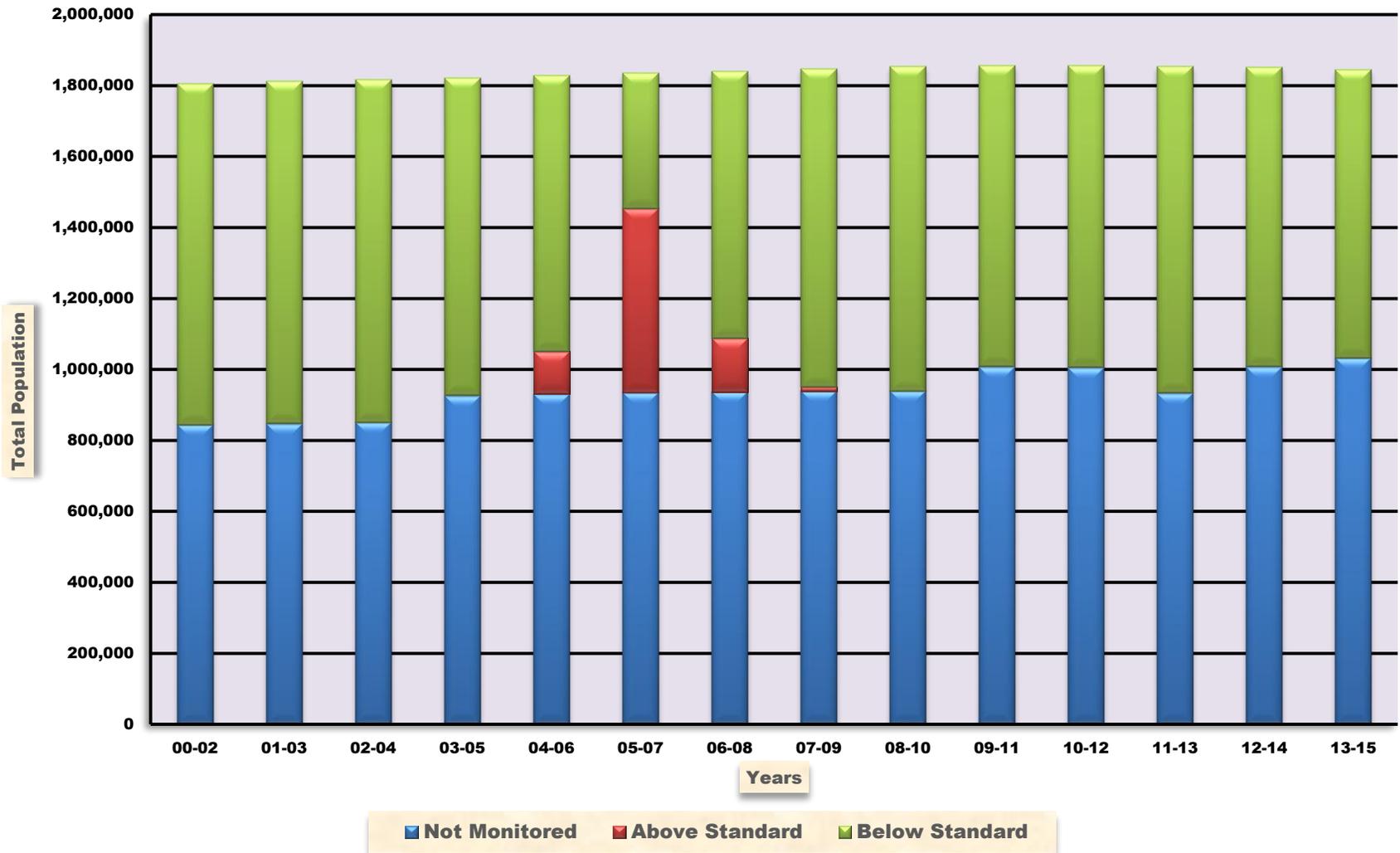
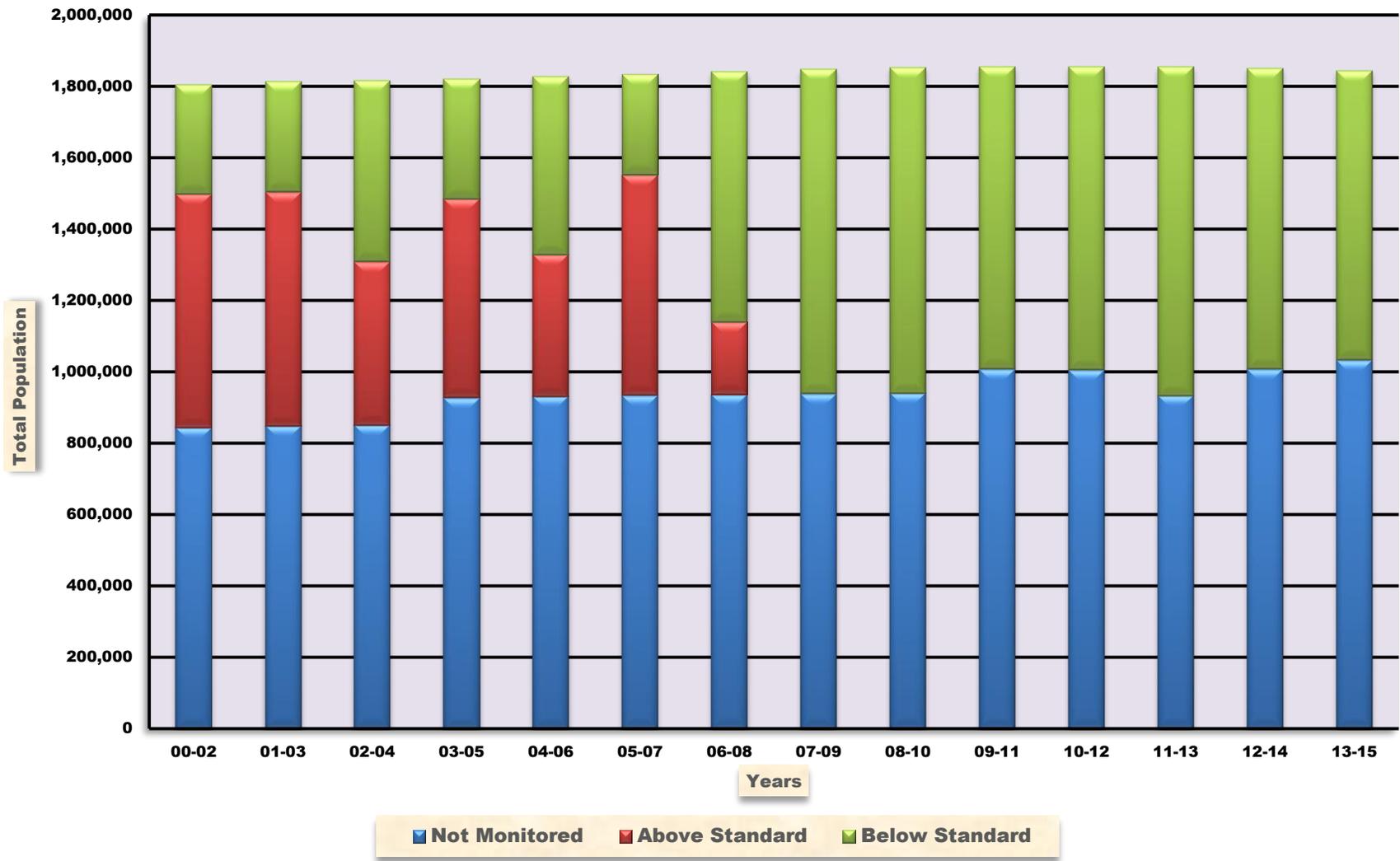


Figure WV-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 West Virginia



# WISCONSIN

## Ozone

In the 2000 – 2002 time period, approximately 3.0 million people (54.9%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 3.4 million people (58.2%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure WI-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.081 ppm. By 2013 – 2015 this had lowered to a value of 0.066 ppm, a reduction of 18.5 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 2.8 million people (51.0%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 3.0 million people (51.3%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35  $\mu\text{g}/\text{m}^3$ . Figure WI-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 33  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 23  $\mu\text{g}/\text{m}^3$ , a reduction of 30.3 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 2.8 million people (51.0%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 3.0 million people (51.3%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12  $\mu\text{g}/\text{m}^3$ . Figure WI-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 12.0  $\mu\text{g}/\text{m}^3$ . By 2013 – 2015 this had lowered to a value of 8.8  $\mu\text{g}/\text{m}^3$ , a reduction of 26.7 percent.

# WISCONSIN

**Table WI-1  
2013 – 2015**

		Ozone			Particle Pollution (PM-2.5)				
County	Population	Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Ashland	15,843	0.057	B	N	16	A	5.1	A	N
Brown	258,718	0.065	C	N	23	A	8.2	A	N
Columbia	56,743	0.066	C	N	ND	--	ND	--	--
Dane	523,643	0.065	C	N	22	A	8.8	A	Y
Dodge	68,502	0.068	C	N	21	A	8.0	A	N
Door	27,554	0.069	C	N	ND	--	ND	--	--
Eau Claire	102,105	0.060	B	N	19	A	7.5	A	N
Fond du Lac	101,973	0.065	C	N	ND	--	ND	--	--
Forest	9,057	0.061	B	N	17	A	5.2	A	N
Grant	52,250	ND	--	--	21	A	8.3	A	N
Jefferson	84,559	0.068	C	N	ND	--	ND	--	--
<b>Kenosha</b>	<b>168,437</b>	<b>0.075</b>	<b>D</b>	N	22	A	8.5	A	N
Kewaunee	20,366	0.067	C	N	ND	--	ND	--	--
La Crosse	118,212	0.061	B	N	20	A	8.0	A	N
<b>Manitowoc</b>	<b>79,806</b>	<b>0.072</b>	<b>D</b>	N	ND	--	ND	--	--
Marathon	135,868	0.063	C	N	ND	--	ND	--	--
Milwaukee	957,735	0.065	C	Y	24	A	9.2	A	Y
Outagamie	183,245	0.067	C	N	22	A	8.0	A	N
Ozaukee	87,850	0.069	C	Y	19	A	7.9	A	N
Sauk	63,642	0.063	C	N	18	A	7.2	A	N
<b>Sheboygan</b>	<b>115,569</b>	<b>0.077</b>	<b>D</b>	N	ND	--	ND	--	--
Taylor	20,455	0.060	B	N	16	A	6.5	A	N
Vilas	21,387	0.060	B	N	ND	--	ND	--	--
Walworth	102,804	0.068	C	N	ND	--	ND	--	--
Waukesha	396,488	0.063	C	N	24	A	9.8	B	N
<b>Subtotal</b>	<b>3,772,811</b>								
Not Monitored	1,998,526								
<b>Total</b>	<b>5,771,337</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table WI-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.081	33	12.0
2001 – 2003	0.083	34	12.3
2002 – 2004	0.077	33	11.7
2003 – 2005	0.078	34	12.0
2004 – 2006	0.074	35	12.2
2005 – 2007	0.076	36	12.9
2006 – 2008	0.070	33	12.7
2007 – 2009	0.069	33	12.2
2008 - 2010	0.065	32	11.2
2009 – 2011	0.067	30	10.6
2010 – 2012	0.072	27	10.1
2011 – 2013	0.071	24	9.6
2012 - 2014	0.071	24	9.0
2013 - 2015	0.066	23	8.8

# WISCONSIN

## Table WI-3 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	2011-2013	2012-2014	2013-2015
A	0	0	63,994	4,825	106,646	0	0	0	0	0	0	0	16,103	0
B	1,508,012	695,530	2,583,456	2,227,600	2,476,783	2,666,622	1,216,721	1,461,479	2,899,278	3,143,705	838,654	852,550	864,917	606,304
C	1,490,921	2,114,014	906,402	734,703	1,163,683	1,084,878	2,476,918	2,256,795	1,051,898	330,365	2,285,314	2,338,726	2,199,539	2,750,445
D	884,519	212,257	865,407	758,001	142,942	225,007	308,311	308,983	115,507	363,418	410,732	486,979	645,895	363,812
F	159,229	1,048,332	157,968	0	0	0	0	0	0	0	282,945	114,922	0	0
Subtotal	4,042,680	4,070,133	4,577,226	3,725,728	3,890,050	3,976,507	4,001,950	4,027,257	4,066,682	3,837,488	3,817,645	3,793,177	3,726,454	3,720,561
NM	1,402,482	1,409,070	936,800	1,820,438	1,687,605	1,634,268	1,639,046	2,642,007	2,620,304	1,874,279	1,908,753	1,949,536	2,031,110	2,050,776
Total	5,445,162	5,479,203	5,514,026	5,546,166	5,577,655	5,610,776	5,640,996	5,669,264	5,686,986	5,711,767	5,726,398	5,742,713	5,757,564	5,771,337

## 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	2011-2013	2012-2014	2013-2015
A	2,778,717	2,558,676	2,571,370	2,762,014	58,866	150,016	259,427	25,524	25,461	410,003	1,193,057	2,635,375	3,002,022	2,958,332
B	0	0	0	0	226,811	408,173	761,363	444,524	1,125,414	2,028,574	1,412,884	0	0	0
C	0	0	0	0	1,123,364	679,878	1,333,691	1,815,560	1,813,536	568,923	0	0	0	0
D	0	0	0	0	993,095	900,626	560,851	754,134	0	0	0	0	0	0
F	0	0	0	0	372,105	745,162	0	0	0	0	0	0	0	0
Subtotal	2,778,717	2,558,676	2,571,370	2,762,014	2,774,241	2,883,855	2,915,332	3,039,742	2,964,411	3,007,500	2,608,940	2,635,375	3,002,022	2,958,332
NM	2,667,445	2,920,532	2,942,656	2,784,152	2,803,414	2,726,921	2,725,664	2,629,522	2,722,575	2,704,267	3,117,458	3,107,338	2,755,542	2,813,005
Total	5,445,162	5,479,203	5,514,026	5,546,166	5,577,655	5,610,776	5,640,996	5,669,264	5,686,986	5,711,767	5,726,398	5,742,713	5,757,564	5,771,337

## 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	2011-2013	2012-2014	2013-2015
A	1,461,454	797,861	1,445,596	991,541	998,161	797,155	440,718	556,298	2,574,520	2,918,839	2,608,940	1,094,244	1,889,600	2,322,410
B	914,469	1,760,815	1,125,774	1,391,588	1,590,027	771,008	1,340,121	1,905,953	389,891	88,661	0	1,147,288	1,112,423	635,922
C	402,795	0	0	378,885	186,053	1,315,692	1,134,493	577,491	0	0	0	393,843	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	2,778,717	2,558,676	2,571,370	2,762,014	2,774,241	2,883,855	2,915,332	3,039,742	2,964,411	3,007,500	2,608,740	2,635,375	3,002,022	2,958,332
NM	2,667,445	2,920,532	2,942,656	2,781,152	2,803,414	2,726,921	2,725,664	2,629,522	2,722,575	2,704,267	3,117,458	3,107,338	2,755,542	2,813,005
Total	5,445,162	5,479,203	5,514,026	5,546,166	5,577,655	5,610,776	5,640,996	5,669,264	5,686,986	5,711,767	5,726,398	5,742,713	5,757,564	5,771,337

NM – Not Monitored

Figure WI-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Wisconsin

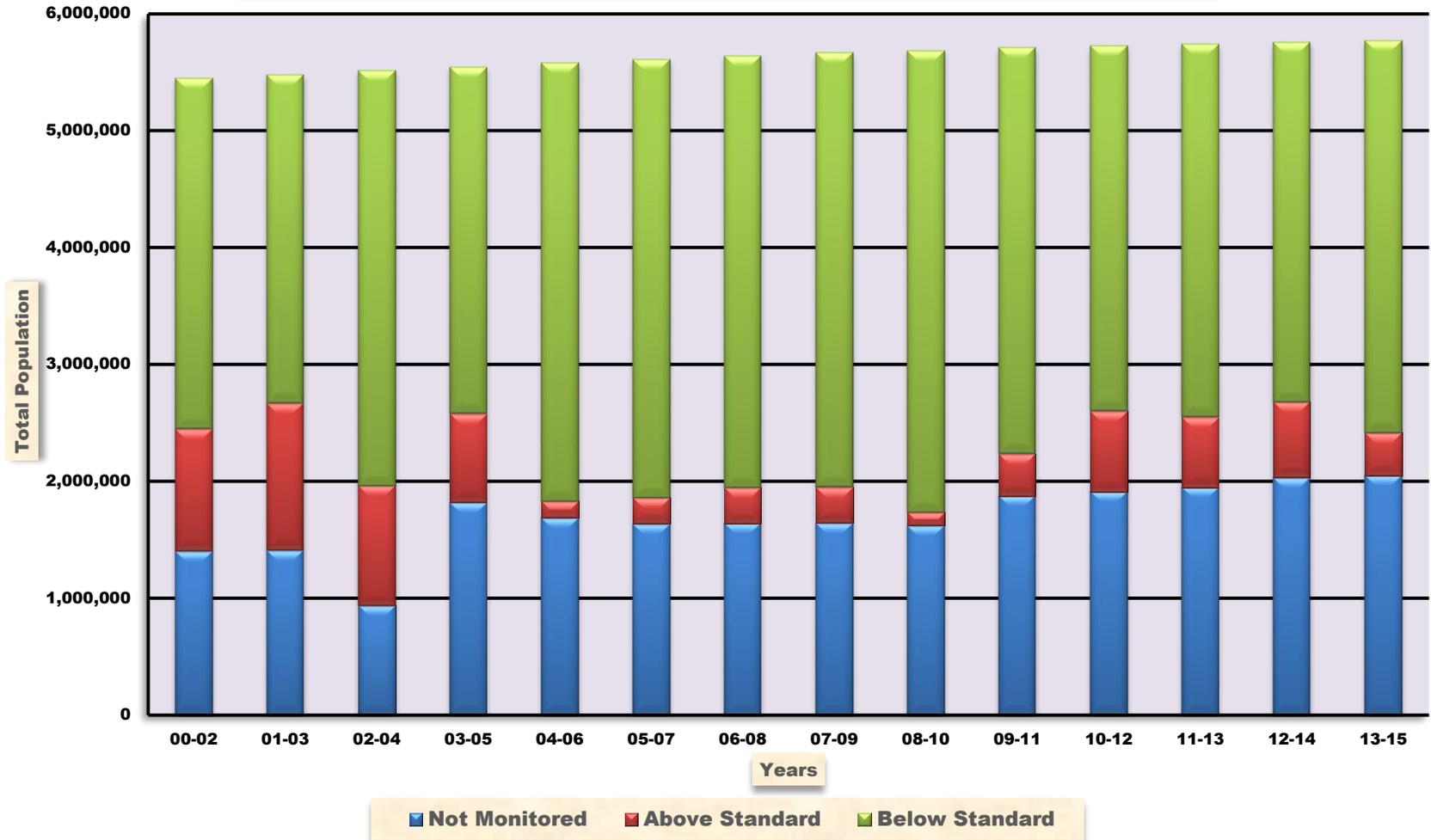


Figure WI-2

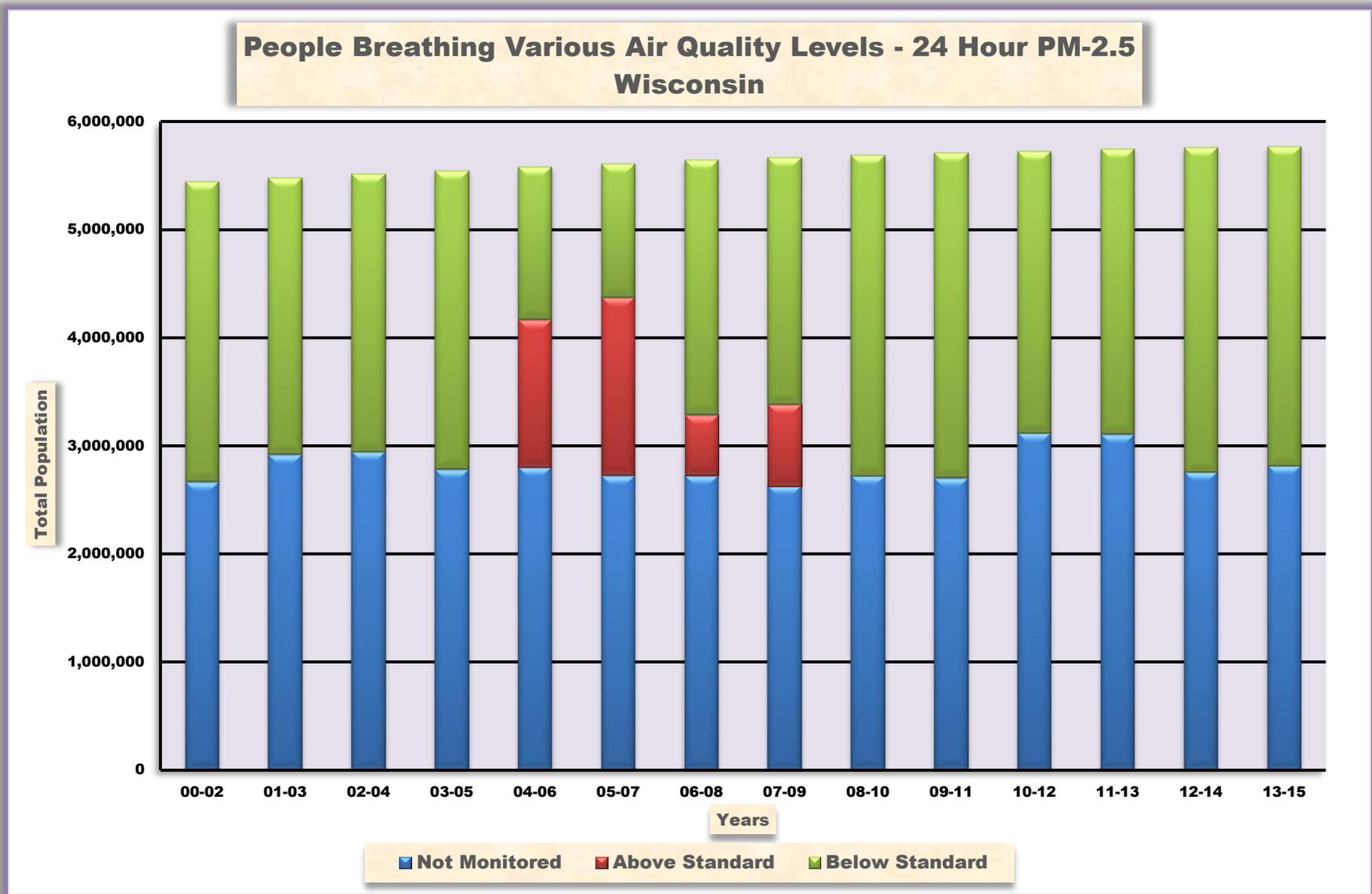
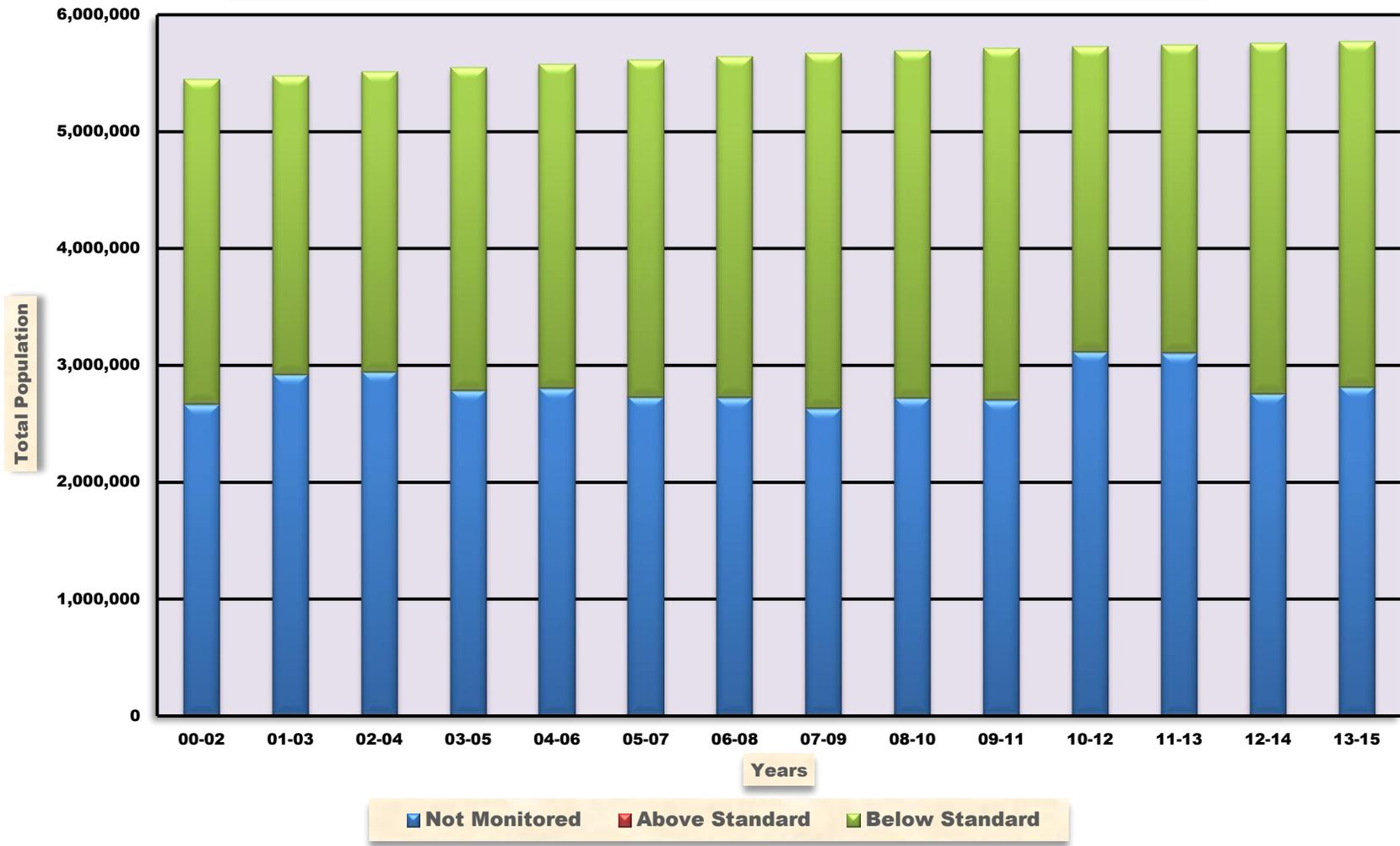


Figure WI-3

People Breathing Various Air Quality Levels - Annual PM-2.5  
Wisconsin



# WYOMING

## Ozone

In the 2000 – 2002 time period, approximately 19 thousand people (3.8%) lived in counties that met the ozone standard. By 2013 – 2015 this had increased to approximately 0.44 million people (74.7%). The ozone standard was lowered from 0.085 ppm to 0.070 ppm. Figure WY-1 shows the distribution of people by year. The population weighted ozone design value in 2000 – 2002 was 0.065 ppm. By 2013 – 2015 this had lowered to a value of 0.063 ppm, a reduction of 3.1 percent.

## 24-Hour PM-2.5

In the 2000 – 2002 time period, approximately 0.15 million people (29.3%) lived in counties where 24-hour PM-2.5 levels met the standard. By 2013 - 2015 this was approximately 0.44 million people (75.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 65 to 35 µg/m3. Figure WY-2 shows the distribution of people by year. The population weighted 24-hour PM-2.5 design value in 2000 – 2002 was 18 µg/m3. By 2013 – 2015 this had lowered to a value of 15 µg/m3, a reduction of 16.7 percent.

## Annual PM-2.5

In the 2000 – 2002 time period, approximately 0.15 million people (29.3%) lived in counties where annual PM-2.5 levels met the standard. By 2013 – 2015 this had increased to approximately 0.44 million people (75.7%). The remainder of the population lived in counties where PM-2.5 was not measured. The standard was lowered from 15 to 12 µg/m3. Figure WY-3 shows the distribution of people by year. The population weighted annual PM-2.5 design value in 2000 – 2002 was 6.4 µg/m3. By 2013 – 2015 this had lowered to a value of 4.6 µg/m3, a reduction of 28.1 percent.

**Table WY-1**  
**2013 – 2015**

County	Population	Ozone			Particle Pollution (PM-2.5)				
		Avg. DV	Grade	MM	Avg. 24-Hr DV	Grade	Avg. Ann DV	Grade	MM
Albany	37,956	0.066	C	N	13	A	4.4	A	N
Big Horn	12,020	0.059	B	N	ND	--	ND	--	--
Campbell	49,220	0.059	B	N	14	A	4.1	A	Y
Carbon	15,559	0.060	B	N	ND	--	ND	--	--
Fremont	40,315	0.062	B	Y	24	A	6.7	A	N
Laramie	97,121	0.065	C	N	14	A	3.9	A	Y
Natrona	82,178	0.062	B	N	18	A	4.6	A	N
Park	29,228	ND	--	--	17	A	4.1	A	N
Sheridan	30,009	ND	--	--	17	A	5.4	A	Y
Sublette	9,899	0.061	B	N	13	A	5.1	A	N
Sweetwater	44,626	0.063	C	Y	11	A	4.7	A	N
Teton	23,125	0.062	B	N	11	A	4.5	A	N
Uinta	20,822	0.063	C	N	ND	--	ND	--	--
<b>Subtotal</b>	<b>492,078</b>								
Not Monitored	94,029								
<b>Total</b>	<b>586,107</b>								

DV – Design Value

ND - No Data

MM – Multiple Monitors

**Table WY-2  
Population Weighted Design Values**

<b>Period</b>	<b>Ozone (ppm)</b>	<b>24-Hour PM-2.5 (µg/m3)</b>	<b>Annual PM-2.5 (µg/m3)</b>
2000 – 2002	0.065	18	6.4
2001 – 2003	0.069	18	6.2
2002 – 2004	0.068	20	6.4
2003 – 2005	0.065	20	6.2
2004 – 2006	0.064	19	6.1
2005 – 2007	0.067	17	5.8
2006 – 2008	0.067	15	5.5
2007 – 2009	0.065	15	5.5
2008 - 2010	0.064	17	6.1
2009 – 2011	0.063	14	5.2
2010 – 2012	0.065	15	5.5
2011 – 2013	0.065	15	5.3
2012 - 2014	0.064	15	5.1
2013 - 2015	0.063	15	4.6

# WYOMING

**Table WY-3  
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	2011-2013	2012-2014	2013-2015
A	18,837	19,066	19,467	57,520	59,511	41,298	0	0	0	7,111	11,794	11,994	13,941	0
B	0	36,586	36,907	0	0	29,626	84,769	137,136	179,305	178,978	287,100	196,840	298,156	247,495
C	0	0	0	0	0	0	26,160	0	0	0	7,776	100,830	37,811	192,582
D	0	0	0	0	0	0	4,737	5,067	3,416	5,073	2,592	1,674	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	18,837	55,652	56,374	57,520	59,511	70,923	115,666	142,203	182,721	191,162	309,262	311,337	349,908	440,077
NM	481,180	447,801	452,732	456,637	463,156	463,953	460,377	417,648	380,905	376,996	267,150	271,321	234,245	149,030
Total	500,017	503,453	509,106	514,157	522,667	534,876	546,043	559,851	563,626	568,158	576,412	582,658	584,153	589,107

**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	2011-2013	2012-2014	2013-2015
A	146,258	147,608	197,009	199,760	223,961	367,625	243,243	210,302	178,801	339,635	345,988	391,799	441,865	443,677
B	0	0	0	0	0	0	0	39,685	40,123	40,579	41,110	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	146,258	147,608	197,009	199,760	223,961	237,625	243,243	249,987	218,924	380,214	387,098	391,799	441,865	443,677
NM	353,759	355,845	312,097	314,397	298,706	297,251	302,800	309,864	344,702	187,944	189,314	190,859	142,288	142,430
Total	500,017	503,453	509,106	514,157	522,667	534,876	546,043	559,851	563,626	568,158	576,412	582,658	584,153	586,107

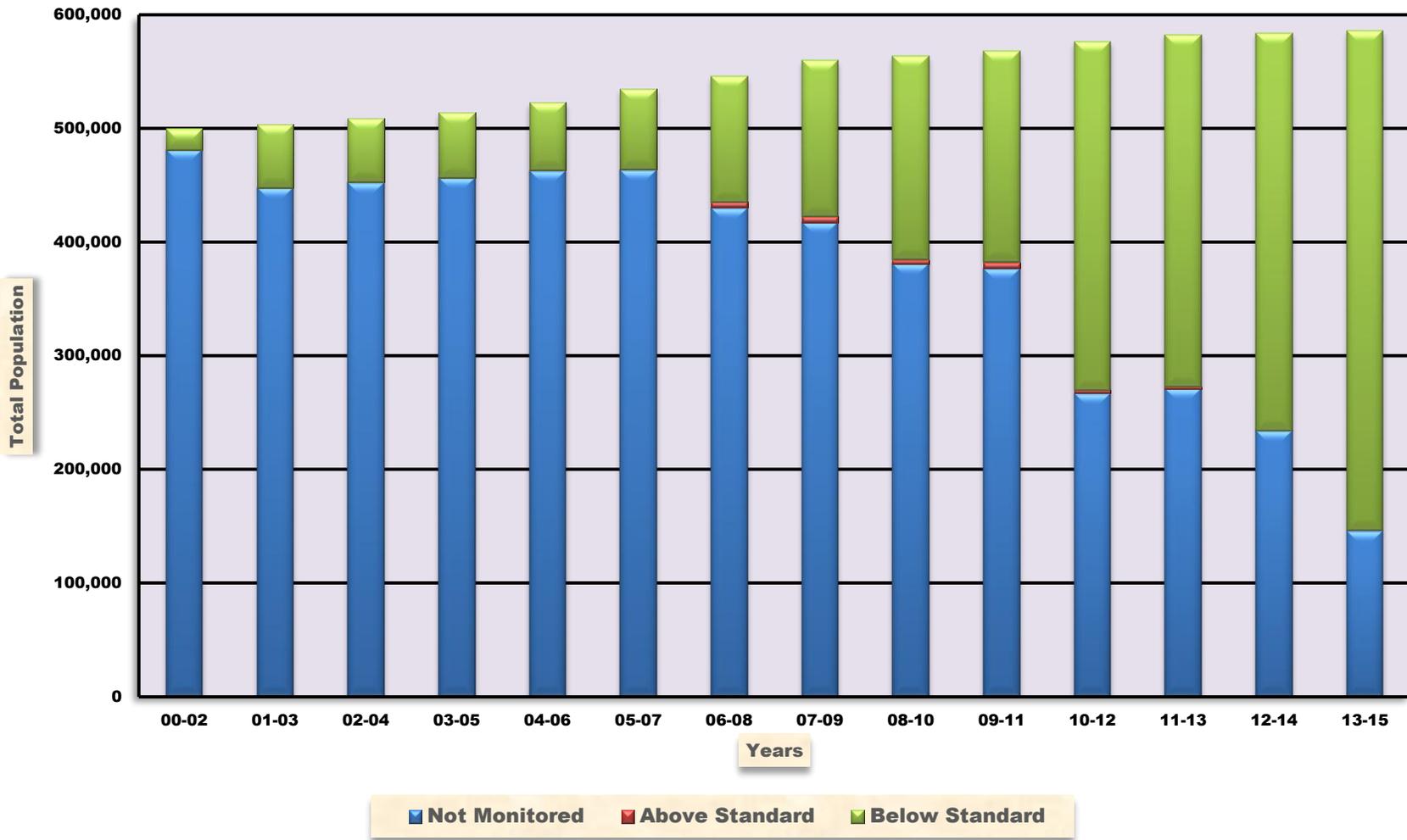
**People Breathing Year Round Particle Pollution (Annual PM-2.5)**

Grade	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015
A	146,258	147,608	197,009	199,760	223,961	237,625	243,243	249,987	218,924	380,214	387,098	391,799	441,865	443,677
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	146,258	147,608	197,009	199,760	223,961	237,625	243,243	249,987	218,924	380,214	387,098	391,799	441,865	443,677
NM	353,759	355,845	312,097	314,397	298,706	297,251	302,800	309,864	344,702	187,944	189,314	190,859	142,288	142,430
Total	500,017	503,453	509,106	514,157	522,667	534,876	546,043	559,851	563,626	568,158	576,412	582,658	584,153	586,107

NM – Not Monitored

Figure WY-1

### People Breathing Various Air Quality Levels - 8 Hour Ozone Wyoming



**Figure WY-2**

**People Breathing Various Air Quality Levels - 24 Hour PM-2.5  
Wyoming**

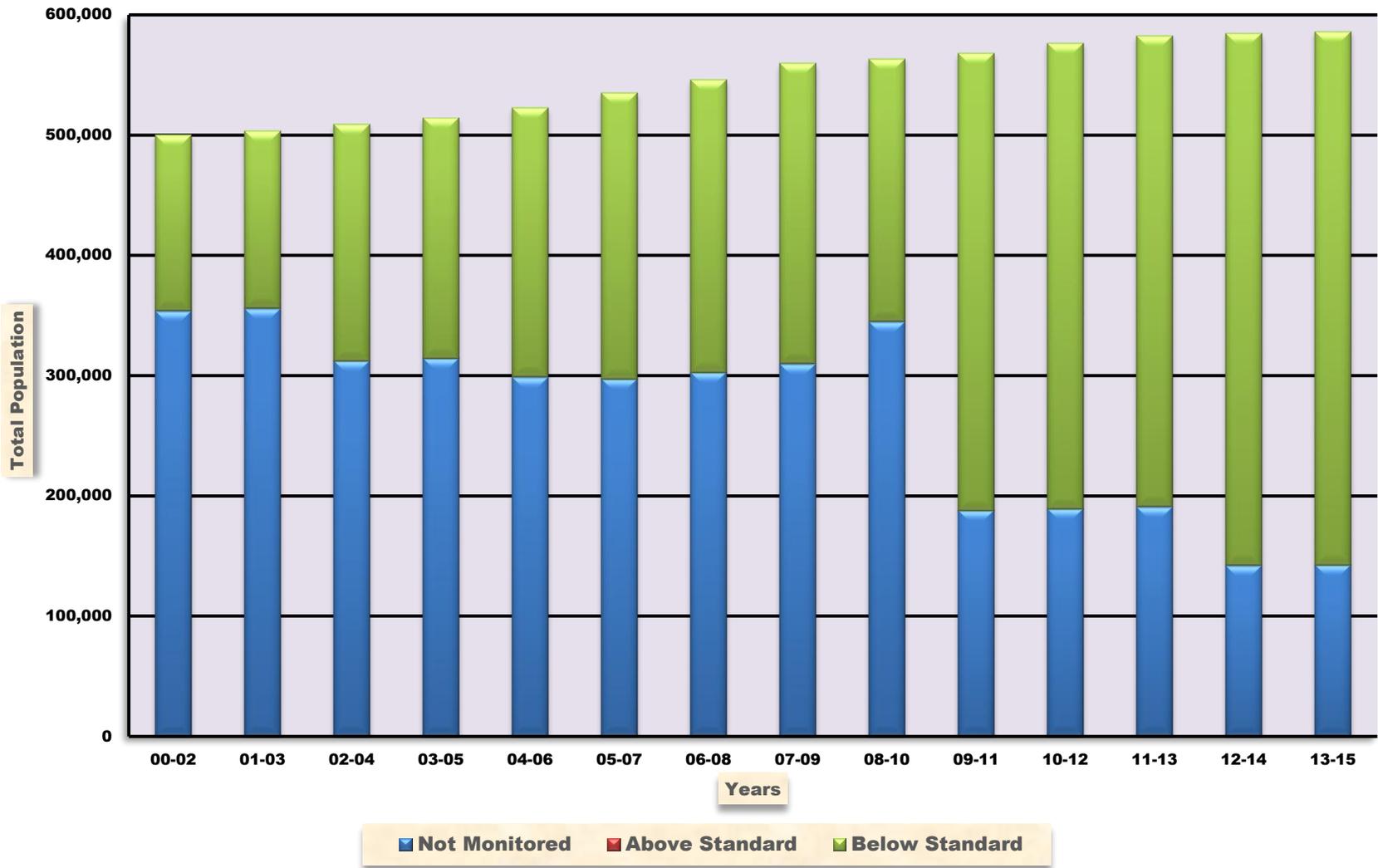


Figure WY-3

### People Breathing Various Air Quality Levels - Annual PM-2.5 Wyoming

