

State of the Air 2017: Notes for the Southeast



STATE OF THE AIR 2017

Data Notes: This report covers 2013-2015. Last year's report covered 2012-2014. All ozone data were compared to the 2015 ozone air quality index all the way back through the 1996-1998 data used in the first SOTA report. That index reflects the stronger ozone standard adopted in 2015.

Key Findings

The Southeast states show strong evidence of the progress made on air quality thanks to the Clean Air Act. Some of the biggest progress came from cleaning up major sources, especially power plants, and retiring old, dirty diesel engines.

- Only two major Southeast cities remain on the 25 most polluted lists: Birmingham, at #22, for year-round particles, and Baton Rouge at #22 for ozone. Even with that ranking, Birmingham had reached its lowest level in this year's report. Baton Rouge, however, had higher ozone—uncommon in this year's report.

Major SE cities like Atlanta, Birmingham, and Raleigh were on the 25 most polluted lists for ozone in the first report and have improved enough so that they are no longer ranked in that list. For example, Birmingham ranked #24 most polluted for ozone in the first report in 2000 and now ranks #52.

Eight cities reached their lowest levels and fewest days ever in all categories in the report's history: Birmingham, Charleston, S.C., Charlotte, N.C., Columbus, Ga., Greensboro, N.C., Miami, New Orleans, and Orlando. This does not mean that their air is clean enough, however.

The Southeast states had more cities among the cleanest cities lists than ever before. Again, progress from the reductions in air pollution under the Clean Air Act moved many cities into the cleanest cities list for the first time. The cities below ranked on at least two of the cleanest cities lists.

- **Three cities ranked on all three cleanest cities list:** Coral-Fort Myers-Naples, FL; Palm Bay-Melbourne-Titusville, FL; and Wilmington, NC. This marks Wilmington's first time at this level.
- **Four cities ranked on both lists for the cleanest cities for particle pollution:** Homosassa Springs, FL; Lakeland-Winter Haven, FL; North Port-Sarasota, FL; and Orlando.
- **Fourteen cities ranked on the cleanest for ozone and short-term particle pollution:** Brunswick, GA; Columbia-Orangeburg-Newberry, SC; Dothan-Enterprise-Ozark, AL; Fayetteville-Springdale-Rogers, AR-MO; Florence, SC; Florence-Muscle Shoals, AL; Gadsden, AL; Gainesville-Lake City, FL; Greenville-Washington, NC; Jackson-Vicksburg-Brookhaven, MS; Monroe-Ruston-Bastrop, LA; Rome-Summerville, GA; Savannah-Hinesville-Statesboro, GA; and Tuscaloosa, AL.

Some PM data remain missing for Florida, but most counties have enough data. EPA has approved data for most counties in Florida, but some remain missing. Almost all PM data are also missing for Tennessee, including the Memphis area, which affects Arkansas and Mississippi counties. .

All ozone averages are based on the 2015 ozone air quality standard, using the air quality index for that standard. We downloaded all the data back to 1996 again and sorted all years' data using that new standard. Since we updated this last year, you can compare the numbers of days on average in this report with the numbers in the 2016 report. Updated averages from all previous years' reports show in the trend charts online. All the averages in these notes, below, compare data using the 2015 standard as the basis.

Atlanta--Athens-Clarke County--Sandy Springs, GA

Ranked 29th most polluted for ozone—*best ever number of unhealthy days, higher ranking*

Ranked tied for 32nd most polluted for year-round particles—*slightly worse (full metro data), meets the national standard*

Ranked for the first time as one of the cleanest cities for short-term particle pollution—*no unhealthy days*

Ozone. The metro area improved reaching its fewest ever ozone days and ranked 29th for most polluted city for ozone in the nation, although had worse ranking than 52nd in 2012-2014.

- **Fulton County, GA**, the most polluted county in the metro area, had a weighted average of 7.2 days of unhealthy levels of ozone, much better than the 9.5 in 2012-2014
- Fulton County's progress continues to be impressive, looking back to the period with the worst ozone levels. In 1998-2000, Fulton County recorded its worst weighted average of 95.5 days per year.

Particles. The metro area improved to its lowest level ever for short-term particle pollution, having no days when particle pollution spiked to unhealthy levels. The annual level increases slightly from the 2016 report, but the metro area still meets the national standard. The ranking tied for 32st most polluted, is worse than the 44th from last year, but that lacked Fulton County data. This is a much improved ranking compared to the 18th most polluted that Atlanta held in the 2014 report. This report reflects restored sufficient monitoring data in enough counties to assess the 3 years needed for official levels.

- Fulton County, GA, returns with enough data to rank as the most polluted county for year-round particle levels. This created a slight increase for the metro area to an average of 10.5 µg/m3 in 2013-2015, compared to the 10.3 µg/m3 in the 2016 report in Clayton County.
- The highest annual level ever recorded had been in Fulton County in 2000-2002 when the level reached 19.3 µg/m3.
- For short-term particles, no counties reported any days in the unhealthy range, making this the first time Atlanta has been on the cleanest cities list. This is their best ever weighted average on record.

Counties with monitors included in this Metro

| | | | | | | |
|---------|------------------|-------------------|------|----------|------|----------|
| Georgia | Clarke DeKalb | Clayton Fulton | Hall | Paulding | Cobb | Gwinnett |
|---------|------------------|-------------------|------|----------|------|----------|

Baton Rouge, LA

Ranked #22 most polluted city for ozone –first time ever on this list.

Ranked #77 most polluted city for short-term particle pollution.

Ranked #95 most polluted city for year-round particle pollution

Ozone: The metro area increased its average unhealthy ozone days in 2013-2015 over the 2016 report.

This ranking at #22 most polluted is the first time Baton Rouge has been on the 25 most-polluted cities list.

- **East Baton Rouge Parish** had the highest weighted average number of days –9.0 (an F), an increase from the 8.7 reported in the 2016 report, which had been the lowest ever. The worst period was in 2003-2005, when East Baton Rouge Parish recorded a weighted average of 44.7 days, using the scale based in the current, 2015 ozone standard.

Particles: The metro area reached its lowest year-round level of particle pollution in 2013-2015. The metro area has maintained the same weighted average number of high particle pollution days in this year's report as the 2016 report, covering 2012-2014.

- **East Baton Rouge Parish** had the highest weighted average number of days –0.3 day (a B). The best period was in 2008-2010 when the metro area experienced no unhealthy days. The worst came in 2000-2002 when the city had 4.7.
- **West Baton Rouge Parish** had the highest annual average, 8.9 $\mu\text{g}/\text{m}^3$, but that formed the lowest metro area ever reported for the city. The highest was in 2005-2007 when it reached 13.7 $\mu\text{g}/\text{m}^3$. The metro area meets the national standard.

Birmingham-Hoover-Talladega, AL

Ranked tied for 52nd most polluted for ozone (last year 53rd)—*lowest ever number of unhealthy air days*

Ranked 22nd most polluted for year-round particles—*best ever year-round levels*

Ranked as one of the cleanest cities for short-term particle days —*best ever, no unhealthy days*

Ozone: The metro area reported its best ever ozone levels in 2013-2015, although the ranking worsened slightly to 52nd from 53rd for most polluted in the nation.

- Jefferson County, AL, the most polluted county in the metro area, once again had its best-ever weighted average of 3.7 (still an F) days of unhealthy levels of ozone, much lower than the weighted average of 9.3 days in 2012-2014 covered in last year's report. This continues a trend of having far fewer days that began in 2011-2013, reported in the 2015 SOTA.
- This year's weighted average is the best ever, far below the worst year in 1998-2000 when the average was 59.3 days, recorded in Shelby County, AL. These averages were also recalculated with the updated 2015 ozone standard.

Particles: The metro area reached its lowest ever year-round levels for particle pollution in 2013-2015, and continues to meet the official national air quality standard for particle pollution.

- **Jefferson County, AL**, the most polluted county in the metro area, improved its level of year-round particle pollution with a decrease to 11.0 µg/m³ from 11.3 µg/m³ in 2012-2014
- This year's particle pollution level continues a downward trend begun 2005-2007, when levels were at 18.9 µg/m³. The worst monitored period was in 2000-2002 when average level was 19.0 µg/m³.
- For short-term particles, all counties with monitors in the metro area earned an A grade for their continued record of no unhealthy days, which they also received in the 2016 report.

Counties included in this Metro

| | | | | | | |
|---------|--------|-----------|-----------|--------|---------|-----------|
| Alabama | Bibb | Blount | Chilton | Coosa | Cullman | Jefferson |
| | Shelby | St. Clair | Talladega | Walker | | |

Charleston-North Charleston, SC

Ranked again as one of the cleanest cities for ozone pollution—no unhealthy days.

Ranked tied for 129nd most polluted for year-round particle pollution—improved, best level ever, meets the national standard.

Tied for 72nd most polluted for short-term unhealthy particle days—improved, fewer number of unhealthy days

- Charleston County had 0.3 day on average of unhealthy particle pollution in 2013-2015. The best ever was in 2008-2010 when the metro area had no unhealthy days.

Charlotte-Concord, NC-SC

Ranked 46th most polluted for ozone --lowest ozone pollution ever, though higher ranking than in 2016 report (56th)

Ranked again as one of the cleanest cities for short-term particle pollution—no unhealthy days

Ranked tied for 86th most polluted for year-round particle pollution—best ever, meets the national standard.

Ozone. The metro area experienced its best report for ozone yet in 2013-2015 although its ranking worsened to 46th most polluted city for ozone in the nation from 56th in last year's report.

- **Mecklenburg County, NC, the most polluted county in the metro area**, had a weighted average of 4.3 days with unhealthy levels of ozone, much lower than the weighted average of 8.7 days in 2012-2015.
- Mecklenburg County's progress is especially impressive looking back to the period with the worst ozone levels and continues a downward trend in ozone levels. The current period's level is far below 1997-1999, when the weighted average was 92.2 days, recalculated with the new standard.

Particles. The metro area improved the year-round levels for particle pollution in 2013-2015 to its lowest level ever and again ranked among the cleanest in the nation having no days with unhealthy spikes in particle levels.

- **Year-round levels for particle pollution in 2013-2015 continued to improve and remain well below the national air quality standard.** The metro area now ties for 86th most polluted city for year-round particle pollution.
- **Mecklenburg County, NC, the most polluted county in the metro area, continued to improve** its level of year-round particle pollution with a decrease to 9.0 $\mu\text{g}/\text{m}^3$ from 9.2 $\mu\text{g}/\text{m}^3$ in 2012-2014, **its best levels ever.** This year's levels continue the gradual downward trend in annual particle pollution from the high of 15.8 $\mu\text{g}/\text{m}^3$ in 2000-2002.

Counties included in this Metro

| | | | | | | |
|----------------|-------------------|---------------------|-----------------|---------|---------|-------------|
| North Carolina | Cabarrus Rowan | Cleveland Stanly | Gaston Union | Iredell | Lincoln | Mecklenburg |
| South Carolina | Chester | Lancaster | York | | | |

Columbus-Auburn-Opelika, GA-AL

Ranked tied for 119th most polluted for ozone— lowest ozone pollution ever

Ranked tied for 47th most polluted for year-round particles—best-ever year-round levels, meets the national standard, improved ranking.

Ranked as one of the cleanest cities for short-term particle days —best ever record, no unhealthy days

Ozone. The metro area maintained its same best report with the fewest high ozone days ever in 2013-2015. Russell County, AL, the most polluted county in the metro, had a weighted average of 0.7 days in 2013-2015, the same as in 2012-2014.

Particles. The metro area reached its lowest levels ever of year-round particle pollution and continues to meet the national standard. Columbus now ranks 47th most polluted, a big improvement over the previous ranking in the 2016 report of 33rd most polluted.

- **Russell County, AL** was the most polluted county for **year-round particles** in the metro area, but had its lowest year-round levels ever at 10.0 $\mu\text{g}/\text{m}^3$.
- For short-term particles, all counties with monitors in the metro area earned an A grade for their continued record of no unhealthy days. This is their best ever weighted average on record.

Greensboro-Winston-Salem-High Point, NC

Tied for 84th most polluted for ozone— improved to best ever, lowest number of unhealthy days

Ranked as one of the cleanest cities for short-term particle days—no unhealthy days

Tied for 73rd most polluted for year-round particle levels—best levels ever

Jackson-Vicksburg-Brookhaven, MS

Ranked as one of the cleanest cities for ozone pollution—*improved, no unhealthy days*

Ranked as one of the cleanest cities for short-term particle days—*improved, no unhealthy days*

Not enough data to evaluate to analyze year-round particle levels

Jacksonville-St. Mary's-Palatka, FL-GA

Tied for 93rd most polluted for ozone—*maintained the same number of days as in 2016 report, still best levels ever*

Ranked tied for 136th most polluted for year-round particles—*finally have sufficient data to evaluate, still well below the national standard.*

Ranked tied for 72nd for short-term particle pollution —*finally have sufficient data to evaluate, improved over previous accepted report data to lowest ever.*

Little Rock-North Little Rock, AR

Ranked 26th most polluted for year-round particles – *lowest level ever, meets the national standard*

Tied for 72nd most polluted for short-term unhealthy particle days—*same number of unhealthy days*

Tied for 93rd most polluted for ozone— *improved to best ever*

Particles: The metro area reached its lowest ever year-round levels for particle pollution in 2013-2015, and meets the official 2012 national air quality standard for particle pollution.

- **Pulaski County, AR**, the only monitored county in the metro area, greatly improved its level of year-round particle pollution with a decrease to 10.7 µg/m³ from 11.1 µg/m³ in 2012-2014.
- This year's particle pollution level continues a downward trend begun 2003-2005, when levels were at 14.2 µg/m³. The worst period was in 2000-2002 when average level was 14.6 µg/m³.
- For short-term particles, Pulaski County, AR also retained its weighted average of 0.3 days and its B grade.

Ozone. The metro area had its fewest unhealthy ozone days, improving its rank to tie for 93rd.

- Pulaski County, the most polluted county in the metro area, improved its weighted average to 1.3 days, compared to the 7.0 days in the weighted average in 2012-2014. This is a huge improvement since the worst period in 2000-2002, when the metro area had 37.5 unhealthy days on average.

Macon-Warner Robins, GA

Ranked 39th most polluted for year-round particles—best ever and meets the standard.

Tied for 72nd most polluted for short-term unhealthy particle days—same number of unhealthy air days

Tied for 119th most polluted for ozone—best ever

Particles: The metro area continues to improve its year-round levels for particle pollution for 2013-2015 to its lowest ever. It ranked 39th most polluted area in year-round particle pollution, an improvement from its ranking of 28th in 2012-2014. However, it retained its B grade for short-term particle pollution earned first in the 2016 report.

- Bibb County, GA, the only county with a monitor in the metro area, improved its year-round particle pollution to 10.2 $\mu\text{g}/\text{m}^3$, its best yet and meets the national standard for year round particles, down from 10.9 $\mu\text{g}/\text{m}^3$ in 2012-2014. The worst levels recorded in the area was 16.8 $\mu\text{g}/\text{m}^3$ in 2004-2006.
- For short-term particles, Bibb County, the most polluted county in the metro area, retained its B grade for a weighted average of 0.3 unhealthy days, as it had in the 2016 report. This remains down from its record of 0 unhealthy days in both the 2014 and 2015 reports.

Ozone. The metro area had its fewest unhealthy ozone days yet, although its ranking worsened to tie for 119th.

- Bibb County, the most polluted county in the metro area, improved its weighted average to 0.7 days, earning a B grade and dropping below the 2.0 weighted average it had held in the 2012-2014 data.

Memphis-Forrest City, TN-MS-AR

Ranked 63rd most polluted for ozone (36th last year) —improved

Not enough data to evaluate short-term or year round particle pollution

Ozone. The metro area reached its fewest ever days with unhealthy ozone pollution in 2013-2015, and ranks tied for 63rd most polluted in the nation.

- **Shelby County, TN**, the most polluted county in the metro area, had a weighted average of 2.7 days (a D) with unhealthful levels of ozone, its best ever and a big improvement over the weighted average of 12.5 days in 2012-2014.
- The current period's level continues a significant improvement over 1998-2000, when the weighted average was at a high of 74.3 days.

Particles. **Not enough data.** Tennessee had serious quality control issues with its laboratory processing for particulate matter data from most of the monitors in the state. As a result, EPA did not accept the available monitored data.

Counties included in this Metro

| | | | | | |
|-------------|------------|-------------|----------|------|--------|
| Tennessee | Fayette | Shelby | Tipton | | |
| Arkansas | Crittenden | St. Francis | | | |
| Mississippi | Benton | Desoto | Marshall | Tate | Tunica |

Miami-Ft. Lauderdale-Pompano Beach, FL

Tied for 104th most polluted for ozone—*better than last year*

Ranked as one of the cleanest cities for year-round particle levels.

Tied for 72nd most polluted for short-term unhealthy particle days

- The metro area finally had enough quality assured data to evaluate the 2013-2015 information.
- **Miami-Dade County** had the highest annual average in the metro for year-round particle pollution, with 6.0 $\mu\text{g}/\text{m}^3$, its best yet. That level is low enough to rank it among the cleanest cities for year round particle pollution. The county also had a weighted average of 0.3 days of unhealthy spikes in particle pollution during this period.

New Orleans-Metairie-Hammond, LA-MS

Ranked tied for 58th most polluted for ozone – *fewest days, best levels ever.*

- **St. Tammany Parish** had its fewest unhealthy days ever, with 3.5 days on average, although the highest in the metro. Big improvement over the worst period for the entire metro area. That was in 1999-2000, when 41.2 days on average were monitored in Jefferson Parrish, recalculated with the new standard.

Ranked tied for 86th most polluted for year-round particle pollution – *best levels ever*

- St. Bernard Parish had the worst year-round particles in 2013-2015, but still improved to the lowest levels ever, at 9.0 $\mu\text{g}/\text{m}^3$.

Ranked as one of the cleanest cities for short-term particle days—*no unhealthy days*

Counties/Parishes included in this Metro

| | | | | | | |
|-------------|----------------------|-------------|-------------|-------------|-------------|-----------|
| Louisiana | Jefferson | Orleans | Plaquemines | St. Bernard | St. Charles | St. James |
| | St. John the Baptist | St. Tammany | Wyandotte | Tangipahoa | Washington | |
| Mississippi | Pearl River | | | | | |

Orlando-Deltona-Daytona Beach, FL

Tied for 104th most polluted for ozone—*best ever*

- Orange County and Lake County both had the highest number of unhealthy ozone days, with 1.0 days (a C) on average in 2013-2015. That marks a huge improvement over the worst ever, reported in 1998-2000, when Orange County had 26 days on average of unhealthy ozone, recalculated with the new standard.

Ranked as one of the cleanest cities for short-term particle days—*no unhealthy days*

Ranked as one of the cleanest cities for year-round particle pollution—*one of the lowest levels in the nation*

Raleigh-Durham-Chapel Hill, NC

Tied for 26th most polluted for year-round particle levels—*slightly worse annual level than in 2016 report, but still meets national standard*

Tied for 60th most polluted for short-term unhealthy particle days—*worse*

Tied for 136th most polluted for ozone—*best ever*

Ozone. Both **Person County** and **Wake County** had weighted average of 0.3 days (a B) days of unhealthy ozone. Those are the fewest days ever and an improvement over the 2.5 days Wake County and Durham County registered on average in 2012-2014. The metro greatly improved over the worst period, in 1996-1998, when Wake County had 79 days of unhealthy ozone on average each year, recalculated with the new standard.

Particle. **Wake County** remains the most polluted year-round by particle pollution with 10.7 $\mu\text{g}/\text{m}^3$, an increase over the 10.3 $\mu\text{g}/\text{m}^3$ in the 2016 report, but still meets the national standard. Wake County had 0.7 unhealthy particle pollution days on average. In the 2016 report, the metro area had been one of the cleanest cities for short-term particle pollution.

Tampa-St. Petersburg-Clearwater, FL

Tied for 59th most polluted for ozone—*improved, fewest days ever*

Ranked tied for 100th most polluted for year-round particles—*finally have sufficient data to evaluate, still well below the national standard.*

Ranked as one of the cleanest cities in the nation for short-term unhealthy particle days

- Hillsborough County had its fewest high ozone days in 2013-2015 with 3.3 on average, still an F, but well below the 6.0 in the 2012-2014 data. The worst period was 1998-2000 when the County monitored a weighted 37.7 days on average, recalculated with the 2015 ozone standard.

- Hillsborough County had the highest year-round particle levels, 7.8 $\mu\text{g}/\text{m}^3$. This is an increase over the last accepted data in the 2015 report, but still well below the national standard.

Cleanest Cities

Cleanest for Ozone Pollution

Zero unhealthy air days—All counties

| | |
|---------------------------------------|------------------------------------|
| Brunswick, GA | Jackson-Vicksburg-Brookhaven, MS |
| Cape Coral-Fort Myers-Naples, FL | Monroe-Ruston-Bastrop, LA |
| Charleston-North Charleston, SC | New Bern-Morehead City, NC |
| Columbia-Orangeburg-Newberry, SC | Ocala, FL |
| Dothan-Enterprise-Ozark, AL | Palm Bay-Melbourne-Titusville, FL |
| Fayetteville-Springdale-Rogers, AR-MO | Rome-Summerville, GA |
| Florence, SC | Savannah-Hinesville-Statesboro, GA |
| Florence-Muscle Shoals, AL | Sebring, FL |
| Gadsden, AL | Tallahassee-Bainbridge, FL-GA |
| Gainesville-Lake City, FL | Tuscaloosa, AL |
| Greenville-Washington, NC | Wilmington, NC |
| Hickory-Lenoir, NC | |

Cleanest for Year-Round Particle Pollution

Lowest design values

| |
|--|
| Cape Coral-Fort Myers-Naples, FL |
| Homosassa Springs, FL |
| Lakeland-Winter Haven, FL |
| Miami-Fort Lauderdale-Port St. Lucie, FL |
| North Port-Sarasota, FL |
| Orlando-Deltona-Daytona Beach, FL |
| Palm Bay-Melbourne-Titusville, FL |
| Wilmington, NC |

Cleanest for Short-term Particle Pollution

Zero unhealthy air days—All counties

| | |
|--|---------------------------------------|
| Alexandria, LA | Cape Coral-Fort Myers- |
| Asheville-Brevard, NC | Charlotte-Concord, NC-SC |
| Atlanta--Athens-Clarke County--Sandy Springs, GA | Columbia-Orangeburg-Newberry, SC |
| Augusta-Richmond County, GA-SC | Columbus-Auburn-Opelika, GA-AL |
| Birmingham-Hoover-Talladega, AL | Dothan-Enterprise-Ozark, AL |
| Brunswick, GA | Fayetteville-Lumberton-Laurinburg, NC |
| | Fayetteville-Springdale-Rogers, AR-MO |

Florence, SC
Florence-Muscle Shoals, AL
Fort Smith, AR-OK
Gadsden, AL
Gainesville-Lake City, FL
Goldsboro, NC
Greensboro--Winston-Salem--High Point, NC
Greenville-Washington, NC
Gulfport-Biloxi-Pascagoula, MS
Homosassa Springs, FL
Hot Springs-Malvern, AR
Houma-Thibodaux, LA
Huntsville-Decatur-Albertville, AL
Jackson-Vicksburg-Brookhaven, MS
Lafayette-Opelousas-Morgan City, LA
Lake Charles-Jennings, LA
Lakeland-Winter Haven, FL
Mobile-Daphne-Fairhope, AL
Monroe-Ruston-Bastrop, LA
Montgomery, AL
New Orleans-Metairie-Hammond, LA-MS
North Port-Sarasota, FL
Orlando-Deltona-Daytona Beach, FL
Palm Bay-Melbourne-Titusville, FL
Pensacola-Ferry Pass, FL-AL
Rome-Summerville, GA
Savannah-Hinesville-Statesboro, GA
Tampa-St. Petersburg-Clearwater, FL
Tuscaloosa, AL
Valdosta, GA
Wilmington, NC