

RECOMMENDATION FOR ADOPTION

2015 OZONE STANDARD AREA BOUNDARY DESIGNATION RECOMMENDATION

On August 25, 2016, the Missouri Air Conservation Commission held a public hearing for the 2015 Ozone Standard Proposed Area Boundary Designation Recommendation. A summary of comments received and the air program's corresponding responses is included on the following page. The air program finalized the state's area boundary recommendations based on consideration of comments received.

In 2015, the U.S. Environmental Protection Agency (EPA) strengthened the 8-hour ozone National Ambient Air Quality Standard (NAAQS) to 70 parts per billion. Missouri is submitting to EPA boundary designation recommendations for this revised standard in accordance with the Clean Air Act and following EPA's Area Designations Memorandum (February 25, 2016). Nonattainment recommendations are for areas with monitored violations based on 2013 to 2015 data and areas contributing to the violations. All other areas of the state are recommended for an attainment/unclassifiable designation.

The state's recommendation has not been reprinted in the briefing document due to its volume. However, the Summary of Recommendation is included for reference. The entire document is available for review at the Missouri Department of Natural Resources' Air Pollution Control Program, 1659 East Elm Street, Jefferson City, Missouri, 65101, (573)751-4817. It is also available online at <http://dnr.mo.gov/env/apcp/stateplanrevisions.htm>.

The air program recommends the commission adopt the state's boundary recommendation. If the commission adopts this recommendation, the department will submit it to the EPA for consideration during the designation process. EPA will make a final decision on designations by October 2017. This recommendation will not be included in the Missouri State Implementation Plan.

Summary of Recommendation

The technical evaluations supporting this recommendation are based on the most recent data available, mostly collected during the 2013-2015 period. One monitor in Missouri (West Alton) located in St. Charles County currently violates the 2015 8-hour ozone NAAQS with a design value of 71 parts per billion (ppb). No other monitors in the state violate the NAAQS. The air program performed a five factor analysis and corresponding technical evaluations to determine a suitable nonattainment boundary. Based on these analyses, the air program is recommending a nonattainment designation for the following counties: Franklin, Jefferson, St. Charles, St. Louis, and the City of St. Louis.

Furthermore, the air program is recommending an unclassifiable/attainment designation for all other counties in Missouri. Table 1 contains the recommended designation classification for each county in Missouri. Figure 1 depicts Missouri's proposed area boundary recommendations for the 2015 ozone standard.

Figure 1. Missouri 2015 8-Hour Ozone NAAQS Boundary Recommendation

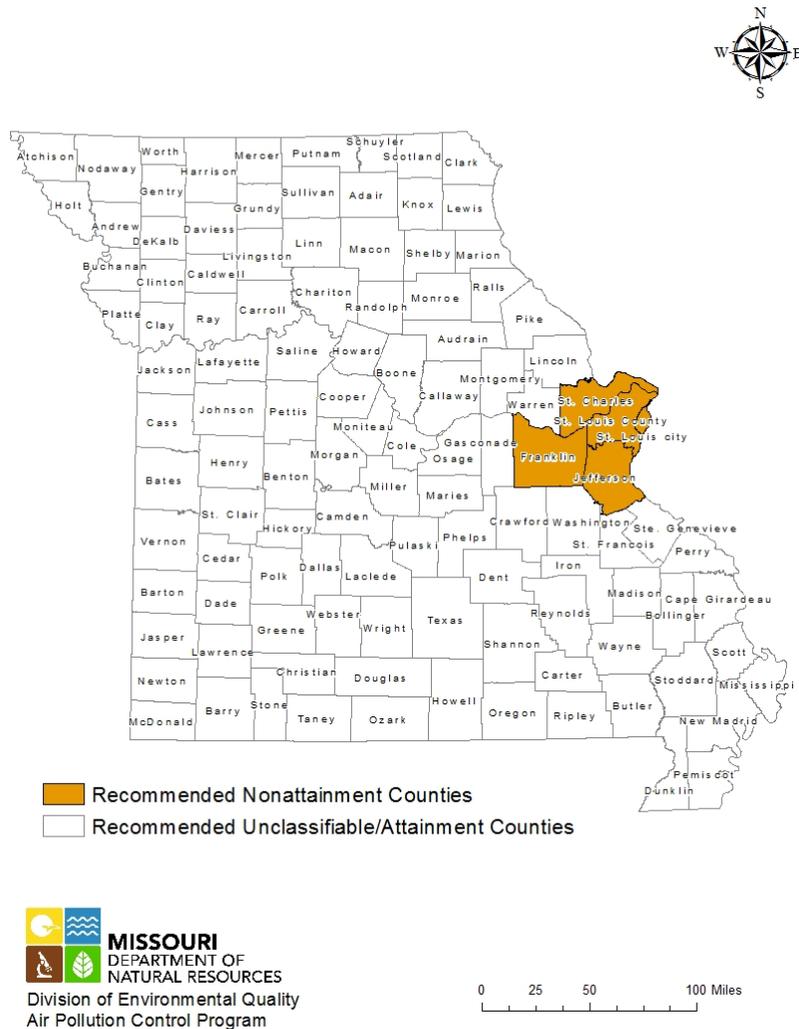


Table 1. Missouri Classification Recommendations for the 2015 Ozone NAAQS

County	Classification Recommendation
ADAIR	Unclassifiable/Attainment
ANDREW	Unclassifiable/Attainment
ATCHISON	Unclassifiable/Attainment
AUDRAIN	Unclassifiable/Attainment
BARRY	Unclassifiable/Attainment
BARTON	Unclassifiable/Attainment
BATES	Unclassifiable/Attainment
BENTON	Unclassifiable/Attainment
BOLLINGER	Unclassifiable/Attainment
BOONE	Unclassifiable/Attainment
BUCHANAN	Unclassifiable/Attainment
BUTLER	Unclassifiable/Attainment
CALDWELL	Unclassifiable/Attainment
CALLAWAY	Unclassifiable/Attainment
CAMDEN	Unclassifiable/Attainment
CAPE GIRARDEAU	Unclassifiable/Attainment
CARROLL	Unclassifiable/Attainment
CARTER	Unclassifiable/Attainment
CASS	Unclassifiable/Attainment
CEDAR	Unclassifiable/Attainment
CHARITON	Unclassifiable/Attainment
CHRISTIAN	Unclassifiable/Attainment
CLARK	Unclassifiable/Attainment
CLAY	Unclassifiable/Attainment
CLINTON	Unclassifiable/Attainment
COLE	Unclassifiable/Attainment
COOPER	Unclassifiable/Attainment
CRAWFORD	Unclassifiable/Attainment
DADE	Unclassifiable/Attainment
DALLAS	Unclassifiable/Attainment
DAVISS	Unclassifiable/Attainment
DeKALB	Unclassifiable/Attainment
DENT	Unclassifiable/Attainment
DOUGLAS	Unclassifiable/Attainment
DUNKLIN	Unclassifiable/Attainment
FRANKLIN	Nonattainment
GASCONADE	Unclassifiable/Attainment
GENTRY	Unclassifiable/Attainment
GREENE	Unclassifiable/Attainment
GRUNDY	Unclassifiable/Attainment
HARRISON	Unclassifiable/Attainment
HENRY	Unclassifiable/Attainment
HICKORY	Unclassifiable/Attainment
HOLT	Unclassifiable/Attainment
HOWARD	Unclassifiable/Attainment
HOWELL	Unclassifiable/Attainment
IRON	Unclassifiable/Attainment
JACKSON	Unclassifiable/Attainment
JASPER	Unclassifiable/Attainment

County	Classification Recommendation
JEFFERSON	Nonattainment
JOHNSON	Unclassifiable/Attainment
KNOX	Unclassifiable/Attainment
LACLEDE	Unclassifiable/Attainment
LAFAYETTE	Unclassifiable/Attainment
LAWRENCE	Unclassifiable/Attainment
LEWIS	Unclassifiable/Attainment
LINCOLN	Unclassifiable/Attainment
LINN	Unclassifiable/Attainment
LIVINGSTON	Unclassifiable/Attainment
McDONALD	Unclassifiable/Attainment
MACON	Unclassifiable/Attainment
MADISON	Unclassifiable/Attainment
MARIES	Unclassifiable/Attainment
MARION	Unclassifiable/Attainment
MERCER	Unclassifiable/Attainment
MILLER	Unclassifiable/Attainment
MISSISSIPPI	Unclassifiable/Attainment
MONITEAU	Unclassifiable/Attainment
MONROE	Unclassifiable/Attainment
MONTGOMERY	Unclassifiable/Attainment
MORGAN	Unclassifiable/Attainment
NEW MADRID	Unclassifiable/Attainment
NEWTON	Unclassifiable/Attainment
NODAWAY	Unclassifiable/Attainment
OREGON	Unclassifiable/Attainment
OSAGE	Unclassifiable/Attainment
OZARK	Unclassifiable/Attainment
PEMISCOT	Unclassifiable/Attainment
PERRY	Unclassifiable/Attainment
PETTIS	Unclassifiable/Attainment
PHELPS	Unclassifiable/Attainment
PIKE	Unclassifiable/Attainment
PLATTE	Unclassifiable/Attainment
POLK	Unclassifiable/Attainment
PULASKI	Unclassifiable/Attainment
PUTNAM	Unclassifiable/Attainment
RALLS	Unclassifiable/Attainment
RANDOLPH	Unclassifiable/Attainment
RAY	Unclassifiable/Attainment
REYNOLDS	Unclassifiable/Attainment
RIPLEY	Unclassifiable/Attainment
ST. CHARLES	Nonattainment
ST. CLAIR	Unclassifiable/Attainment
ST. FRANCOIS	Unclassifiable/Attainment
STE. GENEVIEVE	Unclassifiable/Attainment
ST. LOUIS COUNTY	Nonattainment
SALINE	Unclassifiable/Attainment
SCHUYLER	Unclassifiable/Attainment

County	Classification Recommendation
SCOTLAND	Unclassifiable/Attainment
SCOTT	Unclassifiable/Attainment
SHANNON	Unclassifiable/Attainment
SHELBY	Unclassifiable/Attainment
STODDARD	Unclassifiable/Attainment
STONE	Unclassifiable/Attainment
SULLIVAN	Unclassifiable/Attainment
TANEY	Unclassifiable/Attainment
TEXAS	Unclassifiable/Attainment
VERNON	Unclassifiable/Attainment
WARREN	Unclassifiable/Attainment
WASHINGTON	Unclassifiable/Attainment
WAYNE	Unclassifiable/Attainment
WEBSTER	Unclassifiable/Attainment
WORTH	Unclassifiable/Attainment
ST. LOUIS CITY	Nonattainment

COMMENTS AND RESPONSES ON –
2015 OZONE STANDARD PROPOSED AREA
BOUNDARY DESIGNATION RECOMMENDATION

The public comment period for the 2015 Ozone Standard Proposed Area Boundary Designation Recommendation opened on July 25, 2016 and closed on September 1, 2016. Revisions to the proposed recommendation were made as a result of comments.

The following is a summary of comments received and the Missouri Department of Natural Resources' Air Pollution Control Program's (air program's) corresponding responses.

SUMMARY OF COMMENTS: During the public comment period, the air program received comments from the following sources: Mississippi Lime Company, the Southeast Missouri Regional Planning & Economic Development Commission, Jack Jones and David Zimmerman of the Missouri Air Conservation Commission, and the St. Louis Regional Chamber's Energy and Environment Council Air Committee. Comments from the Air Conservation Commissioners were received at the public hearing before the Missouri Air Conservation Commission on August 25, 2016. All other comments were received in writing.

COMMENT #1: Comments in support of the proposed area boundary recommendation were received from Mississippi Lime Company, the Southeast Missouri Regional Planning & Economic Development Commission, and the St. Louis Regional Chamber's Energy and Environment Council Air Committee.

RESPONSE: The air program appreciates support from the various commenters for the boundary recommendation. No changes are made to the document as a result of these comments.

COMMENT #2: Mr. Jack Jones, Missouri Air Conservation Commissioner, requested clarification on how the monitoring data is used to develop averages for each site.

RESPONSE: Ozone monitors measure ozone concentrations continuously and report 1-hour ozone concentrations for each hour of a 24-hour day. There are 214 days in the ozone season (April 1st to October 31st) so, assuming all measurements are complete and valid, each ozone monitor produces a maximum of 5,136 1-hour averages which are used to calculate the 8-hour averages. Starting in 2017, the ozone season is extended by one month to begin March 1st, and a maximum of 5,880 1-hour averages will be used to calculate the 8-hour averages. After ranking the daily maximum design value at each location for each year, only the fourth highest 8-hour average is used for each of the three years to calculate the design value for a single monitor. More detailed data handling requirements may be found in Appendix U to Part 50—Interpretation of the Primary and Secondary National Ambient Air Quality Standards for Ozone:

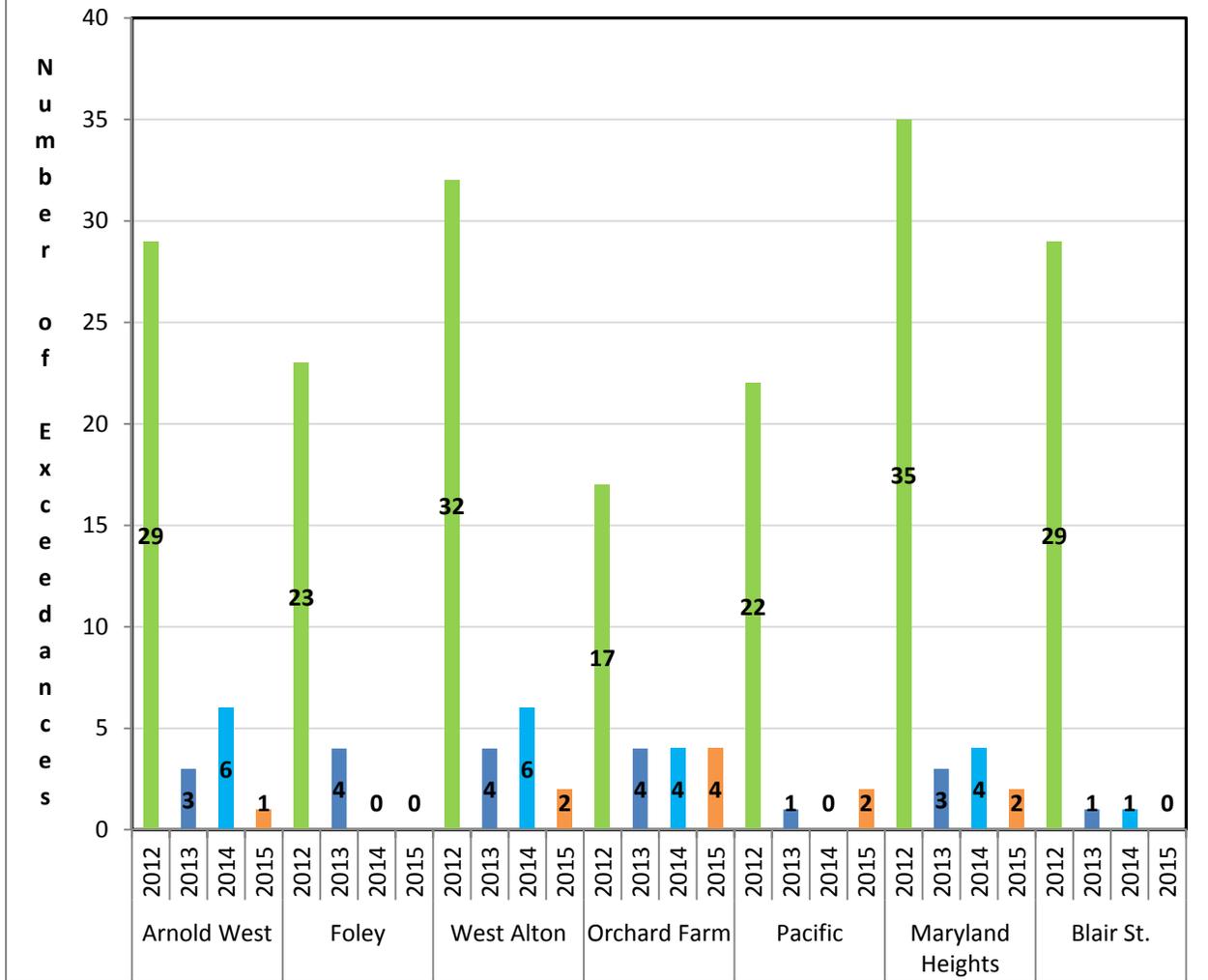
http://www.ecfr.gov/cgi-bin/text-idx?SID=25e3d80b585590754a98c5e8d2fb29af&mc=true&node=ap40.2.50_119.u&rgn=div9

In response to the commissioners' inquiries, the air program reviewed the monitoring data in the recommendation. During the review, the air program updated three design values in Table 3 and Figure 2 to match the certified 2013-2015 design values (Branson, Hillcrest, and Rocky Creek values revised upward by one part per billion each). The revised document contains the updated design values but the boundary recommendation remains unchanged. Further information on the design values and exceedance days can be found in Section 4, Table 3 and Section 5.3, Table 8, respectively. The exceedance days in Table 8 for the West Alton and Alton monitors are comprehensive for the 2013 to 2015 period as these monitors violate the 2015 ozone standard. The exceedance dates for Arnold West, Orchard Farm, and Maryland Heights are listed only because the exceedance occurred on the same day as a West Alton exceedance. There are additional exceedances at St. Louis area monitors not listed in Table 8, but they are not listed because back trajectories are not needed for all exceedance dates at all monitor sites, only dates at violating monitors.

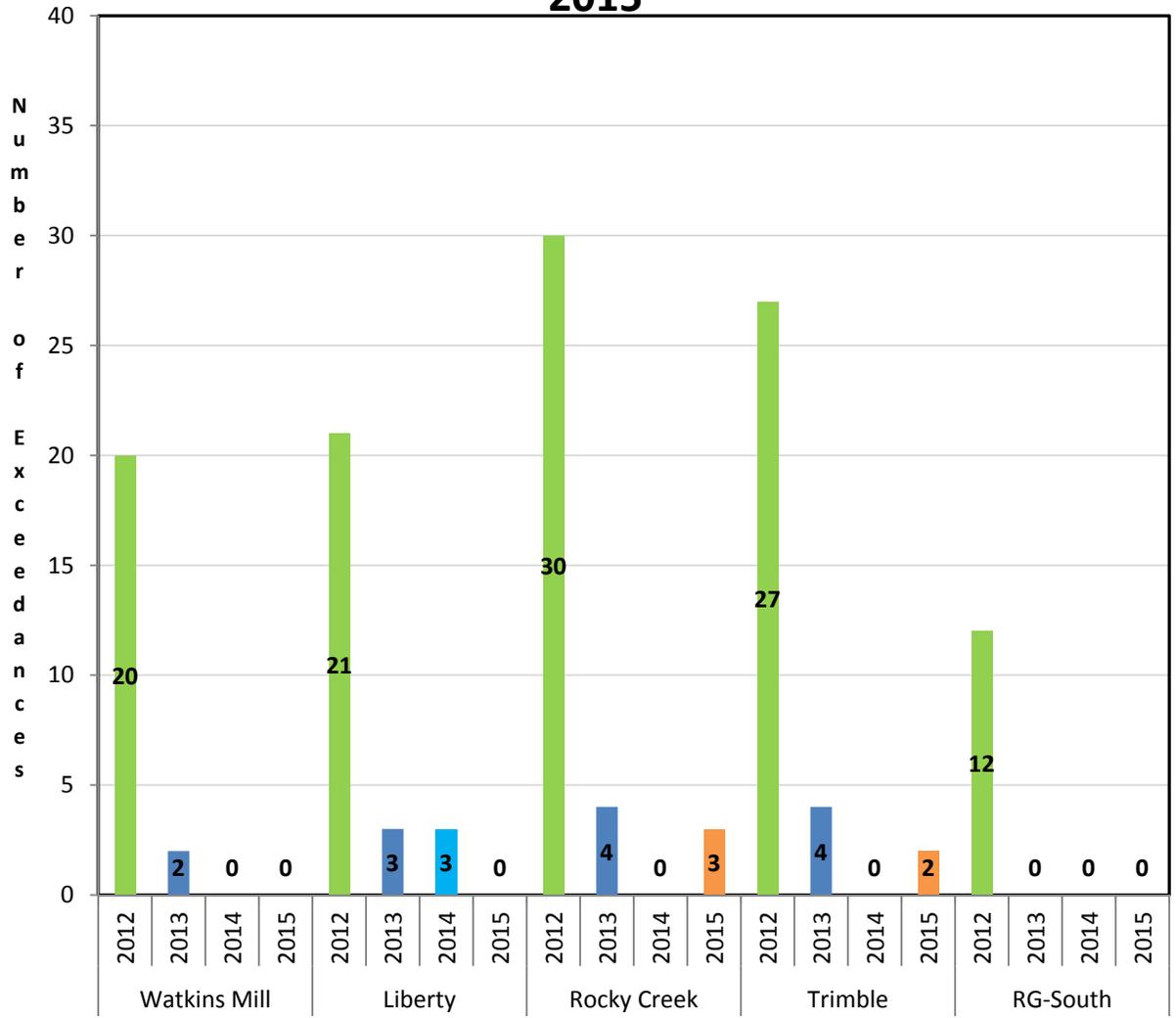
COMMENT #3: Mr. Jack Jones, Missouri Air Conservation Commissioner, requested histograms of the data for each of the monitoring sites along with information on exceedance days.

RESPONSE: In response to the request, the air program's monitoring staff compiled histograms for monitor locations in the St. Louis area, Kansas City area, Springfield area, and outstate Missouri. The histograms display the number of days per year where the maximum daily 8-hour average ozone concentration exceeds 70 parts per billion (ppb). The days of exceedance are calculated against the 2015 ozone standard of 70 ppb for all years to examine the trend in exceedances over time. For all monitor locations, the 2012 year showed the most exceedances of 70 ppb due to summer drought conditions. Since 2012, all locations have experienced less than 10 exceedances of 70 ppb per year.

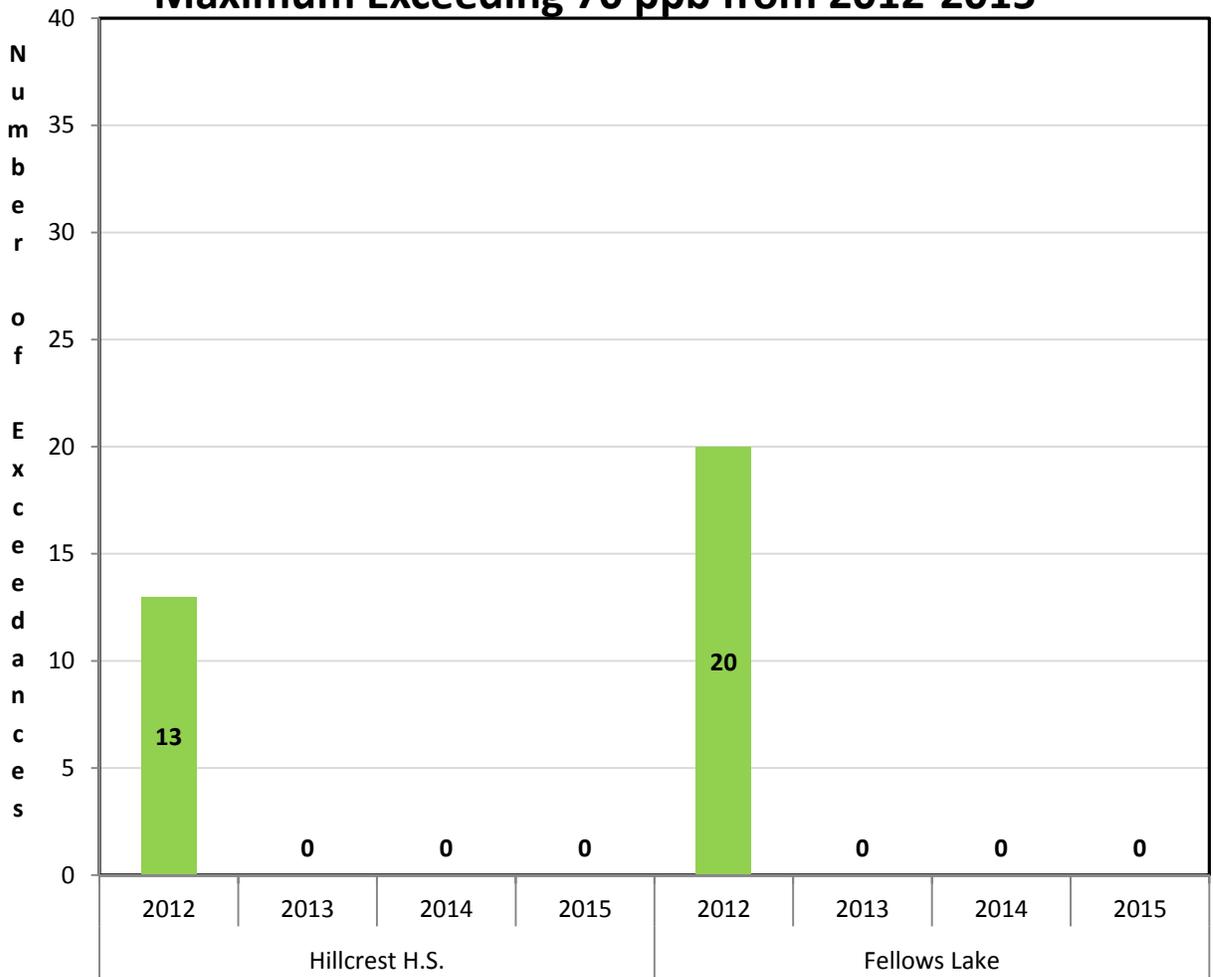
St. Louis Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012-2015



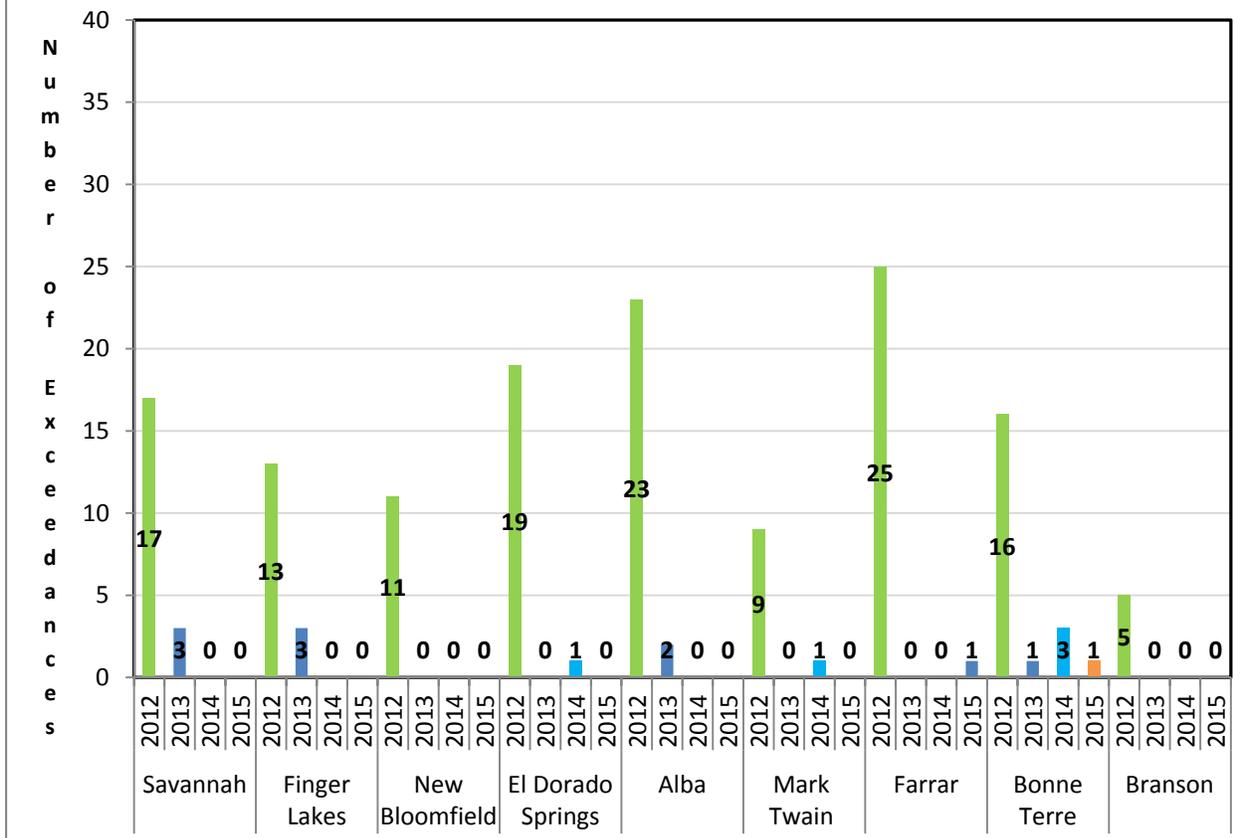
Kansas City Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012- 2015



Springfield Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012-2015



Outstate Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012-2015



COMMENT #4: Mr. David Zimmerman, Missouri Air Conservation Commissioner, requested a comparison of the design values for the 2015 ozone standard (70 ppb) to those for the 2008 standard (75 ppb), specifically on a per-year basis from 2008 forward.

RESPONSE: In response to the request, the air program is providing this graph to demonstrate ozone monitoring trends for the St. Louis area, the Kansas City area and outstate Missouri (Mark Twain State Park). The design values at the end of the 2008 ozone season were 85 and 81 ppb, respectively, for the highest design value monitors in St. Louis and Kansas City. At the end of 2015, the design values have decreased to 71 ppb for St. Louis and 68 ppb for Kansas City. Over the same time period, the design value for the rural Mark Twain State Park monitor decreased from 71 ppb to 59 ppb. Additional information regarding monitoring and design value trends may be found in the 2016 Air Quality Report presented to the commission on March 31, 2016:

<http://dnr.mo.gov/env/apcp/docs/presentation-airqualityanalysisreport-march312016.pdf>

Ozone (O₃) Ambient Air Monitoring

1996-2015 8-hour Ozone Design Value Trends
St. Louis & Kansas City Areas
(*Quality Assured Data Through December 31, 2015)

