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.

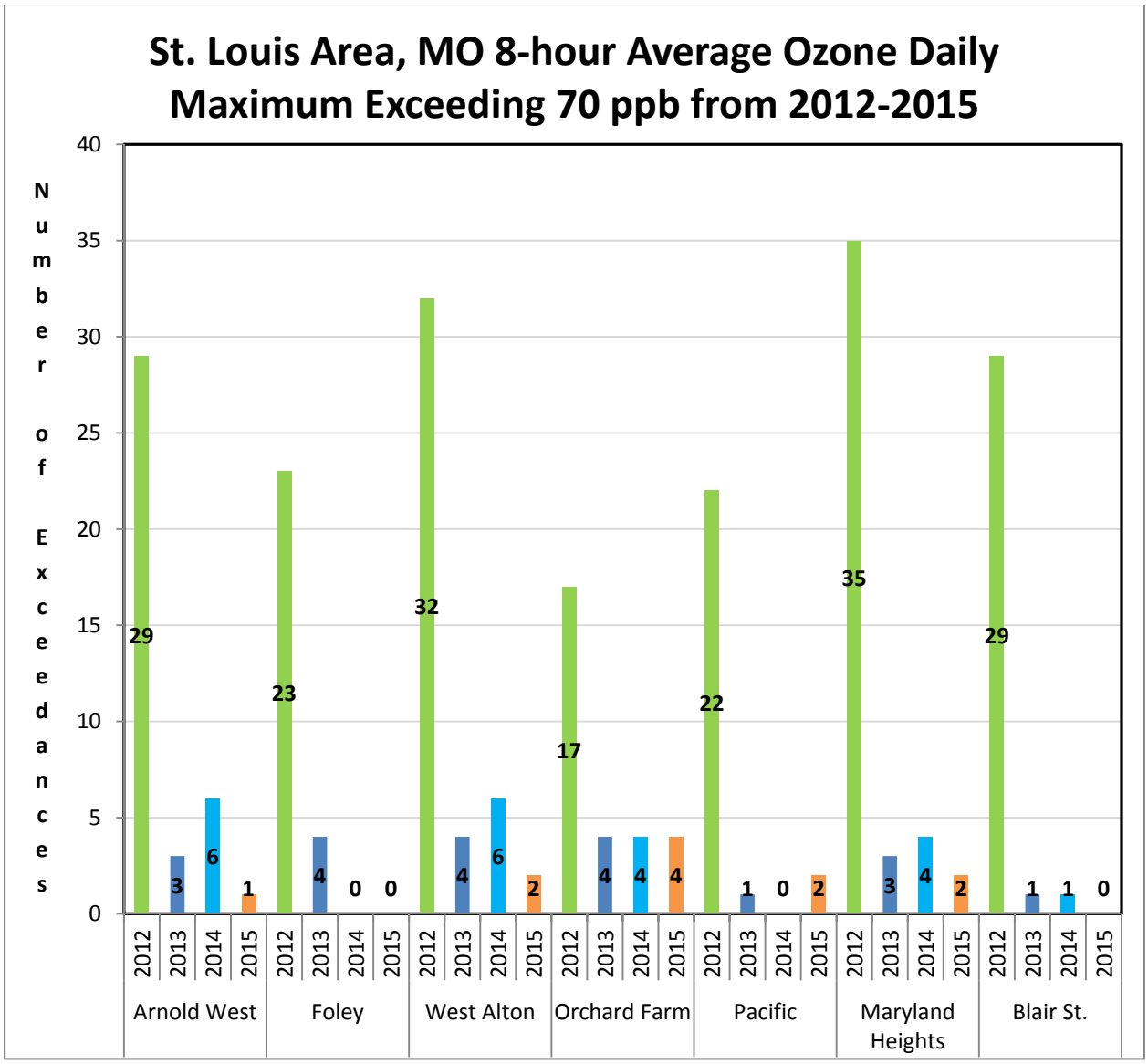
RESPONSE: Ozone monitors measure ozone concentrations continuously and report 1-hour ozone concentrations for each hour of a 24-hour day. There are 214 days in the ozone season (April 1st to October 31st) so, assuming all measurements are complete and valid, each ozone monitor produces a maximum of 5,136 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

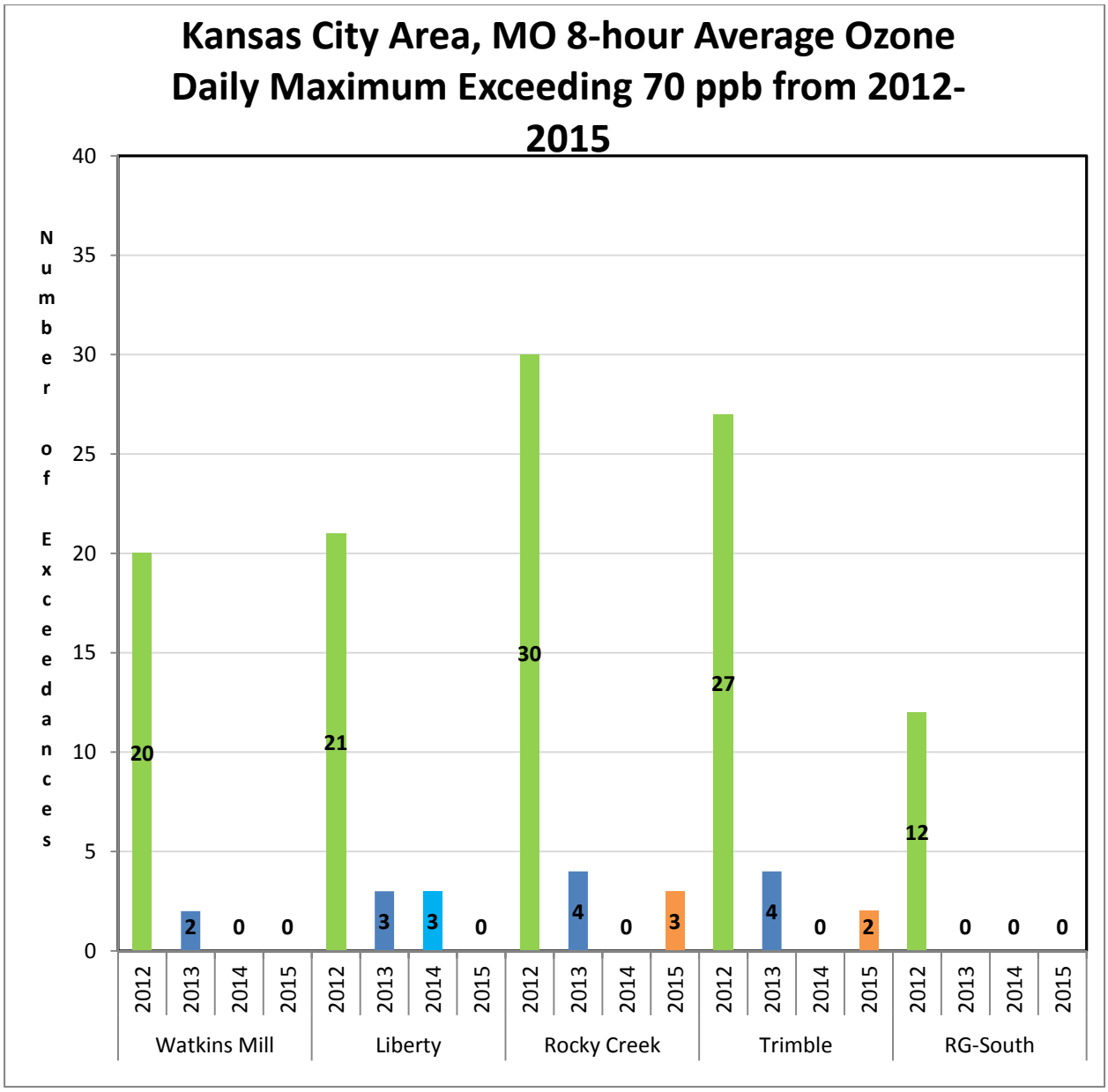
In response to the commissioners' inquiries, the air program reviewed the monitoring data in the

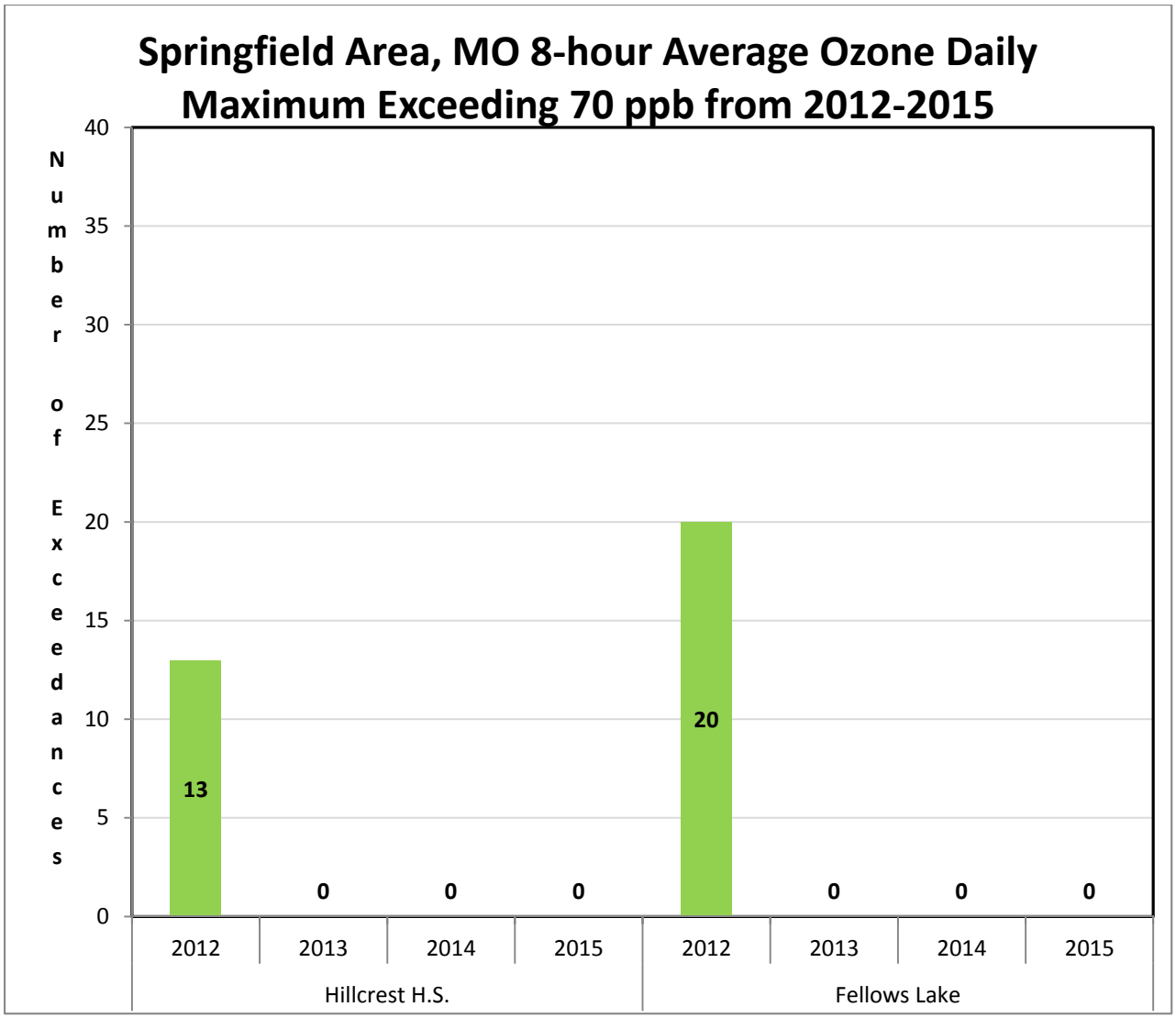
recommendation. During the review, the air program updated three design values in Table 3 and Figure 2 to match the certified 2013-2015 design values (Branson, Hillcrest, and Rocky Creek values revised upward by one part per billion each). The revised document contains the updated design values but the 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.

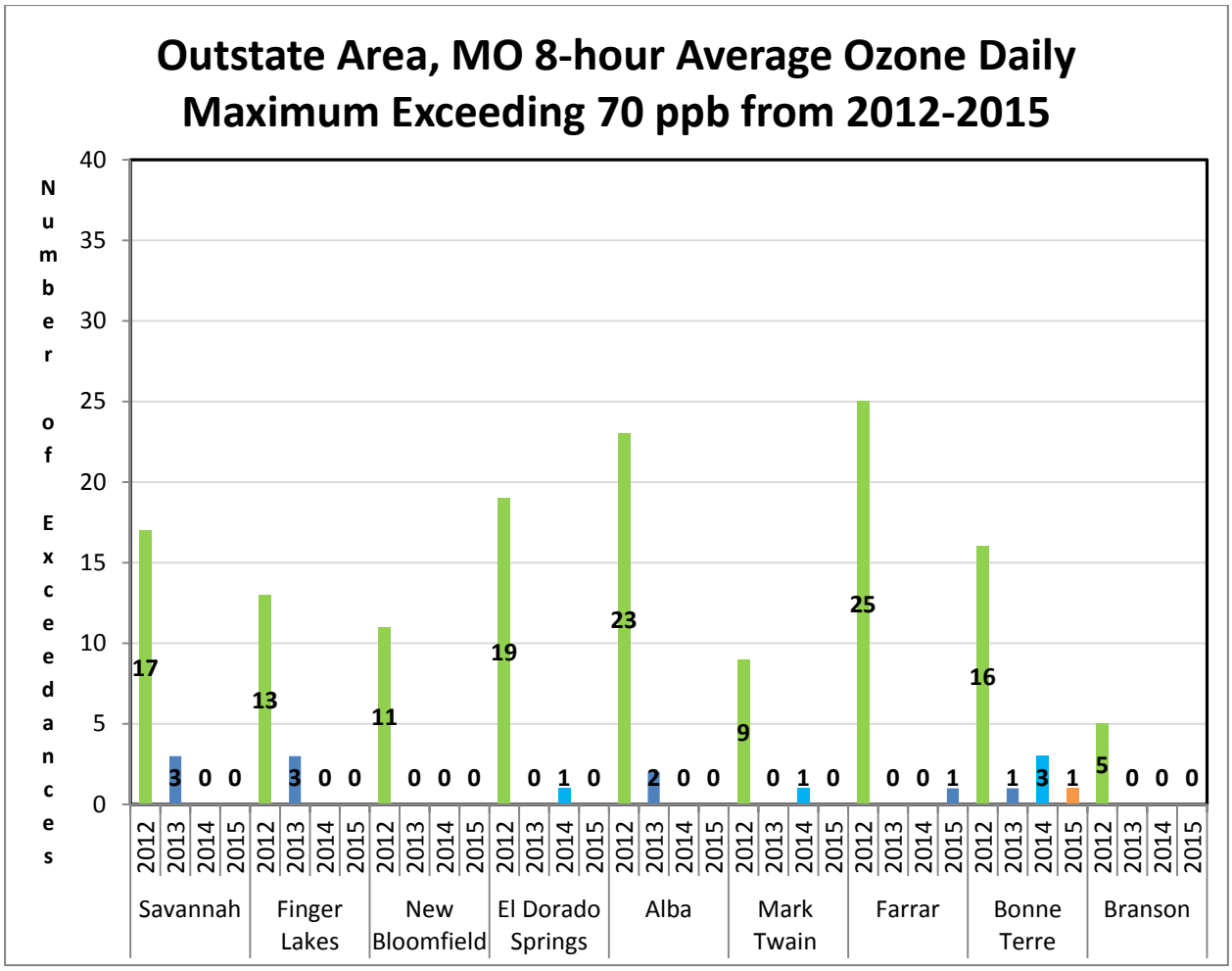
COMMENT #3: Mr. Jack Jones, Missouri Air Conservation Commissioner, requested histograms of the data for each of the monitoring sites along with information on exceedance days.

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
Number of Exceedances
40
35
30
25
20
15
10
5
0
29
3
6
1
23
4
0
0
32
4
6
2
17
4
4
4
22
1
0
2
35
3
4
2
29
1
1
0
2012
2013
2014
2015
Arnold West
Foley
West Alton
Orchard Farm
Pacific
Maryland Heights
Blair St.


Kansas City Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012-2015
Number of Exceedances
40
35
30
25
20
15
10
5
0
20
2
0
0
21
3
3
0
30
4
0
3
27
4
0
2
12
0
0
0
2012
2013
2014
2015
Watkins Mill
Liberty
Rocky Creek
Trimble
RG-South


Springfield Area, MO 8-hour Average Ozone Daily Maximum Exceeding 70 ppb from 2012-2015
Number of Exceedances
40
35
30
25
20
15
10
5
0
13
0
0
0
20
0
0
0
2012
2013
2014
2015
2012
2013
2014
2015
Hillcrest H.S.
Fellows Lake



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

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Ozone (O_3) Ambient Air Monitoring