Appendix C

2014 Ozone Season Day Emissions Inventory Summary (Missouri Counties Only)

2014 Ozone Season Day Emission Inventory Summary

The 2014 ozone season day emissions for the Missouri counties in the St. Louis nonattainment area were estimated for use in the maintenance plan for the 2008 ozone standard. These emission estimates originate with the 2014 annual emission inventory and come directly from reported facility information for point sources, or are calculated from annual values for nonpoint and mobile sources. Details for each source category are provided after the table.

Table C-1 2014 Ozone Season Day Emission Summary (tons per day)

County Name	Source Category	CO	NO_X	VOC
Franklin County	Point Sources	7.00	21.13	2.08
Jefferson County		9.00	17.96	1.91
St. Charles County		3.44	21.005	4.12
St. Louis County		21.99	16.79	2.87
St. Louis City		6.90	4.78	2.88
Totals *		**48.33**	**81.70**	**13.86**
Franklin County	Area Sources	3.20	0.46	5.80
Jefferson County		5.45	0.42	5.44
St. Charles County		9.43	0.89	11.50
St. Louis County		34.24	3.76	35.88
St. Louis City		2.08	0.93	11.91
Totals *		**54.40**	**6.47**	**69.81**
Franklin County	Onroad Mobile Sources	31.78	8.00	2.57
Jefferson County		51.70	12.87	4.65
St. Charles County		85.19	19.68	7.75
St. Louis County		474.57	118.61	73.21
St. Louis City		45.71	10.92	4.23
Totals *		**688.95**	**170.08**	**92.41**
Franklin County	Nonroad Sources	18.13	5.24	2.91
Jefferson County		29.14	3.04	2.72
St. Charles County		62.28	7.40	5.25
St. Louis County		313.02	17.53	19.61
St. Louis City		47.00	5.23	2.92
Totals *		**469.56**	**38.44**	**33.42**
Grand Total *		**1,261.24**	**296.69**	**209.50**

* Note: Figures may not total exactly due to rounding.

Point sources

Point source annual and ozone season day emissions are reported directly from permitted facilities through their annual emissions report, or EIQ. Details of the collection of these reports appear in Appendix D, including quality assurance procedures. Additional, EPA considers airport landing and takeoff emissions from aircraft as part of the point source inventory as

specific locational coordinates can be assigned to these known locations. In the 2014 inventory, aircraft landing and takeoff emissions are included within the point source inventory, as compared to the 2011 inventory when they were included in the nonroad category. Since these emissions are relatively small, the move does not significantly impact the category emission totals, and the total area-wide emissions are unaffected. Airport ozone season day emissions are calculated from annual emissions using temporal allocation factors from EPA's Emissions Modeling Clearinghouse Temporal Allocation.

Nonpoint sources

Nonpoint emissions are typically estimated at the annual temporal level. To convert annual emissions to ozone season day emissions, EPA recommends the use of temporal profiles created as part of the 2011 Modeling Platform (2011v6.2) as of 2015. Previous SIP ozone season day calculations relied upon the Emissions Modeling Clearinghouse (EMCH) temporal profiles developed in the 1990's, and this will be the first Missouri SIP submission to use an updated methodology. The files included in ge_dat_for_2011v2_temporal.zip are found in the ancillary data subfolder at ftp://ftp.epa.gov/EmisInventory/2011v6/v2platform.
The method includes monthly, weekly, and hourly profiles and a reference crosswalk to map individual emission processes by source classification code (SCC) to the temporal profiles. The temporal profiles allow for different emission processes to vary through the year and throughout the week. For example, some emission processes are concentrated in a specific season (wood burning, agricultural burning) and some are spread evenly across the year (industrial emissions). Likewise, some activities occur mainly on weekdays (industries), some peak on weekends (recreational burning), and some are spread evenly through the week (gas stations, wastewater treatment). To calculate ozone season day emissions from total annual nonpoint emissions, the monthly profile is determined from the crosswalk, and the July portion of annual emissions is calculated. With the July total monthly emissions calculated, the emissions are then divided up equally to all weeks of the month by dividing the monthly total by 31/7 (4.42 weeks in July 2014). From the July weekly emission estimate, the matching weekly profile by SCC is used to estimate the portion of emissions that happen on Tuesdays. The calculation of ozone season day emissions uses a typical Tuesday in July as a representative ozone day to be consistent with previous SIP inventories. There are a few SCCs that are new to the emission inventory process for 2014 and do not appear in EPA's modeling platform which is based on the 2011 inventory. These SCCs were added to the temporal profile manually by choosing a similar SCC temporal profile record.

Onroad and Nonroad Mobile Sources

2014 annual and ozone season day emissions for both source categories are estimated from the MOVES2014 model, version 20141021CB6v2. The details of creating the input files to run the model are given in Appendix D. After running the model, the output files allow the user to view

emissions at temporal increments down to a single hour of the year. To compute ozone season emissions consistent with the July weekday choice for the nonpoint sector, the MOVES output tables were queried for monthid 7 (7=July) and dayid 5 (5=weekdays). The total of road types, vehicle types, fuel types, and emission processes for all hours within a single weekday in July equates to the total ozone season day emissions for either onroad or nonroad sources.