Some minor comments on Feng et al. 24 January 2020

Throughout the paper, in the text and in many figures (e.g. Figs. 2,3,5,8,9,10,12,13) talk about annual concentrations for the warm and cold seasons. Technically these would be “seasonal” concentrations rather than “annual”. However, the reader probably understands that. Never-the-less, “seasonal” would be a more accurate term.

Pg 3 Line 17 the Clean Air Act….

Pg 4 Line 22-26 The sharp increase in NOx emissions in the USA is due to a methodology change, not a real drastic change in NOx emissions. See National Emissions Inventory, https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data The change in NOx methodology from 2001 to 2002 is described in the "README" tab on the "Average Annual Emissions" national emissions trends spreadsheet. (I have also discussed this matter with an NEI person.)

Here is a statement in that file:

> **Updates since June 12, 2012**: Now using NEI 2008 v3 at the Tier 1 level.
> 2006 and 2007 were recalculated using interpolation between NEI 2005 v2 and NEI 2008 v3.
> 2002 and 2005 MOVES data were used to update 2002-2007. The change in model
> resulted in noticeable changes in highway emissions from 2001 to 2002 for various pollutants

NEI does the same thing with NH3 emissions 2000 to 2001, only in that case it is a significant decline in NH3 emissions due to methodology change.

Pg 14 line 3 ….the period was still significant, …..

Pg 17 Line 3 ….or a weak increasing …..

Pg 27 line 9 should this be, “The disparity of the reduction of SO2 and SO4=” ?

Pg 27 lines 15 & 16 “…. but also a larger fraction of SO2…..”

Pg 29 lines 3 and 4 correlations are shown on Figure 9, not Figure 10

Pg 29 line 13 “…. sea salts ….”

Pg 32 line 22 With the implementation of Title IV of the 1990…..

Pg 34 line 23 “… NH3 in the region was in excess…..”

Figure S1 & S2 have much detailed information in them, but the legends are nearly useless unless (as recommended) it is enlarged at least 300%. It would be helpful if the species of concern is pasted on each map so it can be read at 100%. It would be very useful if the figure legends could be blown up some more. What if someone only has a hard copy of this manuscript? Also the species listing in the

figure caption is not in the same order as they appear as maps. It would be good to have the listing in the caption follow the layout of the maps.

Figs. S3, S4, S5 Again, if the figure legends could be enlarged, it would be very helpful.

Overall, I liked this manuscript. There is a lot of material here, and it is a nice summary and analysis of eastern North America air quality data during a period of generally large emission changes of SO2 and NOx.