DRAFT 07/31/17

Federal/State Technical Work Collaboration Group

Conference Call Summary

Thursday, July 20, 2017

*Welcome*

Theresa Pella (CenSARA) welcomed everyone. Because of the large number of participants roll was not taken.

*Overview and discussion of EPA’s 2028 Regional Haze apportionment modeling results*

Brian Timin (OAQPS) referenced the presentation sent out prior to the call as he talked. He reminded everyone the intention of EPA’s work was to help inform SIP development for the 2021 SIPs; however, this version of work may not be quite ready to use for SIP development. EPA would like to work with the MJOs, states, and FLMs to improve on the work and will be ready to talk about follow-up discussions when formal documentation is ready in late August. EPA learned a great deal through this exercise because the agency hadn’t done much modeling before specifically for regional haze. Low concentrations, especially in the West resulted in modeling performance issues that probably previously existed, but with a renewed focus on regional haze, need to be addressed. Due to overall uncertainty in the results, contribution information from some source categories is questionable and there is a need to look at chemistry and global contributions closer. EPA used the current draft guidance natural conditions numbers, updates to these number may be needed.

Brian reminded everyone the 2011 base case year files are the same ones for the initial 2015 NAAQS Ozone NODA modeling. The NODA documentation for the 2023 emissions is very similar to 2028 – EPA just extended to the out year. The work used CAMx PSAT to perform nationwide level modeling for 19 source categories. It would be helpful to look at the vintage of 2028 international emissions in GEOS-CHEM. Windblown dust is not included in the current modeling platform. Offshore commercial marine was defined as more than three miles offshore from state boundaries.

The CAMx model with a 12 km national domain with no nested domain turned out to be problematic because numerous Class I areas are fairly close to the edge of the 12km domain. Did find that the model bias is lower on 20% most impaired than on 20% worst days. Winter nitrate is over predicting in the northeast, northern plains, Pacific northwest, and the southeast, under in the Midwest and desert southwest. Summer sulfate in the southwest is also under predicted. The model is also under predicting sulfate with in the four corners; nitrate high in Missouri and Oklahoma and the northwest on the 20% most impaired days. Staff need to begin thinking about small levels of pollutants rather than numbers closer to the PM NAAQS.

Q&A

* MARAMA – looking at the 20% most impaired days in the northeast, there is seasonal variability, but when compare as a region, may not see that variability.
  + Brian – could look at model performance by season and month to see differences and would be good to look at 20% most impaired days on daily basis.
* Georgia – verify which EPA draft natural conditions were used?
  + Brian – it’s the new metric in the draft Regional Haze guidance, so is different than the Trijonis numbers used last time. States and regions should not take the new numbers as the final answer but look closer to see if adjustments are needed.
* WESTAR/WRAP – suggest careful use of the terminology used to describe model performance because the model is not evaluated by source categories; only chemical species.
* North Carolina - OH 8 refers to visibility impairment with the 2nd bullet referring to an adjustment for natural?
  + Brian – OH 18 shows examples of the work using both the “worst” and “impaired” (adjusted for natural) equations.
* Nevada – looking at OHs 11 and 12, estimated concentrations in the normalized mean bias for PM species – different number of sites for nitrate and sulfate?
  + Bran – the maps were developed using two different software apps – will take a look at to be sure are correct.

Brian continued with the presentation starting with OH 20, which showed an overall 50% reduction in NOx and 64% decrease in SO2 from 2011 to 2028 for US anthropogenic source categories. EPA used the Photochemical Modeling Guidance procedures with SMAT, a newer version of MATS (will be public soon). Another outstanding topic that needs further discussion is what method to use to adjust the 2064 endpoints.

OH 25 shows the modeled change in dvs for the 20% most impaired – in the west, there were generally small changes – some under ½ dv. OH 26 is an important slide – the red and blue in the circle represent whether a Class I Area is projected to be above (red) or below (blue) the 2028 unadjusted glidepath. The grey part of the circle, if narrow, means the model performance is good; if the grey is large, means the model performance is worse. The vertical line in the circle shows a measure of uncertainty – sites with a line through them mean there is a high level of uncertainty with regards whether they are above or below the glidepath.

* North Carolina – some sites on OH26 are missing?
  + Brian – may be missing because the site does not have valid base year data or valid 2011 data, but can verify. The revised rule says if don’t have five years, use the most recent, so could use two-three years if that makes sense for a Class I Area. Also, if there is not complete 2011 IMPROVE data, then the visibility cannot be projected to the future.
* Georgia – seeing the same thing, but when the VISTA project was done, states filled in missing data for those sites for the SIPs, so it is available – possibly could get from ARS. WESTAR/WRAP – agree there shouldn’t be any incomplete base line data – just need to go back to the SIPs where they were used.

OHs 29-30 show how PSAT tracked PM – did not track SOA or sea salt specifically though. Fugitive dust – some mixture of international and natural are embedded in the work, so were grouped into the “unknown” category. For the 2028 boundary conditions the model shows a significant amount of nitrate coming from Canada down as far as Oklahoma and Arkansas, with large contributions to the Northern Plains states. Sulfate in July from Mexico is also a significant contributor to West Texas and New Mexico in particular. In OH 33, the scale was lowered to .05 ug/m3, which helps to show the largest impact from Canada/Mexico sources. One of the most important messages in OH 36 is that boundary conditions tend to dominate in many Class I Areas, another reason to better understand model issues.

EPA will be producing a graph like the one in OH 38 for all Class I Areas with the glide path from 20% most impaired days metric. Need to keep in mind that these graphs have converted dv numbers to extinction.

* Georgia – for 2028, it would be useful to see the breakdown of species to see changes from 2011 – 2028. WESTAR/WRAP - agree, especially for fires.
  + Brian – agree and think can do that.
* OTC – is it possible to include natural conditions as well?
  + Brian – yes, believe so.
* MARAMA – what’s range for the 2028 numbers mean?
  + Brian – represents the uncertainty displayed on the national map.
* New Hampshire – is a portion of the unknown bar in 2028 anthropogenic?
  + Brian – yes, some could be, especially those areas close to international boundaries. Need to redo some work to get better estimate of what is truly US anthropogenic and whether there is a need to adjust the glide path, for example how much would international adjust the path upward… Suggest tackling one thing at a time in making adjustments. OH 46 recaps the list of things that need work and OH 47 has suggestions on where to start – ex: use the latest version of CAMx and GEOS-CHEM, a larger domain to minimize boundary conditions, etc. OH 48 suggests things that can be done together to help get things started.
* Kansas – the State had significant decreases in NOx and SO2 since 2011, but not sure the 2028 numbers reflect that.
  + Chet – when the 2028 modeling platform is released in late August, states are encouraged to look at the numbers and let EPA know if they need to be updated.
* North Carolina - How long did it take to run the CAMx model? How did EPA do the post processing to get into dvs?
  + Brian – run time is dependent on the computer, but normally ran for ½ hour/day (running on 64 CPUs) with the source categories case taking about twice as long.
* CenSARA – it may be good to try to have EPA attend the December national workshop to build on the conversation today.

*Review and Status of Action Plan Highlights*

Theresa gave a brief explanation of the status of the Action Plan, based on action items from the June 2016 meeting and what’s been accomplished since then. The document should help the Group keep in mind activities that were identified then that may still need to be addressed at some point.

*Logistical adjustment to Collaborative Group conference calls*

Chet said EPA is still working through comments on the 2015 Ozone NODA, though there is no specific direction yet on future modeling. However, they are updating the emission inventories based on comments received. He recapped that the Collaborative Group was started as an EPA/MJO group to hold technical discussions as needed. In thinking about how to move forward, it makes sense to hold quarterly calls for the larger group (including all states and regional offices) to provide updates and feedback, but on a monthly basis keep at EPA/MJO level to be able to get into technical details. There is an understanding that some states do technical work for the region, so, MJOs could decide to bring them to the monthly calls as they think appropriate.

*Open mic*

Serpil (CAMD) reminded everyone of the EPA regional office/MJO call scheduled for Thursday, July 27th on the ERTAC/IPM work.

OTC – by end of the week, the 2017 Ek model ready files should be with OTC – if anyone else needs, let Joseph Jakuta know and he’ll coordinate distribution.