

## Regional Haze Control Measures Subcommittee Conference Call

August 22, 2018 10:00 – 11:00 (MDT)

Call In: 1-800-768-2983 Passcode: 4918837035

### 1. Introductions and Roll Call

*Roll call – Jeremy Neustifter (CO), Kirsten King (NPS), Amanda Brimmer (RAQC), Frank Forsgren (NV), Kerwin Singleton (NM), Tina Suarez-Murias (CA), Tom Moore (WRAP), Pat Brewer (NPS), Elias Toon (AZ), Craig Henrikson (MT) WA?*

#### Roundtable (California)

- See WRAP website for posted items
- Fire and Smoke Work Group – working on emissions for 5-year baseline to project to 2028 for modeling. Want special/temporal inventory for 2014.
- Oil & Gas Work Group – Contracted with Ramboll. Working on improving 2014 inventory. Trying to coordinate with all states to report point and area source for SMOKE ready files by April 2019
- Regional Technical Operation Work Group – contractor finished reports comparing 2014, 15, & 16 for base years. Each year has pluses and minuses. 2014 low fire year but representative as far as getting modeling started.
- Technical Steering Committee - meets every month and posts their notes; see notes to keep abreast of what they're doing
- Other RH subcommittees – notes on WRAP webpage

### 2. *Draft WRAP Reasonable Progress Source Identification and Analysis Protocol for Second 10-yr Regional Haze State Implementation Plans*

#### a. General thoughts and comments: open mic

Colorado - Good discussion on consideration of visibility and good overview of past and current efforts. Seeking subcommittee input up front if anyone wants to weigh-in on whether the draft document is helpful and whether the subcommittee should continue to refine and use moving forward?

Montana – Took a look and thought it was very helpful. Q/D, species, etc. on agenda are important to discuss.

#### b. What Species will states concentrate on for analysis?

Colorado - First round looked at SO<sub>2</sub>, NO<sub>x</sub>, and PM<sub>10</sub>. Colorado will likely pursue these again. Lots of discussion and uncertainty on VOC impact on visibility.

California – Went through Ramboll's report and looked at worst days to see primary contributors to RH and they are organic mass, sulfate, nitrate, and coarse mass. Sea salt very little impact. The percent contribution from VOC appears to be very low and if it can be documented, it would be helpful to justify strategy of focusing on other precursors first.

NPS – When we look at Q for impact, we look at NO<sub>x</sub>, SO<sub>2</sub>, SO<sub>4</sub>, and PM). SO<sub>4</sub> is sometimes in SO<sub>x</sub> and sometimes not.

Nevada – Looked at monitoring data. See 1/3 sulfate, 1/3 nitrate, 20% from coarse mass. Elemental carbon is under 20%, so not a contributor. Will focus on SO<sub>2</sub>.

Washington - SO<sub>2</sub>, NO<sub>x</sub>, so<sub>4</sub>, and pm.

New Mexico – NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub> and SO<sub>4</sub>

Montana – PM<sub>10</sub> filterable, NO<sub>x</sub>, SO<sub>2</sub>, SO<sub>4</sub>,

Colorado - Looking at over 100 tons as threshold. In Colorado lots of fugitive dust which is a significant source of PM emissions. From control strategy standpoint, it probably doesn't make sense to look at sources of fugitive emissions. May depend on definition of fugitive in various states or are we looking at only point sources?

Nevada – Haven't gotten to that point yet.

California – Biggest PM<sub>10</sub> contribution to facility inventory in CA is military base with lots of dirt roads. Would look at impact on nearest class one area and see what its Q/d is and what DOD can do. What are the prevailing winds? If you have a high source, you should look at the winds on the MIDs. When you look at the inventory on a facility-by-facility, you can't ignore VOCs.

NPS – Are using Q/d as basis for determining sources that are having an impact. Using 2014 NEI and pulling PM<sub>10</sub>.

### **i. State inventory differences**

Colorado – Want to feel out all WRAP states regarding inventories. Colorado requires reporting at 1 ton for NO<sub>x</sub> and VOC in the NAA and 2 tpy for SO<sub>2</sub>, and PM so have good handle on stationary sources. What are reporting thresholds in other states?

California – Some sources less than 1-ton report; 17,000 sources report to CA's inventory.

New Mexico – Only major sources are required to report; 175 sources reported in 2017.

Montana – Permitting is 25 tpy. If a source holds a permit, they have to report emissions. More variability in emission factors, but sources are expected to report if any emissions, so resolution is probably 1 ton.

Washington – About a 1-ton threshold.

Colorado - May make sense to use 100 tons as screening threshold. Also need to decide whether we want to unify our screening or not

### **c. Weighted Emissions Potential (WEP)**

- i. WEP Explained**
- ii. How can it be used by states for screening sources**
- iii. How can the WRAP make the WEP most useful to states?**

Tom provided overview of WEP:

- Reminder, in 1<sup>st</sup> planning period, control strategy planning effort was really focused on BART requirement (EPA rule that appeared in 2005 and required states to develop a protocol with deciviews and limits and things for states to consider for BART sources). This was going on during the time they were doing regional modeling, so weren't doing then what we're doing now.
- Emission potential – similar as used in SE sates. Essentially what did was good gridded met fields that were provided from Reg. modeling and said “ok – we know where class one areas area, lets run back trajectories, and keep track with residence time how much time did the air mass spend going back several days getting to the class one site grid cell. Allows to look at gridded emissions by sources categories by grid cell (36km cell). But 20 source types and know quantity of annual emissions. Make more sense for steady state (point sources, O&G). Not as representative for dust or fire and not as much for EGU's today as it was 15 years ago since operated differently now. Can look at by sulfate, nitrate. Have a dimensionless # that shows relative contribution to class one area. Principally dominated by emissions in the state where the class one area is located. Allows us to normalize and determine upwind potential contribution of sources in upwind states. Used by # of states to further explain sulfate and nitrate species and to get a better sense of dust and fire. Prepared a helpful document of how that was put together. Encourage folks to read. Tool allows folks to project base and future year.

Weighted Emissions Potential Analysis methodology document:

<http://vista.cira.colostate.edu/docs/wrap/attribution/TSS%20WEP%20Methods%20June%202011.doc>

- Ideas exchanges - Similar to first round, we could build a tool with same info for this control strategy evaluation. Require some consideration in evaluation of what the contribution areas are in the west. Could be useful evaluation tool to show, in relative terms, how much a source is contributing to class one area in that state and/or downwind.

Colorado – Majority of impact is from Colorado urban areas and north-western power plants. Can we refine maps to show states? Second map in document shows all class one areas. Grid shows the emissions potential – Curt built by zooming-in on national map and made assumptions on what grid cells are what color to help understand where there are larger sources that impact RH. Could we do this in current contract? Would it be helpful to other states? If can't utilize factor of visibility, need to prove that source contributes to class one area, so need to provide more evidence. Useful from stakeholder standpoint.

Tom – Yes, but... Currently, states are in process reviewing 2014 NEI v2. For larger point sources, we all know where they are. From NEI, we could grid up sources. Good idea to have such a product be evaluated by each state to confirm/double check data. Should also provide metadata. Will be modeling at 12km grid resolution. Resolution will

be 9 times better to increased special resolution, which will improve quality of information you all will be working with. If you have 1000s of small sources like O&G or residential wood burning, how do you handle that? Need consensus approach on important (mostly nonpoint) source categories to evaluate with this tool.

Colorado – Would like to see this tool as a product for SIP planning.

California – Think it's important to know where sources are located relative to class one areas and what the prevailing winds are. Trying to imagine how this would be done on most impaired days, so want to look at wind patterns on days the wind is blowing towards facilities. When WRAP did modeling, there was some impact on best days at one CA C1 area by a single NV source. How do you reconcile which days a particular facility impacts class one areas, if they are not MIDs?

NPS – For 2014, we have the dates of most impaired days, so can do back trajectories. Or can use met data. Done both ways in SE. Back trajectory can use 2014 emissions inventory so can do that now. If you want to use 2014 met data, need to wait for that. Possible to do that with any grid cell you want. Need to determine which days and how much detail compared to cost to do it.

Tom – WEP is one evaluation tool. The protocol and graphic refer to Q/d, which is another tool and simpler to run. States can run same as next state to help corroborate which ones apply. Certainly met on EPA's most impaired days, all have unique meteorology on those days, but people don't just visit on those days and may visit on other days too. Introduces a complexity, but pretty clear when you go to 4 km, regional model performance doesn't necessarily improve because meteorology has trouble dealing with complex terrain in West. New 12 km resolution will be great improvement and has been evaluated by WRAP and EPA. If asked to recommend, would recommend 12 km. There are many pieces we can add on, but the decision on how to interpret it is up to individual states, so glad a protocol is being developed.

Nevada – Have similar concerns to Colorado. Need to prove impact to major sources. Will be running some back trajectories, but tool would be helpful for Nevada too.

Colorado – Will be a very useful tool for developing SIPs and in terms of talking to sources about potential control strategies.

MT – Most states probably already have GIS layers for stationary sources that could probably be pushed up to contractor (have for all stationary and O&G). Also, not familiar with WEP, but it develops a unit less # so each state needs to determine whether they pull it forward in a 4-factor analysis.

Tom – Protocol needs to lay out what is important to follow up on and what is too ambiguous that you can't. Deliberately did not say anything about that because it was just informational. Any sources you want to evaluate, if they don't operate consistently day-in and day-out, needs to be addressed somehow because using annual emissions doesn't work.

Colorado – See as a tool for a WOE analysis; not something relied on exclusively. Using in conjunction with Q/d

Nevada – WEP only includes cells in Colorado. Will have to be careful in looking at one size fits all when dealing with all states. When you have more rural sources, start seeing impacts coming from further distances and potentially smaller sources.

Colorado – Need to address in protocol

NPS – Need to see how O&G as an area source will be handled.

Colorado - Addressing NO<sub>x</sub> through ozone SIP may be utilized for RH as well. Not sure how to look at smaller area sources even though they make up a large % of overall emissions (New Mexico has same issue)

NPS – Maybe look at area sources in a separate mapping so don't confuse elevation of emissions (pull out point sources)

Tom – In Reg. modeling, there are some large point sources associated with O&G, but generally speaking, O&G emissions are released in first layer in model and not much buoyancy so not transported much in regional model. Frequently don't contribute a huge amount, but hard to miss them because there are so many of them. Did not explore what best technical approach should be. Sounds like folks want to do this, so should lay out how to address layer one sources, etc. We aren't going to do it just like we did before. We're going to need to button some things down and making a list of things to look into.

#### **d. 80% requirement**

Colorado - Uncertainly on whether we can include mobile. Colorado is proposing to adopt California's Low Emissions Vehicle (LEV) standards, but mainly federal government controls new vehicle standards. It's not clear in guidance on whether we can knock mobile sources off table since we can't regulate them.

#### **e. Q/d Approach – Choosing a number**

Colorado – WRAP states likely won't all be picking the same threshold for Q. Last time Colorado used 20 and may use 10 this time if it is more appropriate. 10 might not be low enough to get to 80% for other states, so should all states use 10 or should it be different for each state? Previously, EPA worked with Montana and they had to go down to 1 due to so few sources.

NPS – May need to be different for each. Don't know that you'll be able to use same Q particularly states with fewer sources.

#### **f. Can and should visibility be used as a 5<sup>th</sup> factor?**

Colorado – What can we do without a tool like CALPUFF?

Tom – That's a problem.

NPS – We recognize guidance allows this, but not sure how to do it. Curious to see what folks plan to do.

Colorado - Don't have any real solutions, so Colorado thinks of WEP as something that has more to do with visibility issues than Q/d.

Arizona – Talked to EPA and it doesn't sound like they are necessarily "disallowing" use of CALPUFF, it is just not the preferred tool.

California – What do people use for PSD?

Colorado – We use AERMOD.

Tom – May want to consider offering a menu (AERMOD, CALPUFF). One thing that will happen, like what happened with BART, is that there are many settings that can be adjusted to get different results, so it would be helpful to have a focused discussion on the pros and cons of applying a plume dispersion model. Lots of expertise in western states that do this all the time. Also could ask RTOWG folks for feedback on that. Some states may want to take it offline and do it themselves, so this perspective would be good.

### **3. Next Steps**

If any comments or changes to the document, please send them by 9/14/18.

California – Should make it a final working draft and provide to other states by October. Would like to see other states' review.

### **4. Next Call: September 26 (Wed.) at 10am-11am MDST**