NW-AIRQUEST meeting notes: 3 Feb 2022

Please note that the notes below are meant to be informative of the discussion that took place following each presentation, but have not been reviewed by the parties involved.

<u>Participants</u>

- IDEQ: Jake Wolf, Steve Miller, Brian Himes, Wei Zhang, Kimi Smith, Rong Li, Gary Reinbold, Mark Boyle, Tami Aslet, Sally Hunter, Kevin Schilling
- ODEQ: Svetlana Lazarev, Kristen Martin, Phil Allen, Jeffrey Stocum, Owen Rudloff, Dan Johnson, Anthony Barnack
- WA ECY: Chris Hanlon-Meyer, Tes Ghidey, Farren Thorpe, Paul Rossow, Beth Friedman, Anna Ya-Chun Tai, Rylie Ellison, Matt Kadlec, Kimi Matsushima, Teresa Lorenz, Jill Schulte
- PSCAA: Phil Swartzendruber, Graeme Carvlin, Erik Saganić, Matt Harper
- SRCAA: Mark Rowe
- ORCAA: Odelle Hadley
- LRAPA: Lance Giles
- Nez Perce: Julie Simpson, Andrea Boyer, Mary Fauci
- WSU: Von Walden, Ana Carla Fernandez Valdes, Amin Vahidi
- WA DNR: Carolyn Kelly
- USEPA: Jay McAlpine, Nicole Briggs, Erin McTigue, Bob Kotchenruther
- USFS: Bret Anderson
- WRAP: Tom Moore

<u>Notes from Discussions</u>

AIRPACT Update (Von Walden, WSU)
- A question that has been raised is when the background concentration tool will need to be updated. There was no discussion at this meeting; this will be discussed over e-mail in the coming months.

Preliminary Work on Smoke Taint of Grapes at Wenatchee and Yakima Vineyards (Ana Carla Fernandez-Valdes, WSU)
- Nicole Briggs: How will you improve the ML forecast for the wineries?
  - Ana Carla: We're working on a new ML model that relies on new instruments at the sites.
  - Von Walden: The new instrumentation ranges from low-cost sensors to more advanced set-ups. We're also looking at interpolation to fill in the gaps in the model.
- Phil Swartzendruber: do grapes absorb more phenols at different times in their life cycle?
  - Ana Carla: this is one of the science questions that is part of the project. We have some results from Australia but it's hard to apply their results to our area because their fires and grapes are different, so mostly the underlying science is the only part we can share.
  - Von: Tom Collins has hoop houses of grapes that he's using for experiments and has found that the age of the smoke impacts smoke taint.
  - Phil: it's interesting to think about met conditions like dry air masses, in addition to the chemistry.
- Svetlana Lazarev: how do you assess wine quality?
  - Ana Carla: I don't have information on this. It's the wine experts who do this.

Development of Significant Emission Thresholds for Oregon's Short Term NAAQS Program (Kristen Martin, ODEQ)
- Jay McAlpine: for PM2.5, did you take into account secondary PM2.5 impacts (e.g., SO2/NOx conversion to PM2.5)?
    - Kristen: we didn't for the development of these values, but that's something that we will look at as we go through the preliminary trial period.
    - Phil Allen: this is an emissions based study, so unless we determine in advance the amount of emissions that contribute to secondary PM2.5 development, it would be hard to parse this out. Also, the background concentrations include secondary and primary PM2.5.
- Dan Johnson: DVs and attainment status are impacted by wildfires/exceptional events. How does this impact your calculations?
    - Kristen: We believe the background concentrations don't have a significant contribution from wildfires.
    - Anthony Barnack: Exceptional events are only accepted when they have regulatory significance. We can't get data that we believe contains wildfire influence excused, e.g., in Klamath Falls and Medford. In 2017, Medford was heavily influenced by wildfires.
- Graeme Carvlin: it would be interesting to know the coverage on a population basis, not just a geographic basis.
- Steve Miller: it seems like a lot of data comes from the background concentration tool. Weren't exceptional events taken out even if they weren't concurred by the EPA?
    - Kristen: that is my understanding. Although the question remains where we draw the line for future analyses/ updates to the background concentration tool.
    - Jill Schulte: Only extreme outliers were removed from the background concentration lookup tool, so there likely is still some wildfire-influenced data (especially in summer 2015). Outliers were detected using the adjusted boxplot method.

Methodological Challenges in Assessing Environmental Burdens and Benefits (Owen Rudloff, ODEQ)
- Dan Johnson: when will it be available to us or the public?
    - Owen: I can share it now within ODEQ, but I'm still waiting for approval for public distribution.
- Steve Miller: does ODEQ have a dedicated department for vulnerable population issues?
    - Owen: we do not. All of our work is staff driven.

Update on IDEQ Machine Learning Air Quality Forecasting Tool (Wei Zhang, IDEQ)
- Nicole Briggs: why is the afternoon bias corrected model doing a little better than the morning bias corrected model?
    - Wei: we have more observations to work with for the afternoon bias correction and the met tends to be more stable, so that helps improve the model results.
- Svetlana Lazarev: how many days out do you forecast and are subsequent days less accurate?
    - Wei: two days and yes, the second day tends to be less accurate.
- Anthony Barnack: it's interesting that for the ozone at St. Lukes (slide 13), the forecast was so accurate the first three days, but not the subsequent days with wildfire influence. This tool may be able to provide information on the ozone contribution from wildfires, which may be helpful to people doing exceptional events.
    - Wei: yes.

Behavioral Changes and a Warming Climate Flip Seasonal PM2.5 Maximums on the Olympic Peninsula (Odelle Hadley, ORCAA)

- Phil: FYI, the same questions that you're looking at are what inspired my box model, which has great correlations between met conditions and PM2.5.

Ethylene Oxides in Western Washington (Beth Friedman, WA ECY)

- Phil: what's the detection limit on the Picarro?
    - Beth: The 5-min DL is about 100 ppt, and we average to an hour.
- Matt Kadlec: were you able to rule out interference by acetaldehyde and methanol from the lumber mill in Raymond?
    - Beth: we weren't, but are thinkin
    - g about this issue.
    - Odelle Hadley: we also contacted dentists to make sure they weren't doing sterilizations, we looked at wind direction, and we also talked to other locals about potential sources.
- Erik Saganic: did you buy the Picarro?
    - Beth: we rented it.