South Coast Air Quality Management District
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DRAFT MINUTES
SCIENTIFIC, TECHNICAL & MODELING PEER REVIEW MEETING

Thursday, August 3, 2023
2:00 P.M.

1. Welcome, Introductions, and Approval of Minutes

Ian MacMillan, Assistant Deputy Executive Officer, Planning, Rule Development and Implementation (PRDI), called the meeting to order. Because some STMPR members were arriving late to the meeting, there was not enough quorum to approve the minutes, and this item was moved to the end of the meeting along item 6. For additional details on Agenda item 1, please refer to the Webcast beginning at 00:00.

Comments from Advisory Group and Staff Responses:
No comments from the Advisory Group members on this agenda item.

Comments from Public and Staff Responses:
No comments from the Public on this agenda item.

2. Updates on Emissions Inventory

Dr. Rui Zhang, Air Quality Specialist, PRDI, presented a brief overview of the emission inventory for the annual PM2.5 attainment Plan.

Comments from the Advisory Group and Staff Responses:
Mr. Ralph Morris asked how far off the coast ocean going vessels go. Dr. Zhang and Dr. Sang-Mi Lee, Planning and Rules Manger, PRDI, responded three nautical miles are included in the non-attainment area but emissions up to 100 nautical miles from the coast will be included in the published emissions inventory. For additional details, refer to the Webcast beginning at 25:40.

Dr. Rynda Kay, U.S. Environmental Protection Agency, Region 9, asked about the main components of residential combustion emissions. Dr. Zhang and Dr. Marc Carreras-Sospedra, Program Supervisor, PRDI, responded that residential combustion includes space and water heaters, cooking, miscellaneous sources such as grills, and pool heaters with different fuel types including natural gas, liquefied petroleum gas (LPG) and wood combustion. For additional details, refer to the Webcast beginning at 26:47.

Comments from the Public and Staff Responses:
No comments from the Public on this agenda item

3. Design Values for Attainment Demonstration

Dr. Elham Baranizadeh, Air Quality Specialist, PRDI, presented the calculation of design values used in the attainment demonstration.

Comments from the Advisory Group and Staff Responses:
Mr. Morris inquired if EPA is OK with excluding the year 2020 from the base year design value calculations. Dr. Kay responded that EPA guidance permits the presentation of evidence to exclude unrepresentative data for the base design value calculations. Dr. Kay explained that changes in activity patterns and an extreme wildfire season altered emissions during the year 2020, and that the EPA has considered excluding 2020 based on the above reasons. Dr. Kay suggested that South Coast AQMD add evidence in the Plan to support the exclusion of 2020. Dr. Lee responded the year 2020 is the end year of the 5-year (2016-2020) period and that the weight of 2020 is relatively small. These two points could serve as additional evidence to support this adjusted base design value calculation. For additional details, refer to the Webcast beginning at 36:46.

Comments from the Public and Staff Responses:
No comments from the Public on this agenda item

4. Modeling Framework and Model Performance Evaluation

Dr. Marc Carreras-Sospedra, Program Supervisor, PRDI, presented information on the emissions and air quality modeling frameworks used for the PM2.5 attainment demonstration.

Comments from the Advisory Group and Staff Responses:
Dr. Pablo Saide noted that during wintertime, the decreased altitude of the boundary layer may contribute to higher pollutant levels. Dr. Saide asked if the model included the parameters covering the urban canopy layer or energy sources coming from the urban boundary layer. Dr. Carreras-Sospedra responded that urban scheme is not selected for the meteorology simulation for this plan. Dr. Lee commented that further boundary layer height measurements could be very helpful for model development to capture the spatial and temporal evolution of the boundary layer height. For additional details, refer to the Webcast beginning at 57:17.

Dr. Saide asked if the PM modeling bias in the summer could be contributed from wildfires, and if the fire emissions are included in the modeling. Dr. Carreras-Sospedra responded that simulations conducted with and without fire emissions provided by the California Air Resources Board did not demonstrate a distinguished effect on PM2.5 at the monitoring sites. For additional details, refer to the Webcast beginning at 1:00.

Mr. Morris asked if in the model, fires impacted meteorology. Dr. Carreras-Sospedra responded, stating that the effect of fire on meteorology is not considered in the modeling. Dr. Scott Epstein, Program Supervisor, PRDI, responded there are a couple of fire events in 2018 but they were only for short period of time so the fire impact on the modeling results is very small. Dr. Lee

responded that future year predictions also exclude wildfire admissions, as they are not controllable emissions. For additional details, refer to the Webcast beginning at 1:01.

Dr. Kay noted that wood and fireplace emissions occupy a large percentage of residential combustion emissions and asked about the validation of the emissions. Dr. Carreras-Sospedra responded that it is hard to validate such emissions, but there are limited measurements of wood combustion markers that are used to apply seasonal adjustments of emissions. For additional details, refer to the Webcast beginning at 1:02.

Dr. Kay commented that the model underestimated winter PM2.5 concentrations and inquired about the emissions seasonality. Dr. Carreras-Sospedra confirmed that seasonality is based on measured levoglucosan data. For additional details, refer to the Webcast beginning at 1:03.

Mr. Morris pointed the land surface schemes used in the 2016 AQMP vs. this PM plan's meteorology modeling and commented the impacts of land surface schemes on water vapor predictions. He also noted that the Noah land surface scheme is typically paired with Yonsei University (YSU) boundary layer scheme. Dr. Lee responded that staff are transitioning to using the Pleim-Xiu land surface scheme in order to be consistent with the CMAQ air quality modeling framework. For additional details, refer to the Webcast beginning at 1:04.

Mr. Morris asked if South Coast AQMD considered using the newest version of the Model of Emissions of Gases and Aerosols from Nature (MEGAN), version 3.2. Dr. Carreras-Sospedra responded that staff tested the MEGAN 3.1 and there have been discussions regarding differences and uncertainties between different versions of the MEGAN model. For additional details, refer to the Webcast beginning at 1:06.

Mr. Morris inquired how the modeling captures diesel trucks impact at the near-road station of Ontario CA-60. Dr. Carreras-Sospedra pointed a slide showing general model performance for individual near-road sites. Overall, the model performance for near-road locations is similar to region-wide neighborhood monitoring stations. Dr. Carreras-Sospedra noted the lack of PM2.5 speciation data at the near-road sites and addressed the need to measure PM speciation data at the Ontario CA-60 site for the design value calculation. For additional details, refer to the Webcast beginning at 1:07.

Comments from the Public and Staff Responses:
No comments from the Public on this agenda item

5. Prediction of Future PM2.5 Levels
Dr. Sang-Mi Lee, Planning and Rules Manger, PRDI, presented the Relative Response Factor based method to project PM2.5 levels to future years and predicted PM2.5 levels in future attainment year.

Comments from the Advisory Group and Staff Responses:
Dr. Saide asked about the contribution from organic carbon, and whether models can distinguish between primary and secondary organic carbon. Dr. Lee responded that the presentation focused

on the combination of primary and secondary organic carbon and noted that assessing them separately would be beneficial. For additional details, refer to the [Webcast](#) beginning at 1:26.

Mr. Morris praised the notable decline in nitrates and was similarly curious about separate primary and secondary organic carbon emissions. Dr. Lee responded that staff would work on analyzing the separate contribution of primary and secondary organic carbon to total PM2.5 concentrations. For additional details, refer to the [Webcast](#) beginning at 1:28.

Mr. Morris asked about the timeframe of PM2.5 speciation data used in the modeling approach. Dr. Lee responded the observed PM speciation data of 2017, 2018 and 2019 are used in this PM2.5 plan. For additional details, refer to the [Webcast](#) beginning at 1:29.

Comments from the Public and Staff Responses:
No comments from the Public on this agenda item

6. STMPR Advisory Group Membership
Before moving to agenda item 6, Mr. MacMillan asked the STMPR advisory group for the approval of minutes from the previous STMPR meeting held on October 5, 2022. Minutes were approved as no opposition was recorded. Mr. MacMillan then moved to discuss the renewal of the STMPR Advisory Group membership. For additional details, refer to the [Webcast](#) beginning at 1:30.

Comments from the Advisory Group and Staff Responses:
No comments from the Advisory Group on this agenda item.

Comments from the Public and Staff Responses:
No comments from the Public on this agenda item.

7. Other Business
No additional comments, announcements, or reports from the Advisory Group members.

8. Public comment
No additional comments, announcements, or reports from the Public.

Members Present In-Person (3)
Rynda Kay, U.S. Environmental Protection Agency, Region 9
Ralph Morris, ENVIRON International Corporation
Greg Osterman, Jet Propulsion Laboratory/NASA

Members Present Remotely (5)
Anthony Oliver, California Air Resources Board
Gabi Pfister, National Center for Atmospheric Research
Jeremy Avise, California Air Resources Board
John Cho, Southern California Association of Governments
Pablo Saide, University California, Los Angeles

Public Attendees and Interested Parties Present (22)
Ariel Fideldy, CARB
Bill La Marr
Chad
Chenxia Cai, CARB
Dan McGivney, SoCalGas
David Stephens, JCI
Eric El-Tobgy
Fernando Gaytan, Earthjustice
Frank Huang
Jacqueline Moore, PMSA
Jin Lu, CARB
John Henkelman
Kim Fuentes
Leela Rao
Leonardo Ramirez, CARB
Mark Abramowitz
Rebecca E. Skinner
Ruthann Davis
Scott Weaver
Sylvia Vanderspek, CARB
Teja Ganapa, LADWP
Tiffany

South Coast AQMD Staff Present (23)
Cui Ge, Air Quality Specialist
Dan Penoyer, Air Quality Specialist
Elaine Shen, Planning & Rules Manager
Elham Baranizadeh, Air Quality Specialist
Emily Bian, Air Quality Specialist
Eric Praske, Program Supervisor
Eugene Kang, Planning & Rules Manager
Hayato Shigeta, Student Intern
Ian MacMillan, Assistant Deputy Executive Officer
Kathryn Roberts, Sr. Deputy District Counsel
Kayla Jordan, Air Quality Specialist
Marc Carreras Sospedra, Program Supervisor
Mark Henninger, Information Technology Manager
Nico Schulte, Air Quality Specialist
Nydia Ibarra, Public Affairs Specialist
Paul Wright, Sr. Information Technology Specialist
Rosalee Mason, Administrative Assistant I
Rui Zhang, Air Quality Specialist
Sang-Mi Lee, Planning & Rules Manager
Sarah Rees, Deputy Executive Officer
Scott Epstein, Program Supervisor

Xiang Li, Air Quality Specialist
Xinqiu Zhang, Sr. Staff Specialist