

SOUTHEAST TEXAS PHOTOCHEMICAL MODELING TECHNICAL COMMITTEE

*Houston-Galveston Area Council Offices
3555 Timmons Avenue
Houston, Texas*

November 29, 2018 9:00 a.m. – 12:30 p.m.

ATTENDEES

Dan Baker, Sherman Hampton, Beata Czader, Greg Stella, Dennis McNally, Erik Snyder, Bob Imhoff, Graciela Lubertino, Rohit Sharma, Jacklyn MacDonald, Yuxuan Wang, Steve Hansen, Will Vizquete, Liz Hendler, Steve Smith, Robert Todd, Carl Young, Patrick Vise, Wil Nicker, Lola Brown, Jim Smith, Doug Boyer, Shantha Daniel

MINUTES

Doug Boyer with the Texas Commission on Environmental Quality (TCEQ) welcomed the group and started the meeting, our first in two years. All presentations, excluding the EPA Update, are available on the [SET PMTC Web site](https://www.tceq.texas.gov/airquality/airmod/committee/pmtc_set.html), https://www.tceq.texas.gov/airquality/airmod/committee/pmtc_set.html.

SIP Planning Update – Lola Brown (TCEQ)

Lola gave an update on the SIP and Rule actions that occurred since our last meeting, including recent staffing changes at TCEQ. She let the group know of TCEQ's adoption of the Transport SIP Revision for the 2015 Ozone National Ambient Air Quality Standard (NAAQS) as well as agenda dates for upcoming redesignation and maintenance plan SIP revisions for HGB and Beaumont. Important dates for emissions inventory corrections, banking and trading credit applications, Texas Emissions Reduction Plan (TERP) grant availability, and the point source emissions inventory workshop were shared.

EPA Update – Erik Snyder (EPA)

Erik provided an update on relevant EPA actions. EPA has proposed and is taking comment on reclassifying the HGB area to the Serious classification for the 2008 eight-hour ozone standard¹. Erik noted that EPA has received a hearing request, which may extend the comment period and delay the final reclassification. Erik stated that the draft modeling guidance should be finalized by the end of the year². The 2015 Eight-Hour Ozone Standard SIP requirements rule should also be finalized in December (December 6, 2018³).

¹ November 14, 2018 Federal Register Notice for Moderate nonattainment areas failing to attain the 2008 Eight-Hour Ozone Standard: <https://www.federalregister.gov/documents/2018/11/14/2018-24816/determinations-of-attainment-by-the-attainment-date-extensions-of-the-attainment-date-and>

² Modeling Guidance for Demonstrating Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze was finalized November 2018: https://www3.epa.gov/ttn/scram/guidance/guide/O3-PM-RH-Modeling_Guidance-2018.pdf

³ Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements: <https://www.govinfo.gov/content/pkg/FR-2018-12-06/pdf/2018-25424.pdf>

H-GAC Update – Graciela Lubertino, Ph.D. (H-GAC)

Graciela provided an update on the latest conformity analysis to the 2045 Regional Transportation Plan. The group had general questions about transportation conformity and MOVES model default data.

2018 HGB Ozone Season Review – Doug Boyer (TCEQ)

Doug presented a review of the 2018 ozone season, focusing on the Houston area. A continued decline in ozone concentrations was observed over the past two decades. The preliminary 2018 eight-hour ozone design value was 78 ppb, set by the Aldine monitor. Twelve sites have preliminary eight-hour ozone design values above 70 ppb.

The Houston area observed three days with one-hour ozone concentrations above 124 ppb, the first time a one-hour concentration above 124 ppb was observed for any day since 2015. Seven sites measured one-hour ozone exceedances. Channelview had two days above 124 ppb. It can have one more day through 2020 with one-hour ozone concentrations above 124 ppb without exceeding the one-hour ozone standard.

Based on an inquiry from H-GAC about the Galveston 99th St monitor observing high ozone, we analyzed ozone trends at Galveston. In 2018, the Galveston 99th St monitor measured eight-hour ozone above 70 ppb on nine days. While more than observed the past two years, the number of eight-hour ozone high days followed the general pattern of the Houston area's ozone high days. On those nine high ozone days, seven of them exhibited some form of flow-reversal due to the land-sea breeze effect according to surface back trajectories. According to TCEQ's 2017 future year source apportionment modeling, the Galveston 99th St monitor's ozone is mostly attributable to HGB on-road, non-road, and shipping emissions as well as non-Texas sources⁴.

Texas 2015 Ozone NAAQS Transport SIP – Shantha Daniel, Ph.D. (TCEQ)

Shantha reviewed the modeling plan and results from TCEQ's 2015 Ozone NAAQS Transport SIP. She detailed how TCEQ's modeling followed EPA's Transport modeling framework but included improvements to account for both meteorological variability and emission reductions, consistently calculating design values, and using a weight-of-evidence approach to determine significant contributions. Shantha showed how TCEQ's modeling plan fit into EPA's flexibilities for calculating contributions to downwind states' ozone concentrations.

The TCEQ results showed that Texas contributed above a 0.70 ppb threshold to monitors in California, Arizona, and Colorado. Through the weight-of-evidence approach of applying more rigorous analyses (trends, back trajectories, conceptual model evaluation, collective interstate contributions, and direct decoupled method modeling), it was determined that Texas did not significantly contribute to nonattainment or interfere with maintenance of the 2015 eight-hour ozone standard at downwind monitors. Additional details are available in the [TCEQ's 2015 Ozone NAAQS Transport SIP](#) and the [model performance web page](#).

The group discussed how EPA will coordinate the modeling conclusions from the many states, consortiums, and regional planning organizations.

⁴ TCEQ 2017 future year modeling for the Houston-Galveston-Brazoria Attainment Demonstration SIP Revision for the 2008 Eight-Hour Ozone Standard, https://www.tceq.texas.gov/assets/public/implementation/air/sip/hgb/HGB_2016_AD_RFP/AD_Adoption/HGB_AD_SIP_Appendix_C_Adoption.pdf#page=58

TCEQ Modeling for the 2008 Ozone Standard – Doug Boyer (TCEQ)

Doug updated the group on TCEQ's photochemical modeling plan for the proposed reclassification of the Houston nonattainment area to Serious for the 2008 eight-hour ozone standard. The attainment date would be July 20, 2021 with a future modeling year of 2020. TCEQ will use the 2012 modeling episode that was used in the previous HGB modeling for the 2008 eight-hour ozone standard as well as the 2015 Ozone NAAQS Transport SIP.

The main updates to the modeling will be emission inventory projections to 2020 (on-road, non-road, electric generating units, oil and gas, etc.) as well as using the latest CAMx model version.

Doug also informed the group of TCEQ's active participation in the 2016 collaborative modeling workgroups with EPA and other states. The workgroups are creating a modeling inputs for the year 2016 as well as projections to 2020, 2023, and 2028. A 2016 beta emissions inventory will be released early in 2019 and version one is expected in late spring 2019.

TCEQ and AQRP Research Projects – Jim Smith, Ph.D. (TCEQ)

Jim updated the group on research projects that TCEQ has planned to fund in fiscal year 2019 (9/1/2018 - 8/31/2019). Jim also briefed projects that the [Texas Air Quality Research Program](#) has funded for the next year.

Intra-Basin and International Transport Modeling – Greg Stella (Alpine Geophysics)

Greg showed source apportionment modeling using the CAMx Ozone Source Apportionment Technology (OSAT) tool based on TCEQ's 2012/2017 modeling platform. On average at the Aldine monitor, it was shown that the boundary conditions contributed 30% (15 ppb) of the ozone and a maximum of 35 ppb. On-road mobile emissions contributed about 40% of the eight-hour ozone.

Greg also showed an OSAT analysis where contributions from grid cells from central Houston, the Ship Channel, and Texas City were tracked with specific emission source categories. At the Aldine monitor, they found that on-road sources near the city were the largest contributor to high ozone. Industrial sources near the Ship Channel also were large contributors. At the Manvel Croix Park monitor, industrial sources were the largest contributor followed by mobile sources.

Alpine intends to investigate whether NO_x or VOC emissions contribute the most to ozone formation at the monitors and also include information from outside their specific grid cells of interest.

Next Meeting

Quarterly meetings were suggested going forward. Suggested topics for future meetings included on-road emission modeling, transportation conformity, GEOS-Chem model performance evaluation, TCEQ's near real-time modeling project, and potential exceptional event day analyses.