

## **SOUTHEAST TEXAS PHOTOCHEMICAL MODELING TECHNICAL COMMITTEE**

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

*July 26, 2016 9:00 a.m. – 12:30 p.m.*

### **ATTENDEES**

Charles Airiohuodion, Alex Cuclis, Sing-Chun Wang, Dan Baker, Shelley Whitworth, Sherman Hampton, Andrew DeCandis, Ken Fountain, Beata Czader, Jian Zhang, Greg Stella, Dennis McNally, Erik Snyder, Graciela Lubertino, Jed Anderson, Lola Brown, Kathy Wilson, Doug Boyer, Andrea Zuzack, Shantha Daniel, Chris Kite

### **MINUTES**

Doug Boyer with the Texas Commission on Environmental Quality (TCEQ) welcomed the group and started the meeting. All presentations, excluding the TCEQ SIP Planning Update and the EPA Update, are available on the [SET PMTC Web site](http://www.tceq.texas.gov/airquality/airmod/committee/pmtc_set.html), [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 the EPA's final approval of the HGB Redesignation Substitute for the revoked one-hour ozone standard and EPA's proposed approval of the HGB Redesignation Substitute SIP Revision for the 1997 eight-hour ozone standard. Lola also informed the group that the TCEQ Executive Director approved staff to work on an Attainment Demonstration SIP Revision for the 2008 eight-hour ozone standard.

#### EPA Update – Erik Snyder (EPA)

Erik provided an update on relevant EPA actions. EPA is currently acting on reclassifying the HGB area to the moderate classification for the 2008 eight-hour ozone standard. When proposed, a timeline of required due dates under the moderate classification would be included. Erik mentioned EPA is working towards the area attaining the 75 ppb standard by July 20, 2018. Erik stated that the draft modeling guidance is being reviewed by EPA's Office of General Council with the hopes that the guidance would be finalized later this year. Erik also let the group know that a Photochemical and Permit Modeling conference would be held in November in New Orleans.

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

Graciela provided an update on the latest conformity analysis to the 2040 Regional Transportation Plan. Five major transportation projects were discussed. The conformity analyses was approved on September 11, 2015.

#### Representation of Emission, Banking, and Trading (EBT) Programs in the Point Source Emission Inventory – Shantha Daniel, Ph.D. (TCEQ)

Shantha described the various categories of point sources, of which she focused her presentation on electric generating units (EGUs) and Non-attainment Area (NAA) capped sources. EGUs are subject to federal cap-and-trade programs, while any capped point source in a NAA that is not an EGU is subject to state cap-and-trade programs. The percentage of emissions in each of these

categories varies by month and by area; EGUs usually emit more than half of the NO<sub>x</sub> in HGB but only three percent of VOCs.

Shantha described the different steps for allocation- and trend-based modeling. Trend-based modeling accounts for emissions above or below individual site allocations, resulting in a more accurate spatial profile.

Attendees expressed concern that by modeling the cap, the future design value might have a positive bias. Attendees also suggested that the TCEQ model cap and trade sources using growth factors similar to those used in modeling the credit registry. They also expressed interest in ensemble modeling.

#### Modeling the Credit Registry – Kathy Wilson (TCEQ)

Kathy described how the TCEQ accounts for emissions banking and trading (EBT) programs in the model for NAA non-capped sources. She noted that future emissions of NAA non-are limited to the smaller of the projected growth or the modelable bank. Projected growth is determined by a growth factor, which can be positive or negative, and is based on economic predictions for various locations and industries. The modelable bank is based on a current snapshot of the bank, with adjustments for offset ratio and credits used for MECT compliance. The modelable bank spreadsheet created by the TCEQ is publicly available after SIP adoption.

Attendees expressed concern that not including the ERCs and DERCs waiting to be certified in the modelable bank might cause their value to be depreciated.

#### 2012 TCEQ Modeling Platform Update – Doug Boyer (TCEQ)

Doug updated the group on the TCEQ's 2012 photochemical modeling efforts. Doug reviewed the stages of ozone modeling in SIP development, noting that 2012 is the base year for replicating monitored emissions using the model, while 2017 is the future year for which growth predictions and control methods are applied to predict future design values. The TCEQ models three domains for inclusion in the SIP, the largest of which includes Mexico and Canada in addition to the U.S.

Doug presented a preliminary timeline for the HGB SIP demonstration, and described sources and updates for the 2012 and 2017 CAMx inventories. Doug gave current and planned updates to the meteorological and photochemical model configurations. The TCEQ's model performance for HGB has improved, as illustrated by the model performance graphics shown for each of the five ozone season months in 2012. Interactive model performance time series are available on [the TCEQ external website](https://www.tceq.texas.gov/airquality/airmod/data/ts?eps=20120501-20120531), <https://www.tceq.texas.gov/airquality/airmod/data/ts?eps=20120501-20120531>.

Of the top regulatory monitors, only one is modeling a preliminary design value over 75 ppb for 2017. The 2012 modeling emission inventory and CAMx input files are also available at [the TCEQ external website](https://www.tceq.texas.gov/airquality/airmod/data/tx2006), <https://www.tceq.texas.gov/airquality/airmod/data/tx2006>.

#### Eight-County Houston-Galveston-Brazoria (HGB) Area Ozone Modeling Emissions Inventories – Chris Kite (TCEQ)

Chris illustrated changes in NO<sub>x</sub> and VOC emissions from the base year to the future year by listing the 2012 and 2017 tpd averages of anthropogenic emissions by industrial classification. In response to one attendee's concern about airport emission inventories and recent changes to fuel regulations, Chris noted that the airport and locomotive trend inventories were compiled in 2015.

Chris showed non-road emission trends projected to 2050. The on-road and non-road base and future inventories are available on the TCEQ external site and the AMDA FTP site, with links to the various pages included in the final slide of the presentation.

2012 Seasonal Episode Ozone Source Apportionment Technology (OSAT) Analysis – Greg Stella (Alpine Geophysics)

Greg showed source apportionment modeling using the CAMx OSAT tool. Alpine Geophysics used the TCEQ's June 2012 modeling platform with four different meteorological modeling configurations. Alpine Geophysics defined background as a contribution from the boundary conditions. On average, it was shown that the boundary conditions contributed at least 45% of the ozone at area HGB monitors, with the most coming from the "West" boundary. Attendees commented that their values were surprisingly high. Greg showed zero-out modeling, which yielded similar results. Attendees suggested that Alpine Geophysics should review the days that went into their analysis as the highest observed ozone day (June 26, 2012) did not appear in their tables. Another suggestion was to only include the attainment test days (top 10 baseline modeled) and/or days that met a performance metric. Greg concluded that despite the EPA's assertion that US background is only important in the west, Alpine Geophysics modeling shows that ozone background was significant in HGB.

Next Meeting

No suggestions for future meeting dates were given.