DALLAS – FORT WORTH PHOTOCHEMICAL MODELING

TECHNICAL COMMITTEE MEETING

North Central Texas Council of Governments
616 Six Flags Drive, Centerpoint Two, Arlington, TX

August 31, 2010; 1:30 – 4:30 p.m.

ATTENDEES

T.C. Michael, Francisco Pinto, Brian Boermer, Doug Boyer, Fernando Mercado, Dave Westenbarger, David Duncan, Ryan Spicer, Melanie Sattler, Victoria Chen, Michael Hsu, Michael Crittenden, Jacquie Hui, Victoria Venet, Chris Klaus, Madhu Venugopal, Cyndi Lewis, Brian Burdorf, Carrie Reese, Alan Larsen, Syeda Haque, Carrie Paige, Erik Snyder, Michael Feldman, Zarena Post, David Brymer, Guy Donaldson, Jim Schermbeck

MINUTES

1. Doug Boyer with TCEQ welcomed the group and started the meeting.

2. Fernando Mercado with TCEQ presented highlights of the Conceptual Model of DFW Ozone Formation. Included were trends in ozone, nitrogen oxides (NO_X), and volatile organic compounds (VOC). All had a downward trend over the 10+ years shown. Different analyses exhibited the general east to southeast wind direction on high eight-hour ozone days (≥ 85 ppb). Back trajectories (surface and aloft) on high ozone days came through the non-attainment area on most days. Those trajectories were generally shorter indicating slower wind speeds, which corroborated the surface wind speed analysis. Background levels during the non-recirculation high eight-hour ozone days were on average 66 ppb with the DFW area adding approximately 26 ppb. A VOC and NO_X limitation analysis showed the urban areas to be VOC limited (controlling VOC emissions is better at reducing ozone) while the monitors on the edge of the nonattainment area were NO_X limited (control NO_X).

   The June 2006 modeling episode was also evaluated to determine if the meteorological conditions were consistent with the Conceptual Model findings. The observed wind patterns and temperature were similar to conditions over the past decade.

3. Dave Westenbarger with TCEQ presented an analysis of DFW Ozone Design Values related to Economic Conditions. Dave showed many economic indicators and compared them to DFW ozone design values over the past 10-20 years. Overall ozone concentrations have exhibited a long-term downward trend and do not appear to track the economic indicators.

4. Doug Boyer with TCEQ provided an update on the Photochemical Modeling Time Line and Episode Selection. Doug noted the improvement in eight-hour ozone design values in the DFW area since 2006. The design value as of August 30, 2010 was 86 ppb at the Keller monitor. June 15, 2013 is the date for attainment under the current State Implementation Plan (SIP) schedule. TCEQ plans to propose the DFW SIP in June 2011 and adopt in November/December of 2011. All technical work including modeling is expected to be complete by January of 2011.

Doug also discussed the June 2006 eight-hour ozone episode including the notable ozone observed ozone concentrations. 17 days of the 33 modeled exceed the 84 ppb standard and many monitors saw high ozone concentrations throughout the month. Meteorological conditions during June 2006 also represented the typical conditions observed during typical DFW high ozone events (see the Conceptual Model presentation above). The ozone concentrations, available special study data, and existing modeling databases appear to make this ozone episode fit with EPA's episode selection modeling guidance.

5. Doug Boyer with TCEQ presented modeling results of the 2006 Base Case. Details of the source of emissions data and emissions totals were discussed for the June 2006 episode. Of note were the improvements to the oil and gas emissions by including many new source classifications (condensate tanks, compressor engines, heaters, etc.) based on 2008 data. Drilling rig emissions were also new and based on a 2008 study. Performance of the June 2006 base case was presented for the meteorological and photochemical modeling. In general both models perform very well. Specific days (June 18 and July 1) are not represented very well with the current base case due to meteorological problems. Most other days perform well, though the photochemical model has a negative bias on the highest ozone days.

   Results of the Ozone Source Apportionment Tool analysis for the 2006 base case were shown. Source areas were broken down into DFW (9-county non-attainment area) and non-DFW (everything else in the 36 km modeling domain). The largest contributors at the Eagle Mountain Lake monitor were from the on-road mobile, non-road mobile from the DFW and non-DFW areas. The Barnett Shale oil and gas emissions contributed to ozone formation to a lesser extent on some days.

   Doug noted that the 2012 future case modeling would include projections to the oil and gas emissions and the Haynesville Shale in northeast Texas and northwest Louisiana would be included.

6. Erik Snyder with EPA discussed the 2010 ozone standards and the Clean Air Transport Rule (CATR). Erik noted that the new primary ozone standard is now scheduled to come out in late October. CATR was also discussed, which Texas is included for ozone impacts on Baton Rouge, Louisiana. This seasonal cap and trade program with be implemented in phases and is designed to replace the Clean Air Interstate Rule (CAIR).

7. The meeting was adjourned at 4:30 PM.