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Technical Implementation Notice 14-41
National Weather Service Headquarters Washington DC
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From: Timothy McClung
Science Plans Branch Chief
Office of Science and Technology

Subject: Ozone Air Quality Prediction Update Effective
November 25, 2014

Effective on or about Tuesday, November 25, 2014, beginning with the 1200 Coordinated Universal Time (UTC) run, the National Centers for Environmental Prediction (NCEP) will upgrade the Community Multi-scale Air Quality (CMAQ) modeling system that provides ozone air quality predictions.

The updated CMAQ model includes an updated carbon bond gas phase (CB05) mechanism and additional updates. This update is for the contiguous 48 states (CONUS) domain.

Ozone predictions from the updated CMAQ model will be made available through a parallel feed at the following locations starting around October 10, 2014.

HTTP:
<http://www.ftp.ncep.noaa.gov/data/nccf/com/aqm/para/aqm.YYYYMMDD>

FTP:
<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/aqm/para/aqm.YYYYMMDD>

where YYYYMMDD is the year, month, day.

The CMAQ GRIB products from the parallel feed are also disseminated via the NCEP website:

ftp://ftp.emc.ncep.noaa.gov/mmb/aq/for_NDGD_5x_expr/

and the products will be displayed at

<http://airquality.weather.gov/expr/>

The hourly ozone maps are available at

<http://www.emc.ncep.noaa.gov/mmb/aq/cmaq/web/html>.

The daily maximum ozone maps are available at

http://www.emc.ncep.noaa.gov/mmb/aq/para/web/html/max_p6.html.

Current operational CMAQ model will continue providing forecasts through

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.aq/AR.conus/>

and displayed at

<http://airquality.weather.gov/>

The scientific enhancements include the following:

- Inclusion of Carbon Bond Mechanisms (CB05) with updated rate constants
- Addition of monthly varying lateral boundary conditions for 36 gaseous and aerosol species below 7km altitude
- Modification of dry deposition velocity calculation
- Constraint of planetary boundary layer height in the model to be at least 50m
- Faster removal of organic nitrate from the atmosphere,
- Inclusion of particulate emissions from wildfires based on wildfire locations observed over the previous day
- Suppression of soil emissions when terrain is covered by ice or snow
- Inclusion of windblown dust emissions using threshold friction velocity and soil wetness fraction with climatological source composition and locations

There are no changes to existing products or their contents.

Due to this upgrade, NCEP will deliver the CONUS products 30 to 35 minutes later at the present time. For questions regarding these changes, please contact:

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NWS National Technical Implementation Notices are online at:

<http://www.nws.noaa.gov/os/notif.htm>

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