Status of 2008 Ozone NAAQS Redesignation Request & Maintenance Plan

Milestone Years

Base year – 2011
Attainment year – 2014
Intermediate year - 2025
Final year - 2030

Emissions Inventories

Pollutants and Time Period of Analysis – VOC, NOx, and CO Average Ozone Season Day

2011

Emissions from BY2011 emissions inventory submitted for the 2008 ozone SIP will be used for the analysis required as part of the redesignation request.

On-road Source Emissions - MOVES2014a emissions for 2011 will be adjusted to develop MOVES2014a emissions for that year and compared with MOVES2014a based 2014 emissions for redesignation request purposes. A preliminary calculation is shown on the page 2 of this document to illustrate the comparison.

2014

a) Point (EGU & NEGU), Area, MAR sources
   a. DC – Provided emissions for NEGU, Area, and MAR sources; No EGU in DC.
   b. VA – Provided emissions for NEGU, Area, and MAR sources, EGU emission expected this week
   c. MD – Need emissions for all three sources

b) On-road & Nonroad model sources - MWAQC staff developed MOVES2014a inputs files for each jurisdiction and provided them to TPB staff. TPB staff is now developing transportation related inputs for 2014. MWAQC staff has started to develop nonroad emissions.

2025 & 2030

a) Point (EGU only) sources – MD and VA working on developing these. No EGU in DC.

b) NEGU, Area and MAR sources – Growth factors to project emissions to future years for:

   i. Population, Employment, and Households from COG Co-operative Round 9.0 - Completed
   ii. VMT using TPB VMT projections from the 2016 CLRP analysis – TPB staff is developing 2014 VMT estimate

c) On-road & Nonroad model sources - MWAQC staff developed MOVES2014a inputs files for each jurisdiction and provided them to TPB staff. TPB staff is now

developing on-road emissions for 2025 and 2030. MWAQC staff will develop 2025 and 2030 nonroad emissions once 2014 nonroad emissions are done.

Plan Document Development

Currently MWAQC staff is developing draft documents and they will soon be shared with state air agencies. After receiving the feedback from the state air agencies, they will be shared with MWAQC-TAC.

Comparison of 2011 and 2014 MOVES2014a Emissions

The table below lists MOVES2014a emissions of VOC, NOx, and CO for 2011 and 2014. MOVES2014a emissions for 2011 were developed using a TPB comparative study for MOVES2010a and MOVES2014. This study showed MOVES2014 emissions for VOC, NOx, and CO to be 4%, 13%, and 29% lower respectively compared to MOVES2010a in the year 2015.
Based on these differences, adjusted MOVES20104a emissions for 2011 were developed. Since 2014 emissions have not been developed for the 2008 ozone NAAQS RR/MP effort yet, these were developed by interpolating emissions for 2011 and 2016. 2016 emissions are taken from the 2016 CLRP analysis.

The table below shows VOC, NOx, and CO emissions reduction between 2011 and 2014 to be 14.2 tpd, 41.8 tpd, and 170.6 tpd respectively.

Though these calculations are based on estimated figures, emissions reductions are significant enough and it is doubtful whether any changes in assumptions in the calculations would change this number significantly. As soon as the actual 2014 emissions developed using MOVES2014a become available, we will revise this calculation again.

Milestone Year	VOC (Tons per day)	NOx (Tons per day)	CO (Tons per day)	Emission Data Source
2011	82.4	205.5	895.0	MOVES2010a emission from BY2011 Emissions Inventory submittal for 2008 ozone NAAQS
2011	79.1	178.8	635.5	[a] Estimated MOVES2014a emission using TPB comparative analysis
2016	55.5	109.2	351.1	[b] CLRP analysis
2014	64.9	137.0	464.9	[c] Interpolated emission
2011 - 2014	14.2	41.8	170.6	

[a] A TPB study found differences of 4%, 13%, and 29% in VOC, NOx, and CO emissions respectively between MOVES2010a and MOVES2014 for 2015. Assuming these differences also hold true for these three pollutants between the two model versions for 2011, the revised MOVES20104a based VOC, NOx, and CO emissions for 2011 will be:

VOC emission = 82.4*(1-0.04) = 79.1 tpd
NOx emission = 205.5*(1-0.13) = 178.8 tpd
CO emission = 895.0*(1-0.29) = 635.5 tpd

[b] VOC and NOx emissions based on MOVES2014a from 2016 CLRP analysis; Interpolated CO emission (using winter time CO emissions for 2015 and 2017 based on MOVES2014 from 2015 CLRP analysis.

[c] Based on a linear interpolation between 2011 and 2016,
VOC emission for 2014 = (79.1-((79.1-55.5)/5)*3)) = 64.9 tpd
NOx emission for 2014 = (178.8-((178.8-109.2)/5)*3)) = 137.0 tpd
CO emission for 2014 = (635.5-((635.5-351.1/5)*3)) = 464.9 tpd
The interpolated 2014 emissions will be replaced with actual 2014 emissions once they become available.

There are two caveats in the calculation of emissions reductions above. First, we assume that the difference in emissions estimation between MOVES2014 and MOVES2014a is minimal (as mentioned in the MOVES2014a Q&A document) and second, the TPB study above also holds true for 2011.