

MOVES Task Force Meeting

March 16, 2010, 10:10 AM – 12:55 PM

Meeting Summary

Present:

Jim Ponticello, VDOT - Co-Chair
Chris Voigt, VDOT
Howard Simons, MDOT
Bob Owolabi, Fairfax County DOT
Sonya Lewis-Cheatham, VDEQ
Marcia Ways, MDE
Mohamed Khan, MDE
Randy Carroll, MDE
Jessica Daniels, DDOE
Joonho (John) Byun, FHWA

Staff:

Mike Clifford, Daivamani (Siva) Sivasailam, Eulalie Lucas, Yu Gao, Erin Morrow, Jinchul Park, Daniel Son, Joan Rohlf, Sunil Kumar

Item 1: Call to Order/Introductions

The meeting of the Task Force was called to order by co-chair Jim Ponticello, which was followed by introductions of members and staff.

Item 2: Review of January 19th Meeting Highlights

The meeting highlights were accepted with the changes proposed by VDOT.

Item 3: MOVES2010 Federal Register Notice – SIP and Conformity Implications

Jim Ponticello announced that a notice was published in the Federal Register on March 2, 2010 regarding the final version of the MOVES model (MOVES2010). He discussed briefly the SIP and conformity implications of the published model. He said that since MOVES emissions will most likely be higher compared to Mobile6 emissions, mobile budgets in the SIPs submitted will likely need to be revised with MOVES.

Item 4: Review of MOVES2010 Model Testing Work Program and Time Line

Siva discussed the MOVES model testing work program and associated timelines. He said that Department of Transportation Planning (DTP) staff has finished initial work on the county level local data development and would soon start working on the custom domain level data development and emissions analysis. Siva said that DTP was considering three different custom domains (one each for DC, MD, and VA) to account for the differences in I/M and fuel programs. John Byun recommended against this approach since he felt that it would be more appropriate to model each jurisdiction separately to account for variations in temperature, age distribution, etc. He felt that the custom domain approach was more appropriate for situations such as the domain consisting of portions of different counties or a portion of a single county. He further said that the MOVES model was designed to be used at the county level. Jim Ponticello asked if mobile budgets based on

MOVES do not meet SIP mobile budgets, then how much time it would take to correct the SIP budgets. Joan suggested that it will be better to submit a partial SIP and with MOVES model developed budgets for adequacy determination. Joan and Marcia Ways said that it would take anywhere from 3 to 6 months considering the public hearing process.

Item 5: Experience with MOVES2010 Model

a) Preliminary Results, Eulalie Lucas/Jinchul Park, DTP

Jinchul Park discussed the results of a comparative study of Mobile6.2, draft MOVES2009, and MOVES2010 emission results for Washington, DC for 2005 and 2030 for both daily and annual emissions with national default data. He concluded that MOVES2010 shows slightly lower VOC and slightly higher NO_x emissions in comparison to MOVES2009. Both versions of MOVES model show higher emissions compared to Mobile6.2. Daily VOC emissions in the MOVES2010 model had more 'Start' and 'Vehicle Related' emissions than the Mobile6.2 model, however, 'Running' emissions were reduced somewhat. Both MOVES model versions produced much more 'Start' and 'Running' NO_x emissions compared to Mobile6.2. On annual basis, MOVES2010 produced more NO_x, PM_{2.5}, and CO₂ emissions compared to Mobile6.2 and draft MOVES2009. Both MOVES model versions showed greater reductions through time for VOC, NO_x, and PM_{2.5} emissions. John Byun said that since VMT used in MOVES and Mobile6.2 runs were different, it was not a proper comparison of emissions. Bob Owolabi asked Jinchul why draft MOVES2009 was compared to Mobile6.2 as the final version of the MOVES model (MOVES2010) was already published. Jinchul said the exercise was needed to understand the various components of the MOVES model in detail. Mike said that it was good to know that the emissions reduction between 2005 and 2030 was higher for MOVES2010 as this would allow the Washington region to show a greater relative reduction between the base and attainment years compared to Mobile6.2 when the region revises its SIP budgets.

Eulalie discussed the comparison of Mobile6.2 and MOVES emission based on two separate scenario runs, one performed using all national default data and the other using a mix of national defaults and local data for DC, Montgomery, and Fairfax counties for 2005 and 2030 for an average ozone season day and annual analyses. NO_x and VOC emissions for MOVES with national defaults were the highest followed by MOVES with a mix of national defaults and local data and Mobile6.2.

b) Maryland Experience, Mohamed Khan, MDE

Mohamed Khan discussed the various MOVES2010 runs MDE performed for all Maryland counties. He said the emission inventory approach was used with all local data for 2007. MDOT supplied all transportation related inputs, while MDE provided I/M and fuel programs, and meteorology data for these runs. He found VOC emission were approximately 20% higher while NO_x emissions were higher by 16% to 38% compared to Mobile6.2. Bob Owolabi asked the reason for increased NO_x emission. John Byun said MOVES has higher emissions rates and more emissions processed compared to Mobile6.2 Also a comparison of county and custom domain approaches showed emissions were the same for both approaches when the same set of inputs were used for individual counties (for county approach) and the custom domain consisting of the same counties (for custom domain approach).

c) Virginia Experience, Sonya Lewis-Cheatham, VDEQ

Sonya Lewis-Cheatham discussed the MOVES inputs Virginia DEQ is currently developing for various counties for 2007. She said that VDOT supplied VMT and road type distribution data while

fuel and speed distribution data came from EPA's database. VDEQ developed I/M program data. She said VDEQ will be using the inventory-county approach for MOVES runs as the emission rate approach takes six to eight times more time.

Mike said that using local speed distribution data would be preferable as DOT data does not assume idling. Jim said VDOT does not have detailed speed distribution data for individual roadways, and therefore Virginia is planning to develop speed distributions based on a single average speed as outlined in the MOVES Technical Guidance. John Byun said EPA should have suggested to use the traffic simulation model to develop speed distribution data.

Item 6: Review of MOVES2010 Local Data Inputs and Recommendations

Sunil discussed in detail the recommendations for MOVES meteorology data and the MOVES emissions calculation approach. He presented meteorology data for the Washington region using data for the years 2007 through 2009 from Dulles and National airports from the National Climatic Data Center (NCDC). He compared data from NCDC and MOVES default database for the ozone season, winter season, and January through December. He recommended using May-September (2007-2009 average) meteorology data for the ozone season, January data for the winter season, and 12 month data for the annual MOVES analyses.

Sunil compared four different approaches (inventory-county, inventory-custom domain, emissions rate-county, and emissions rate-custom domain) for MOVES emissions calculation. These approaches were compared in terms of emission inventory development time, post-processing issues for emission rate, and the need to provide data at the county level to EPA for NEI and SIP base year inventory and other purposes. He recommended using inventory-county approach based on all the factors mentioned above.

John suggested contacting EPA before deciding on the meteorology data. Jim said that there is currently an uncertainty regarding the base year for the ozone SIP, so he concurred with John about contacting EPA on the meteorology data issue. Mike said that DTP staff is currently working on the runs using four different approaches and the group should also take a look at the results. He also said that an alternative approach might need to be explored where we can use the county approach just for the base year and the custom domain approach for the other required SIP years. After reviewing the results if the group decides this is worth pursuing we can approach EPA for their views on this approach. The group concurred with John Byun and Mike's suggestions to contact EPA on the temperature issue right away and the SIP approach later.

Item 7: Next Meeting/Agenda Items

The next meeting will be held on April 20, 2010.

Item 8: Other Business

There was no other business.

Meeting adjourned at 12:55 pm.