

## **MOVES Task Force Meeting**

October 13, 2009, 12:30 PM – 2:05 PM

### **Meeting Summary**

#### **Present:**

Diane Franks, MDE – Co-Chair  
Jim Ponticello, VDOT - Co-Chair  
Randy Carroll, MDE  
Jessica Daniels, DDOE  
Brian Hug, MDE  
Sonya Lewis-Cheatham, VDEQ  
Bob Owolabi, Fairfax County DOT  
Pam Parker, MCDEP  
Howard Simons, MDOT  
Kanti Srikanth, VDOT  
Chris Voigt, VDOT  
Kristen Olsen, VDEQ (phone)  
Ram Tangirala, DDOE (phone)

#### **Staff:**

Mike Clifford, Daivamani (Siva) Sivasailam, Eulalie Lucas, Jane Posey, Yu Gao, Erin Morrow, Joan Rohlfs, Jeff King, Sunil Kumar

#### **Item 1: Call to Order/Introductions**

The meeting of the Task Force was called to order by co-chairs Jim Ponticello and Diane Franks, which was followed by introductions of members and staff including participants who joined the meeting by phone.

#### **Item 2: Review of September 15<sup>th</sup> Meeting Highlights**

The highlights for the September 15, 2009 meeting of the Task Force were approved with one change. Under Item 4&6, Kanti Srikanth requested that “the region had lost one year of transportation funding” be replaced with “the region lost one year in adopting the long range plan and program.”

#### **Item 3: Different Approaches to Model Emissions – County, Sub-regional and Regional Levels**

Sunil Kumar spoke to a one page handout. He summarized three different approaches to modeling emissions; the first by modeling each individual county (county), the second by aggregating the non-attainment counties in each of the three states for a total of three input files (sub-regional), and the third by aggregating the entire non-attainment area into one region (regional) for a total of one input file. He discussed the necessary inputs to the MOVES model and the advantages and disadvantages of using each approach with regards to obtaining the necessary input data. The county approach is most similar to the current analysis process. However, we need to look at new approaches to reduce the

model runtime which could be between 40-50 hours per conformity assessment if the analysis is done at the county level. Eulalie Lucas pointed out that annual runs take much longer than an ozone season run and especially if those runs will have to be done by month, rather than season, which MOVES has the capability to do. We are still waiting on EPA guidance to see whether we will need to do annual runs for all 12 months or use 2-3 representative months.

Sunil discussed the inputs listed on the handout. For fuel characteristics, he felt that the county and sub-regional approaches would be advantageous, while the regional approach would require coming up with a representative average of the District of Columbia, Maryland, and Virginia fuel programs. Jim Ponticello pointed out that Virginia has used default values for diesel sulfur, gasoline sulfur and RVP in the past; however, he has a call in to find out the exact values and hopes to have those for the next task force meeting.

For I/M programs, Sunil felt that the county and sub-regional approaches would be advantageous, while the regional approach would require coming up with a composite I/M program for the District of Columbia, Maryland, and Virginia programs. For example, Maryland has adopted the Clean Car Program. Diane commented that the Clean Car Program mostly impacts carbon dioxide and has little effect on criteria pollutants. The question came up as to whether all of the counties in each state have the same I/M program and if no, how would that impact the sub-regional approach. Kanti asked how much of an issue could it be to combine jurisdictional information (like I/M programs) in submitting conformity or SIP work. Siva responded that if the guidance allows for it, than we should be able to do that. Jim added that the sub-regional approach is being discussed by EPA and all indications are that it is allowable, but we will need to wait for the guidance. The discussion moved towards discussing the runtime required for a MOVES model run – approximately four to six hours for one county using default data. Sunil commented that it would likely take longer using local data. Also, we do not yet know how we will be required to model annual conditions – weekdays? Weekends? All 12 months? Three to four representative months? Ram commented that in the past we have used an urban-exurban approach.

Sunil continued with the discussion on the effect of the modeling approach on the MOVES inputs. Meteorology will not be impacted by the choice of modeling approach because we use regional values. For vehicle population and VMT, we have those data by county and minimal processing will be required to produce input files for the sub-regional or regional approach. Age distribution differs between counties and we would need to look closely at how much to develop inputs for either the sub-regional or regional approach. The VMT mix differs by county. We currently use the Mobile 6.2 default and local truck data in developing a hybrid VMT mix. In MOVES, the VMT mix format is different and inputs will need to be developed.

Chris Voigt asked if in the current county-by-county process the registration distribution in each county is attributed only to vehicles in that county, as vehicles may be registered in one county while their owners may commute or shop in others. Mike responded by

saying that our current process looks at O-D data and makes adjustments to the calculation of emission factors. Given the potential advantage of these adjustments as currently applied on a county-by-county basis in the COG post-processor, and that the MOVES emissions processor as previously discussed does not make such adjustments, Chris raised the question of what the implications would be and asked if staff have done a sensitivity test in Mobile 6.2. Mike Clifford responded that Eulalie Lucas has done such a test and presented the results at the last task force meeting. The MOVES VMT ranged anywhere from 30%-50% higher than local forecasted data. Eulalie commented that the function to create emissions rates is not available in the draft version of MOVES. Chris responded that was understood but the question had to do with registration data, but in any case we will need to wait for EPA guidance and the final version of the model to assess the options. Jim commented that he felt there would be no loss of accuracy in vehicle age distributions when aggregating to the sub-regional or regional approach.

Sunil continued with the impact of the modeling approach on vehicle emissions control programs. These programs differ by state and it could create a problem if a regional approach is used. Other factors include data development in NEI format – if a sub-regional or regional approach is used, emissions would need to be allocated at the county level for NEI submissions.

Bob Owolabi followed up with the question about the loss of emissions accuracy and asked whether sensitivity tests have been conducted. Sunil responded that staff will need to first develop the data at the local level and we are still awaiting guidance on some of the inputs before a sensitivity analysis can be completed.

#### **Item 4: Review of MOVES Model Inputs: Default Datasets and Local Data**

Daivamani (Siva) Sivasailam spoke to a handout. Table 1 showed a comparison of the 16 Mobile 6.2 vehicle types (28 if gas and diesel are separated) and 13 MOVES vehicle types. Table 2 showed the factors provided by EPA to translate the Mobile 6.2 vehicle types into MOVES vehicle types. Tables 3, 4 and 5 showed examples of how the District of Columbia, Montgomery County and Fairfax County Mobile 6.2 vehicle fleets translate into MOVES vehicle types. Siva noted that these tables only contain vehicles that are model year 1981 or newer. The question is whether there are local data that we can use to see how well the EPA default data applies to the Washington, DC region. For example, Siva highlighted the bus factors in Table 2 which show that 60% of the total (non-school) buses would be allocated to intercity and 40% would be allocated to transit using the EPA factors. Looking at the local data collected for the region, in the District of Columbia, 2.5% of transit buses are intercity and 97.5% are transit buses which does not match the factors in the MOVES converter.

Siva referred to Charts 1 and 2 in the handout which show MOVES vehicle age distribution for the whole region and by state for passenger cars and light commercial trucks. He cited examples of vehicle types where staff already aggregates vehicle age distribution data – school bus and transit bus are summarized by region and HDDV8 are summarized by urban and rural jurisdictions.

Ram asked if staff had time to review the DC motor carrier data that he had e-mailed the previous week. Erin Morrow said that staff are reviewing the data and researching potential sources for heavy-duty truck information including FHWA's Freight Analysis Framework and the 2002 Vehicle Inventory and Use Survey produced by the US Census Bureau.

Eulalie Lucas spoke to a handout which illustrated an example of the format for the MOVES VMT mix. MOVES has four different network facility types as well as off-network VMT. Mike Clifford added that research continues for each input element and for the VMT mix; possibilities include determining a percentage to split the travel demand model's facility types into MOVES facility types. School bus and transit bus VMT is already known from survey data. Mike continued to say that wherever possible, staff can compare readily available local data to MOVES default data to make judgment calls.

**Item 5: Status of Local Data for MOVES**

Eulalie Lucas updated the task force on the progress being made to use local data, rather than MOVES national default data, for emissions calculations. She said that she is now using local data to run MOVES, but has noticed some anomalies with the results. She is looking into how MOVES allocates VMT as the output VMT does not match the input VMT in the final calculations. Mike Clifford asked if any of the other task force members has had experience running MOVES with data other than the default data. Brian Hug suggested that Mohammad Kahn at MDE may and he would contact him. Sonia Lewis-Cheatham said that she has, but she had not noticed the VMT in the process database not matching the input, but she will go back and review those runs.

**Item 6: Status of the FHWA's MOVES-related Research Projects**

Cecilia Ho was not able to attend the meeting and this agenda item will be moved to the November 17<sup>th</sup> meeting.

**Item 7: Other Business**

There was no other business

**Item 8: Next Meeting/Agenda Items**

The next meeting will take place on November 17, 2009. Agenda items include any review of EPA's policy or technical guidance that is expected to be released this month, an update on age distribution and vehicle types, an update on truck apportionment, status update on the FHWA's MOVES-related research projects, and an update on efforts to develop a local VMT mix for MOVES.