

Top Priorities for Improving EPA
Onroad Mobile Source Emission
Inventory –
Virginia's Perspective

Outline

- Simplifying Assumptions in SMOKE-MOVES
- Widespread Use of MOVES Defaults in NEI
- Light-Duty Vehicle VMT
- Vehicle Classification
- Recommendations
- Future Meetings

Simplifying Assumptions in SMOKE-MOVES

- Representative counties
- Use of parameters from a single county to represent the whole group
- Fuel month grouping (winter and summer)
 - MOVES 2014 defaults include monthly fuel data
- Emphasis misplaced:
 - Detailed temperature treatment
 - Prevailing (or constant) relative humidity per representative county/fuel month
 - Oversimplified treatment of fleet age (use of average age for the entire fleet instead of fleet profile)

MOVES Defaults

- States increasingly rely on MOVES defaults to create inventories
- Some defaults have considerable impact on emissions
 - Fleet age distribution by vehicle type
 - Vehicle population
 - VMT by vehicle population
 - Speed distribution by vehicle type
- Defaults are rarely updated to reflect best data available

Light-Duty Vehicle VMT

- MOVES2014 requires one combined VMT input for all three light-duty vehicle types
 - Passenger car
 - Passenger truck
 - Light commercial truck
- VMT split for these three vehicle types is determined internally by MOVES using VPOP input
- MOVES does not allow for adjustment of this internally assumed allocation
- Similar issue for other vehicle types (i.e., short-haul and long-haul trucks)
- This practice makes VPOP one of the most important factors in determining emissions

Vehicle Classification

- Each vehicle worldwide has a unique 17 digit code assigned when it is manufactured
- The 17 digits cannot distinguish between passenger trucks (31) and light commercial trucks (32) or between short-haul and long-haul vehicles (52, 53, 61, 62)
- Vehicle split is important because emission factors for passenger car, passenger truck, and light commercial truck are different

Recommendations

- Parallelize MOVES calculations to reduce processing time
 - This would also help in reducing reliance on simplifying assumptions in SMOKE-MOVES
- Compare MOVES default data and area-specific data on a recurring basis
- Evaluate and update defaults accordingly
 - Use process similar to CRC projects to collect and evaluate data for important vehicle types
- Offer more flexibility to provide unique VMT inputs by vehicle type as an alternative to using VPOP to allocate VMT
- Provide clear guidance on how to classify vehicles for MOVES inputs (i.e., split of light-duty, short-haul, and long-haul vehicles)

Future Meetings

- Monthly meetings with States
 - Identify research opportunities
 - Present studies done by states
 - Invite outside speakers to present research
 - Develop consensus recommendations
- Quarterly meetings with EPA, OAQPS, and OTAQ
 - Share findings and present recommendations developed during state meetings to EPA
 - Prepare shorter summary presentations (15-20 minutes) and attach more detailed technical analyses