

MOVES2010b

Briefing for NACAA

June 5, 2012

MOVES



Current Version of MOVES

- **MOVES2010 (December 2009)**
 - First official release of the MOVES series
- **MOVES2010a (August 2010)**
 - Added light duty GHG and fuel economy rules
 - CAFE standards for MY 2008-2011
 - GHG/ CAFE standards for MY 2012-2016
 - Changes in GHG emissions, but insignificant changes in criteria pollutants
 - Also included some performance and usability improvements
 - A minor revision for SIP and conformity purposes
 - Users can use either MOVES2010 or MOVES2010a

An Open Process for Informing Users and Getting Feedback

- **FACA workgroup to review MOVES development**
 - Starting new FACA process for next major update to MOVES
 - Does NACAA want to change representation on FACA committee?
- **Peer-review of MOVES technical documents**
- **25 hands-on training events to almost 700 users since release of MOVES2010**
- **Over 2500 responses to user questions submitted via e-mail**
- **2-day MOVES workshop in Ann Arbor attended by 230 users**
- **Ongoing support to AQ and transportation agencies about using MOVES in SIP development and conformity**
- **Have continued to work on model improvements based on user feedback from all of these sources**

What is MOVES2010b?

- **MOVES2010b**
 - Not a new model
 - A minor revision that does not change emissions
 - Use would be recommended but optional for SIPs and conformity analyses, no new grace period for conformity
 - Better performance and new features

How do MOVES2010b Emissions Compare?

- **Criteria pollutant emissions do not change from MOVES2010a**
 - In repeated testing at both county and project scale, differences in criteria pollutant emissions are negligible
- **We do not expect and have not seen any changes in GHG emissions in our tests**
- **Some changes are expected in air toxics**
 - Some updates to factors used to calculate existing air toxics in MOVES
 - Addition of air toxics previously available for MOBILE/NMIM, but not in MOVES2010 or MOVES2010a

Newly Added Air Toxics in MOVES2010b

- Many air toxics that could be estimated with MOBILE6.2 or NMIM were left out of MOVES2010 and MOVES2010a because of ongoing data development to inform updates
 - Gaseous air toxics, PAHs, metals, dioxins/furans
- Those updates have occurred and emission results are required for the National Emissions Inventory
- MOVES2010b incorporates the addition of those air toxics previously available using MOBILE or NMIM

Performance Improvements

- **Allows up to 8 workers on a single computer**
 - Can take advantage of this in multi-core computers
 - Impact on speed varies
- **New debugging features and better data recovery for failed network operation**
 - New fields in output database help diagnose run problems
- **Updated to latest versions of JAVA and MySQL**
 - Keeping up with changes in software and improving security
- **Run-time improvements vary based on type of run, whether using multiple workers, etc.**
 - In best cases, improvements are modest

Custom Domain Improvements

- **Can define separate zones (counties) with separate VMT and other inputs**
 - Meteorology, VMT and vehicle population can vary by zone
- **Can get emission outputs separately for each zone**
- **SCC output option now fully functional**
 - SCC output for custom domains in previous versions was more limited
- **Added Custom Domain functionality makes it easier to do multi-county runs**

Improvements to CDM/PDM

- **Additional error checks help prevent run failures due to conflicts between RunSpec parameters and user data**
- **Vehicle and fuel technologies tab added (replaces AVFT input in RunSpec panel)**
 - Makes AVFT input more consistent with other user inputs

Improvements to Rates Option

- Refueling emissions added to RatePerDistance and RatePer Vehicle tables
- Added calculation of extended idle emissions in SCC output
- RunSpec options not applicable for emission rates calculation are now grayed out

Other Improvements

- **HONO, an ozone precursor needed in some air quality modeling, added to model output**
- **Added new counties in Alaska and Colorado**
 - No default data are available
- **New fields added to fuel formulation tables for additional characterization of volatility - T50 and T90**
 - Most users will not change these fuel specifications
 - User modified fuel formulation tables for MOVES2010 and MOVES2010a must be converted to work in MOVES2010b
- **Some additional warning messages have been added**
- **Added hotspot scripts to Post Processing menu**

Other Items with the Release

- **Tools that help convert RunSpecs and user input databases created with previous versions of MOVES2010 to MOVES2010b format**
- **Updated SIP and Conformity Policy Guidance**
- **Updated MOVES Technical Guidance**
- **Spreadsheet converter to ease input of retrofit program data in MOVES**
- **Updated 2-day training course materials coming later this summer**