

# FACA MOVES Model Review Workgroup

(updated 4/28/09 pm)

**Matthew Barth**

*Professor and Director*

*College of Engineering-Center for Environmental Research and Technology*

*University of California-Riverside*



# **MOVES Review Workgroup Objectives**

- **To evaluate and provide recommendations on the inputs proposed for use in MOVES...**
  - **emission rates**
  - **fleet & activity**
  - **fuel and other adjustments**
- **To evaluate MOVES input and output structures and their usefulness in meeting the needs of modelers developing SIPs and transportation conformity programs**
- **Under FACA structure, workgroup recommendations are made to the MSTRS**

# MOVES Workgroup Membership

- **Chairs:**
  - John Koupal, EPA
  - Matt Barth, UC Riverside
- **Industry:**
  - Auto Alliance, AIAM, EMA, API, CRC
- **Environmental Groups:**
  - NRDC, Environmental Defense
- **State and Local Government:**
  - NACAA, AASHTO, CARB
- **Federal Government:**
  - EPA, FHWA
- **Academia:**
  - UC Riverside, Georgia Tech, NC State, Cornell

# **MOVES Workgroup Process**

- **EPA presents MOVES modeling materials at meetings**
- **Meeting notes are taken and distributed**
- **Workgroup members poll their membership and provide feedback comments**
- **Comments are compiled, summarized, and distributed**
- **Workgroup discusses comments at next meeting with the goal of developing consensus recommendations to be forwarded to MSTRS**
- **Workgroup also reviews draft MOVES reports as they become available**

# 2007-2009 Meeting Topics

- **Fleet & Activity, Light Duty HC/CO/NOx emission rates**
- **Light Duty PM rates & Kansas City Study**
- **Evaporative emissions**
- **Fuel Effects**
- **Inspection/Maintenance**
- **Heavy Duty emission rates and Temperature Effects**
- **Fleet & Activity Update**
- **Tier 2 Emission Rates, LD PM & High VSP bins**
- **E10 & E85 effects, Air Toxics**
- **Heavy Duty Emission Rates**
- **Draft MOVES2009 & Project Level Manager**

# **MOVES is largely shaped by data collected since the release of MOBILE6**

- **Activity**
  - in-use vehicle trip patterns
  - VIUS2002
- **Light-Duty Vehicles**
  - thousands of in-use vehicles from I/M programs
  - Kansas City gasoline PM study
  - remote sensing data
  - in-use certification verification data
- **Heavy-Duty Vehicles**
  - 100 in-use vehicles (E-55 plus)
  - MOBILE6 based on engine certification data

# Workgroup Comments:

- **Workgroup discussions with EPA have been very open and informative.**
- **MOVES depends heavily on data; continuing data collection is essential**
- **Model validation is a higher priority than new features**

# Workgroup Recommendations: Data Collection

- Priorities for next phase of MOVES development/maintenance should be based on sensitivity analyses.
- EPA team should develop a “**data collection plan**” that would fill data holes and provides data into the future for maintenance
- EPA should consider some type of periodic **surveillance data collection program**, in addition to relying on I/M data sets, data from rule making projects, programs such as KC project, PEMS, etc.
- EPA should continue to be aggressive in obtaining data from similar or related data collection programs (state DOTs, California Air Resources Board, CRC)



# Workgroup Recommendations: Validation

- EPA should develop a **validation plan**:
  - Potentially funded and/or carried out by other entities
  - Include comparisons to
    - MOBILE6 and EMFAC
    - remote sensing data
    - tunnel studies
  - Include intermediate validation of model subparts

# Workgroup Recommendations: Future updates

- **Workgroup has concerns on how EPA is going to **update MOVES** in the future:**
  - need to update both emissions and fleet/activity inputs
  - need to assure data is available
  - Updates on a regular / irregular basis?
    - perhaps consider regular periodic version release: MOVE2007, MOVES2008, etc.

# Workgroup Recommendations: Other

- Significant **outreach** should occur with **transportation community** on interfacing MOVES with transportation data and models
  - FHWA has begun to address
  - Workshops, trainings and other communications need to continue
- Ensure that future **funding** stream is available for MOVES development and maintenance