

# MOVES 2013 Plans & Directions

MSTRS MOVES Review Work group

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The word "MOVES" is displayed in a stylized, metallic, three-dimensional font with a glowing effect, set against a dark, gradient background.

# Outline

- **MOVES 2013 Functional improvements**
- **MOVES 2013 Data updates**

# MOVES 2013

- **MOVES2010b (Review)**

- A minor revision that does not change emissions – focus was on improvements to user features, additional toxics
- Use was recommended; but, optional for SIPs and conformity analyses, no new grace period for conformity
- Released June 2012

- **MOVES2013**

- Major update incorporating new functionality, research and emission standards
- Will be considered a new model for SIP and conformity purposes with a new conformity grace period
- Will include first draft of NONROAD implementation
- Will be able to be applied outside the U.S. (MOVES International)
- Scheduled release target date is mid 2013

# Process for Updating MOVES

- **Collect**
  - User concerns, recommendations, suggestions
  - Problems, potential errors, inaccuracies
  - New data for potential inclusion in MOVES
- **Analyze**
  - Confirm issue and/or evaluate recommendations
- **Prioritize**
  - Based upon impact to user, data accuracy, impact on results
- **Schedule for development implementation**

## Issue/Comment Tracking

Comment Number:  Summary:  Wish List Xref:

Date:

Type:  Subject:  Entered By:  Status:

First Name:  Last Name:  Title:

Street Address:  Phone:  Organization:

Street Address2:  Email:  TechReport:

City:  State:  ZIP:  Analysis Assigned To:  Assigned To Date:

Comment:

CommentLink:

ResponseLog:

ResponseLink:

2009 Priority:  Priority:

1 = Next Release; 2 = Next Release;  
3 = Next Release +1; 4 = Hold;  
5 = Next Year; 6 = No Further Action;  
7 = Unprioritized; 8 = N/A

Analysis Log:

Follow-up Lead:

Disposition:

Disposition Date:

Disposition Status:

Task Number:

MOVESVersion:

CodeVersion:  DBVersion:

MEAT?:   
Design?:   
Coding?:   
Other?:   
Contract?:

ChangesResults?:

cord:  Unfiltered Search

# MOVES 2013 “Functional” Improvements

- **Planned and Potential Improvements**

- Upgraded diesel “retrofit” processing to allow fleet analysis of retrofit strategies
- Improved evaporative emission processing (e.g. multi day diurnal)
- Incorporate VOC and PM Speciation in MOVES
  - VOC and PM species to be directly compatible with air quality models (CMAQ, CAMx) (i.e. no post-processing required)
- Better Performance
  - Architectural change to order of calculator processing
  - Extensive review of all data base “indexing” to assure best possible speed of access
- Upgraded support for Cloud Computing
  - Release of documentation and programs for processing in the cloud

# MOVES 2013 “Functional” Improvements

- **Planned Improvements (continued)**
  - Upgraded capability for Windows7/8 testing
  - Rate of Progress calculation will be selectable by year
  - Miles per gallon calculator will be added to post processing scripts
  - Major upgrade for technical documentation (Software Development Reference Manual)
  - Improved (simpler) User Guide
  - Improved error and warning messages
  - Minor GUI improvements (e.g, more default selections)

# MOVES 2013 “Functional” Improvements

- **Addition of NONROAD draft**
  - To be discussed later
- **Inclusion of features that will allow MOVES to be used internationally**
  - Metric units (e.g. inputting of kilometers)
  - Building emission rates for fleets using new standards (e.g. European standards)
- **Resolution of high priority issues (“bugs”)**



# DATA UPDATES

# What are we updating?

- **New rules**
  - New regulations since MOVES2010b
- **New data**
  - New test programs and analyses
- **Data updates**
  - Future forecasts (VMT, population, sales)
- **Bug fixes**
- **Updates are dependent on timing of MOVES 2013**

# Updates: New Rules

- **MOVES only includes current regulations, not draft**
  - Heavy Duty (HD) Greenhouse Gas MY 2014-2018
    - Finalized August 2011
    - Decrease in heavy duty energy consumption rates
    - Decrease in criteria pollutant emissions as a result of improved aerodynamics and rolling resistance.
    - Increase in criteria emissions from auxiliary power units
  - Light Duty Greenhouse Gas MY 2017-2025
    - Not yet finalized
    - Decrease in light duty energy consumption rates
    - Decreased fuel consumption results in
      - Decrease in sulfur-related (SO<sub>2</sub>, SO<sub>4</sub>) emissions
      - Decreased refueling emissions
  - Tier 3
    - Not yet proposed
    - Changes to light duty emission rates.
    - Inclusion is dependent on timing of MOVES 2013 and timing of Tier 3

# New Data and Data Updates

- **Heavy Duty**
  - In-Use Compliance Program PEMS data
  - Houston Port Drayage Study
- **Evaporative Emissions**
  - Adding multi-day diurnals
  - Leak data from Colorado field study
  - Improvements to running loss emissions
- **Cold Temperature Data**
  - Test data on new vehicles
- **Fuel Effects**
  - Gasoline fuel effects
  - E85
  - Fuel supply
- **Activity**
  - Sales, population and VMT
  - Distribution of VMT and starts
    - Instrumented vehicle studies
- **Other**
  - Improved speciation of VOC and PM emissions
  - Other general updates

# Conclusion

- **MOVES 2013 will have significant functional upgrades**
- **MOVES2013 will have significant new data**
  - Plan to peer review reports prior to including data
- **Release in mid 2013 (tentative)**