

MOBILE6: EPA's New Highway Emission Factor Model

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MOBILE6 Schedule

- Finish Coding
- Test and Repair
- Release Draft (Beta) Model
- Revise Model as Needed
- Release Final Model
- Training/Complete Documentation
- Model Required

Changes for MOBILE6

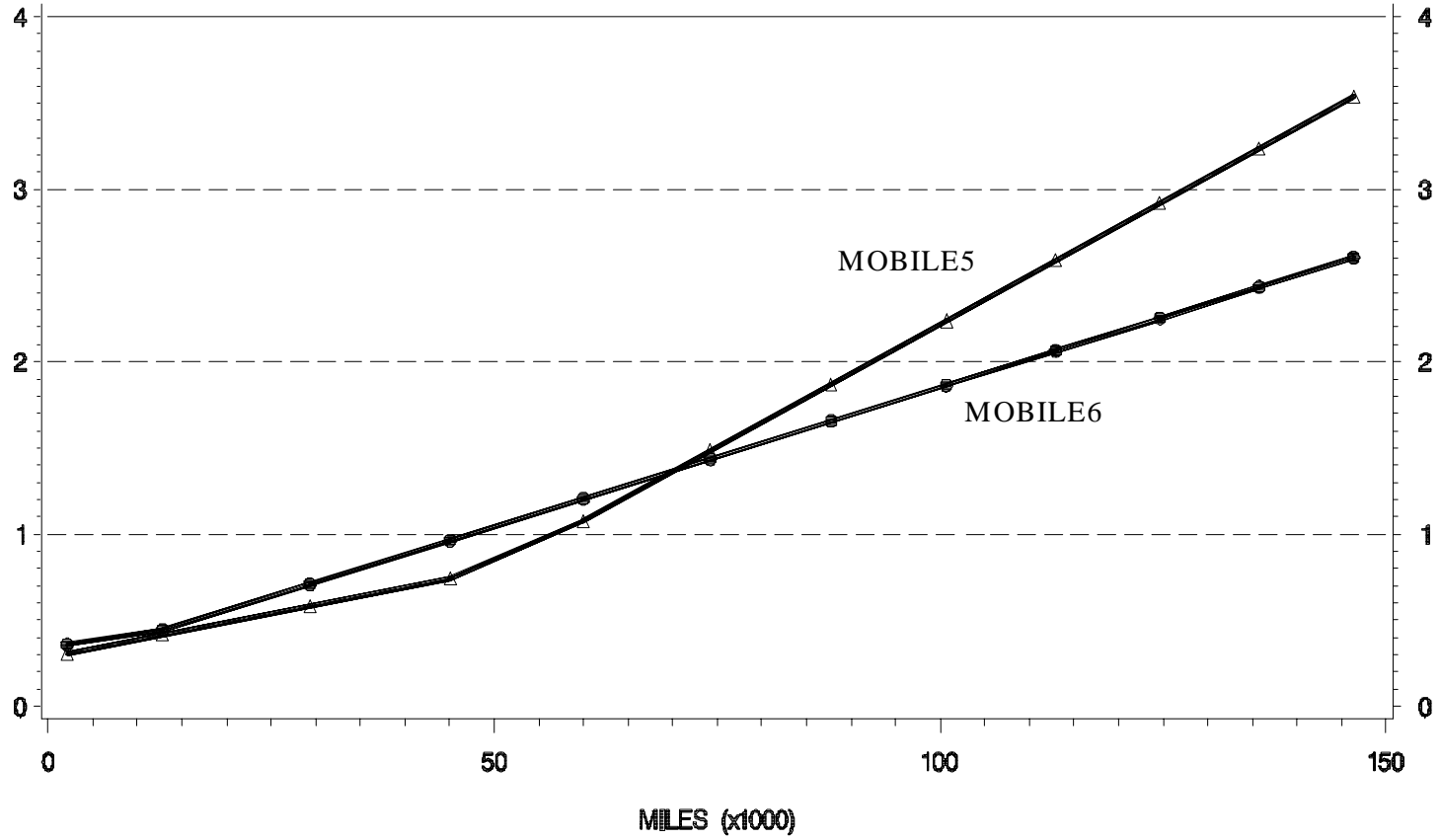
- Emissions, fleet and activity data
- Structural changes
- Input and output formats
- Documentation

Basic Exhaust Emissions

- Update in-use deterioration estimates for light duty cars and trucks.
- New emission standards (LD and HD)

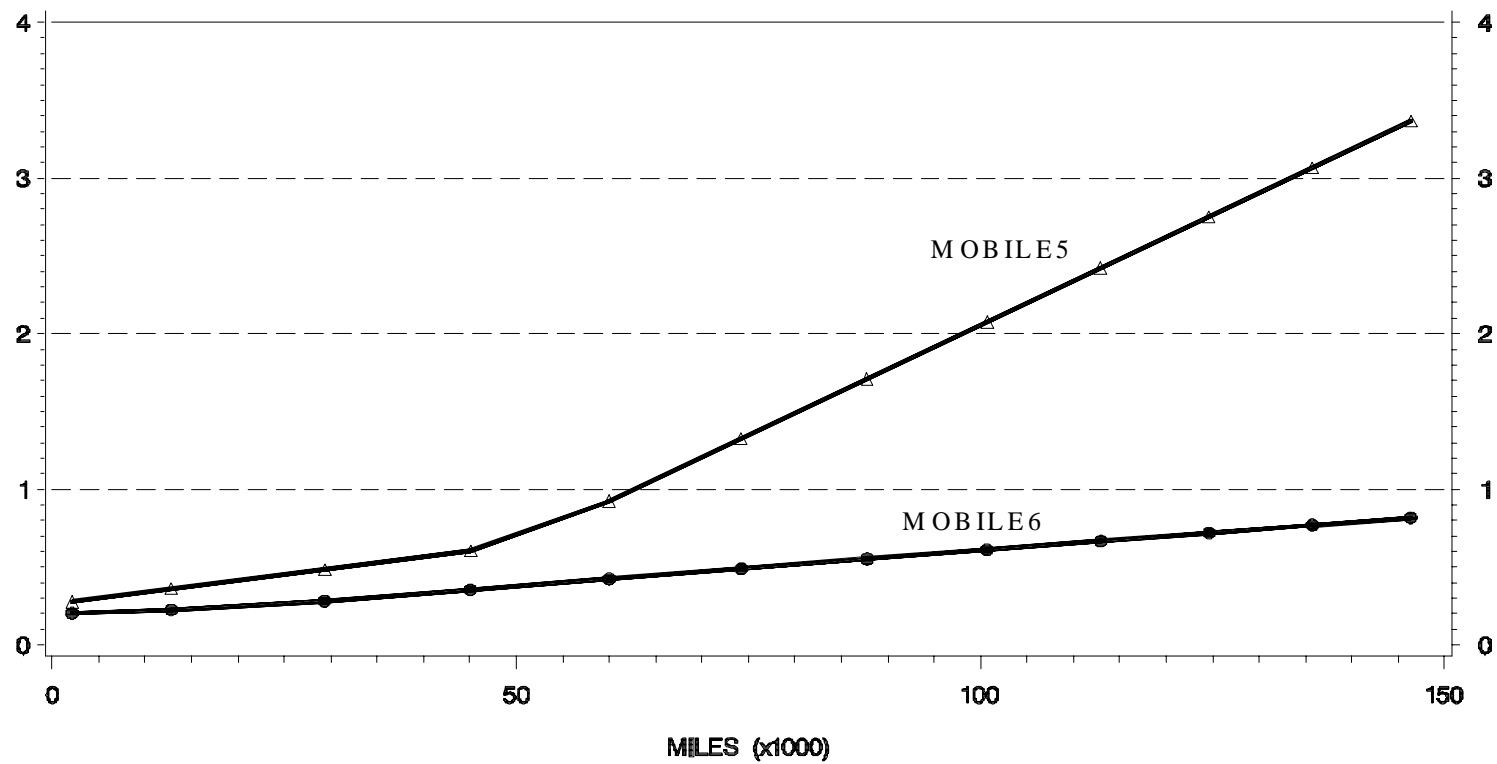
FTP COMPARISON OF MOBILE5 and PROPOSED MOBILE6 HC EMISSION FACTORS
1981 MODEL YEAR CARS

HC (g/mi)



FTP COMPARISON OF MOBILE5 and PROPOSED MOBILE6 HC EMISSION FACTORS
1992 MODEL YEAR CARS

HC (g/mi)



Light Duty Speed and Off-Cycle Effects

- New in-use driving cycles
- Facility-based speed corrections
- Air conditioning effects
- Effects of the Supplemental FTP rule

Effects of Fuel Composition

- Updated effects of oxygenated fuels on CO emissions
- Explicit effects of sulfur on exhaust emissions
 - including long-term and irreversibility effects.
- Explicit modeling of natural gas vehicles

Heavy Duty Emissions

- New emission standards
- New conversion factors
- Will be adjusted for HD NO_x excess

Changes to Evaporative HC

- New activity data and data on frequency of problem vehicles.
- Liquid leaker emissions added for hot soak, running loss, diurnal and resting loss.
- Diurnals and resting loss based on new real-time and multi-day data
- Hot soak revised at low RVPs
- New method for evap I/M calculations

Fleet Characterization

- New national average mileage accumulation estimates
- New national average registration (age) distributions
- New national vehicle class counts

Vehicle Activity

- New trip length estimates
- Engine start soak time distributions
- Diurnal soak time distributions
- Trip start and trip ends
- VMT by hour of day, facility, speed

Structural Changes

- Separation of start and running
- Calculation by hour
- Additional vehicle sub-classes
 - LDGV, LDDV
 - LDGT 1-4, LDDT 12, 34
 - HDGV 2b-8b, HDDV 2b-8b
 - MC
 - HDGB, HDDB-S, HDDB-T

Labeled Input and External Input Files

- Eliminates the need for “control” flags
- Reduces the amount of required input
- Expanded use of user-supplied comments
- External Files for:
 - Registration Distributions
 - In-use program descriptions
 - Local activity data

Modified Output Formats

- Eliminate most existing options
- Descriptive (120 column) output
- Electronic (tab delimited) “database” output

Database Output Fields

- File
- Run
- Scenario
- Vehicle Type
- Pollutant
- Hour
- Age
- Facility (Roadway) Type
- Emission Type
- Grams per mile
- Grams per hour
- Starts
- Ends
- Miles
- Miles per Gallon
- Hourly VMT fraction
- Facility VMT fraction
- Registration Distribution
- Vehicle Count
- Ambient Temperature
- Diurnal Temperature

Stakeholder and Peer Review

- Extensive documentation
- Expanded formal peer review
- Stakeholder review
- MOBILE Workshops
- EPA list server
- **<http://www.epa.gov/otaq/m6.htm>**