Progress Report on the Development of MOBILE6

CRC

March 18, 1996

Development of MOBILE6

- Schedule
- Process
- Areas of interest
- New information

Schedule for MOBILE6

- Mesh with OTAG and SIP processes
- Implementation schedule for the NAAQS revisions
- Probable window - between Fall, 97 and July, 98

The Process

- Expanded participation
  - User workshop
  - FACA work group
- More review
- More coordination with CARB

User Needs Workshop

- Workshop - summer of 1994
- Transportation and air quality planners
- Asked to brainstorm issues and prioritize
- Primarily technical issues

Issues - Users

- Flexibility
  - Model multiple / hybrid IM programs
- Idle emission estimates for intersection modeling
- Peer review of the model procedures
- Dependency on average speed
- Mileage accumulations / registration distributions for national default
- Separate running from start emissions
- Model validation

Technical Advisory Subcommittee

- Mobile source subcommittee of Clean Air Act Advisory Committee
- Subgroup that supports modeling - Modeling Work Group

Modeling Work Group

- Charter
  - Review technical data, publications, EPA products
  - Provide input on modeling methodologies
- Participants - 20 members representing states, industry, academia, public interest groups, EPA

Modeling Work Group - Activities

- Model validation statement
- Review procedures recommendation
- MOBILE update tasks

Model Validation Statement

- **Objective:**
- **Recommend appropriate model validation procedures**
- **Expected completion by Sept 96**

Model Review Procedures

- **Objective:**
- **Draft recommended procedures for obtaining review of analysis, methodologies, etc. that support the model and new revisions of the model**
- **Expected completion by Sept 96**

MOBILE Update Tasks

- Objectives:
  - Help set priorities for potential tasks to update MOBILE
  - Search out available research on highest priority tasks
  - Potentially provide analyses, recommendations on methodology
- Ongoing effort
- About 20 activities ranked high

Areas of Current Interest

- Non-FTP effects
- High mileage deterioration
- LEV emissions
- OBD effects
- Real world evap effects
- More fuel effect parameters

Desired Features

- Separate trip start emissions
- Detailed/flexible control program inputs (I/M)
- Simpler user interface
- Future - modal model

High Ranking MOBILE6 Projects

- Exhaust Emissions
  - Modeling of non-FTP emission impacts
  - Review high mileage deterioration rates
  - Modeling California LEVs with consistent I/M credits
  - Impact of onboard diagnostics (OBD) with or without I/M

High Ranking MOBILE6 Projects

- Evap Emissions
  - Incorporate effects of new evap tests procedure
  - Use real time diurnal data in MOBILE model
  - Impact of onboard diagnostics (OBD) with or without I/M

High Ranking MOBILE6 Projects

- IM Modeling
  - Develop IM credits for pre-1981 vehicles, remote sensing device programs, and OBD
  - Include the effect of OBD on emitter category growth rates and IM identification rates
- Fuel Effects
  - Incorporate the complex model in the MOBILE model

High Ranking MOBILE6 Projects

- Reevaluate age distribution and mileage accumulation rates
- Separate trip start emissions from running emissions
- Develop a modal emissions model for the future
- Provide options for trips per day and average time between trips emissions
- Investigate validation of the model
- Expand particulate data on in-use vehicle
- Review needs for non-road model

New Information

- New testing information
- Contracted analyses/studies

Recent Testing Activities

- Real time diurnal
- Hot soak
- Canister characterization
- Small amount of OBD testing
- Bag 4 or non-FTP testing
- Driving cycle data at higher speeds
- Trip frequency and patterns

Contracted Analytical Studies

- **Completed work**
  - **Determine effect of RVP and higher temp on exhaust emissions**
  - **Develop methodology for utilizing IM240 data in development of basic emission rates**
  - **Develop methodology for generating representative driving cycles**

Contracted Analytical Studies

- In progress
  - Determine national estimates of age, mileage distributions
  - Determine future technology fractions
- Future work if funding available
  - Update HDV g/bhp-hr to mile conversions
  - Develop new speed correction factors
  - Update evap modeling

Likely MOBILE6 Features

- Recalculated basic emission rates
- New evaporative emission rates
- Detailed fuel parameter effects
- Trip characteristics

MOBILE5b

- Final reformulated gasoline
- Onboard refueling phase-in
- Detergent gasoline effects
- Initial “Bag 4” effects
- Hybrid I/M options