The Easy Mobile Inventory Tool (EMIT)

An Emission Inventory Tool for Rural and Small Urban Areas





What is EMIT?

EMIT is a tool to simplify mobile source inventory development in rural and small urban areas, for:

SIP development Conformity determinations

EMIT does not change MOBILE6, but provides an easy way to—

Enter data into MOBILE6 Calculate speeds in areas without travel models Calculate and summarize on-road mobile source emissions





What Does It Do?

EMIT provides a graphical user interface for entering commonly-used local data into MOBILE6, including:

External conditions Fleet characteristics Vehicle activity parameters Fuel characteristics Control programs

EMIT also uses local Highway Performance Monitoring System (HPMS) data to:

Calculate speeds for use in MOBILE6 Calculate total emissions



EMIT Capabilities

Inventories can be produced for CO, VOC/NOx, PM10, or PM2.5

Inventories can be calculated for January, July, or all 12 months

VMT adjustment factors allow calculation of speeds and inventories by time of year

VMT forecast factors allow calculation of future year inventories



Speeds in EMIT

Most rural and small urban areas do not have travel models, so they need an alternative methodology for calculating present and future speeds

EMIT processes user-provided HPMS data (VMT and lane-miles) to calculate speeds by road type

Speeds can be refined by month, hour, and/or direction of travel

Users can choose between Bureau of Public Road or Texas Transportation Institute speed methodologies, and rely on default speed calculation parameters or input local factors





EMIT Processing Steps

- 1) Speeds are calculated using HPMS data, and a MOBILE6 input file is created incorporating user inputs
- 2) MOBILE6 runs
- 3) HPMS VMT data are used to calculate total emissions
- 4) Reports are generated:
 - 1) Summary table: travel activity and emissions by HPMS facility and area type
 - 2) Emissions chart
 - 3) MOBILE6 input and output files



EMIT Limitations

Only one calendar year can be modeled at a time

EMIT does not facilitate modeling of some MOBILE6 inputs (many for commands where EPA recommends use of defaults), including:

Air conditioning inputs (peak sun, sunrise/sunset, cloud cover) Mileage accumulation rate, diesel fractions Soak and trip length distributions Anti-tampering programs



Basic MOBILE6.2 Data Managed by EMIT

Edit View Help		
穿 🟥 🗦 💻	- 🏢 - 💹 - 🐸	\sim
c M6.2 Monthly M6.2 HPMS Calculate	Results File Exit	About
un Description (Optional)		
		Enter Monthly
		Data Vice-
asic MOBILE6.2 Data		Erase Basic
		MOBILE6.2 Data
Pollutant(s):	C CO C HC/NOx C PM-10 C PM-2	.5
Calendar Year:		
The local face and a set of the	C	
Evaluation Month:	January C July C Mont	hly
Altitude:	C Low C High	
Altitude: File of Age Distribution of Vehicle Registrations:		
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class:	C Low C High REGDATA.D	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1:	C Low C High REGDATA.D LDT2: LDT3:	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT1: LDT1: LDT4: HDV2B: LDT2:	C Low C High REGDATA.D LDT2: LDT3: LDT3: HDV3: HDV4: LDT4:	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT1: LDT4: HDV2B: HDV5: HDV5: HDV6: LDT4: L	C Low C High REGDATA.D LDT2: LDT3: HDV3: HDV4: HDV7: HDV8A: HDV8A	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT1: LDT1: LDT4: HDV2B: LDT2:	C Low C High REGDATA.D LDT2: LDT3: LDT3: HDV3: HDV4: LDT4:	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT4: HDV2B: HDV5: HDV6: HDV8B: HDBS:	Image: Constraint of the system C High REGDATA.D LDT2: LDT3: LDT3: HDV3: HDV4: HDV4: HDV4: HDV7: HDV8A: MC: MC:	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT4: HDV2B: HDV5: HDV6: HDV8B: HDS:	Cow High REGDATA.D LDT2: LDT3: HDV3: HDV4: HDV7: HDBT: MC: HVMT.DEF	
Altitude: File of Age Distribution of Vehicle Registrations: VMT Fraction by Vehicle Class: LDV: LDT1: LDT4: HDV2B: HDV5: HDV6: HDV8B: HDBS:	Image: Constraint of the system C High REGDATA.D LDT2: LDT3: LDT3: HDV3: HDV4: HDV4: HDV4: HDV7: HDV8A: MC: MC:	

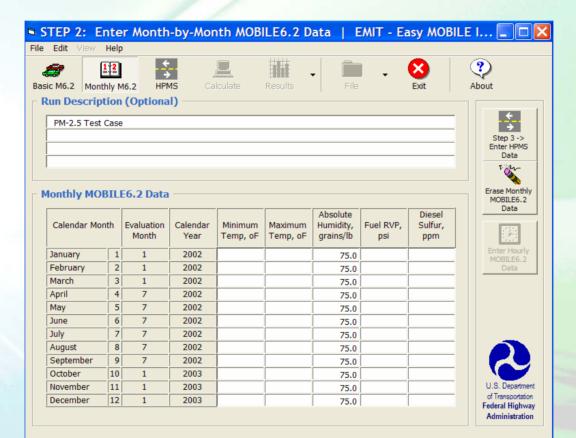


Example Input Error Notification from EMIT

TEP1: Enter Basic MOBILE6.2 Da	ta EMIT - Easy MOBILE Inventory Tool 📃
Edit View Help	
ic M6.2 Monthly M6.2 HPMS Calculate	Results File Exit About
un Description (Optional)	
PM-2.5 Test Case	12
	STEP 2 -
	Enter Mon Data
	s ur
asic MOBILE6.2 Data	Erase Ba
Pollutant(s):	C CO C HC/NOx C PM-10 @ PM-2.5
Calendar Year:	20022
Evaluation Month:	Interview Grand State
Altitude	Cutation Contraction
File of INPUT ERROR	
VMT F L L H HD	out of Range - Enter a Value Between 1952 and 2050, Inclusively
File of VMT Fraction by Hour of the Day:	HVMT.DEF
File of VMT Fraction by Hour of the Day: File of Vehicle Engine Starts per Day:	STREPDAY D

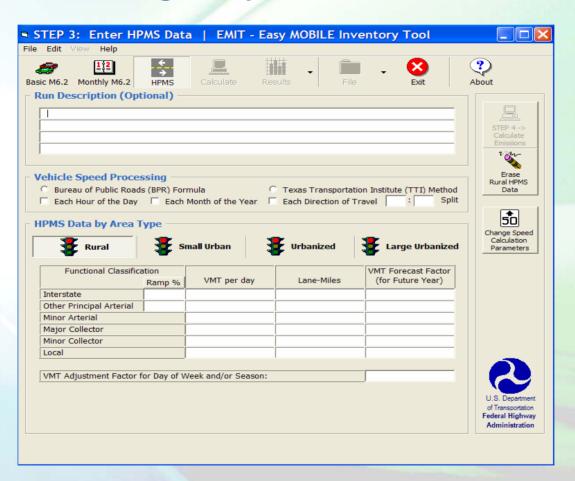


Monthly MOBILE6.2 Data Managed by EMIT



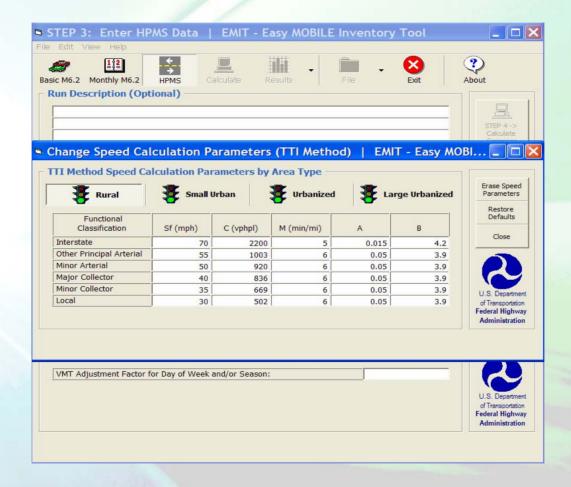
OOO Federal Highway Administration O RESOURCE CENTER 000

HPMS Data Managed by EMIT



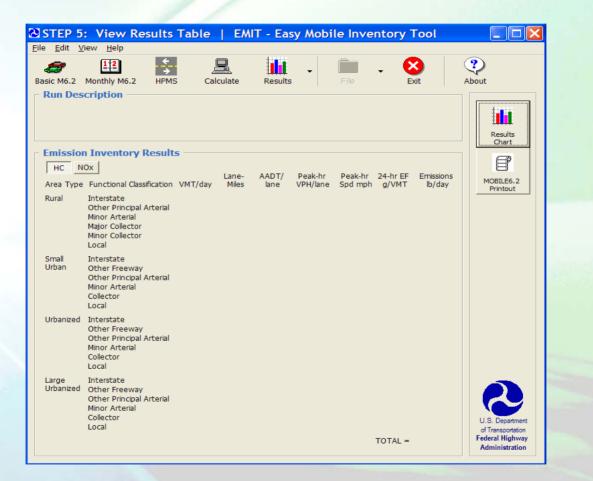


Changing Speed Calculation Parameters in EMIT





Summary Table of Results in EMIT



OOO Federal Highway Administration O RESOURCE CENTER 000

Software Availability

Basic capabilities have been defined, coding is in process

Beta version should be available in mid-June

FHWA will distribute free of charge when complete

Contact:

Mike Claggett, FHWA Resource Center (720) 963-3201 Michael.Claggett@fhwa.dot.gov

