

COMMUTER Model v2.0 User Manual

COMMUTER Model v2.0 User Manual

Transportation and Regional Programs Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Prepared for EPA by
Thomas R. Carlson, Sierra Research, Inc.
Robert G. Dulla, Sierra Research, Inc.
J. Richard Kuzmyak

Updated by
Christopher D. Porter
Cambridge Systematics, Inc.
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*This technical report does not necessarily represent final EPA decisions or positions.
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You will also need specific background information for your particular program. This user manual will assist you in determining the appropriate inputs into the model. Again, if you have any further questions, you can consult with your regional EPA office.

1.8 What other documentation is available?

This user manual presents the key instructions needed for you to effectively develop inputs and run COMMUTER. Although it attempts to provide you with enough information to understand how to develop inputs and operate the model, it is not exhaustive in detail. If you are interested in further understanding the theory behind the modeling calculations, please consult the companion document to this user manual, "*Procedures Manual for the COMMUTER Model v2.0.*"^{1*}

1.9 What has Changed Compared to COMMUTER Version 1.0?

COMMUTER Model version 1.0 was originally released in 2000. Version 2.0, released in 2005, incorporates a number of updates and changes to calculation procedures, to make use of the most recently available travel and emissions data and to expand the model's capabilities. Significant changes include the following:

- The default travel parameters (e.g., mode shares, trip lengths) have been updated using data from the 2000 U.S. Census, the 2001 Nationwide Household Transportation Survey, and other recent sources.
- The default and area-specific mode choice coefficients have been updated based on a review of current national practice. Default coefficients are no longer provided for different area sizes, since a review of the coefficients did not find significant differences among urban areas of different sizes.
- Some of the TCM impact values embedded in the model have been updated, based on recent research. These include the mode share impacts for "level 3" and "level 4" carpooling and vanpooling support, and default participation level for telecommuting programs.
- Emissions are now calculated using MOBILE6.2, EPA's most current version of the MOBILE emission factor model, rather than MOBILE5b.
- Emissions are reported for seven additional pollutants, including particulate matter (PM2.5, users can get PM10 output by importing their own MOBILE6.2 runs with PM10 output) and six air toxics, as well as for the four pollutants originally reported by COMMUTER - volatile organic compounds (VOC), carbon monoxide (CO), oxides of nitrogen (NOx), and carbon dioxide (CO2). Emissions for some pollutants are now reported in pounds per day as well as in tons per day.

* Superscripts denote references provided in Section 6.

**Figure 3
Model Layout Screen**

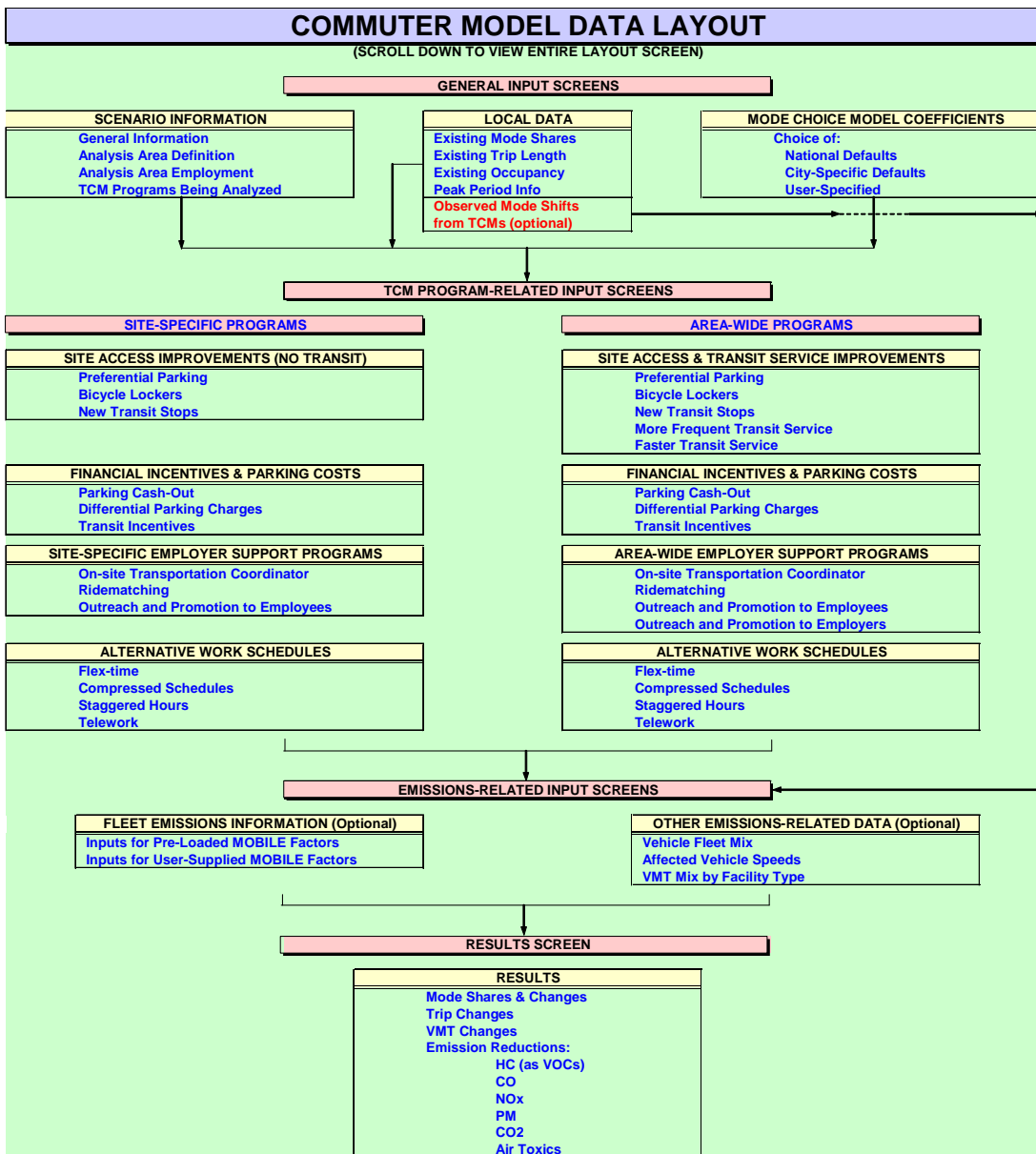


Figure 4

COMMUTER MODEL RESULTS

SCENARIO INFORMATION

Description	
Scenario Filename	
Emission Factor File	
Performing Agency	
Analyst	
Metropolitan Area	
Area Size	
Analysis Scope	
Analysis Area/Site	
Total Employment	

PROGRAMS EVALUATED

- Site Walk Access Improvements
- Transit Service Improvements
- Financial Incentives
- Employer Support Programs
- Alternative Work Schedules

- User-Supplied Final Mode Shares

MODE SHARE IMPACTS

Mode	Baseline	Final	%Change
Drive Alone			
Carpool			
Vanpool			
Transit			
Bicycle			
Pedestrian			
Other			
No Trip			
Total			

Shifted from Peak to Off-Peak	
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TRAVEL IMPACTS (relative to affected employment)

Quantity	Peak	Off-Peak	Total
Baseline VMT			
Final VMT			
VMT Reduction			
% VMT Reduction			
Baseline Trips			
Final Trips			
Trip Reduction			
% Trip Reduction			

EMISSION REDUCTIONS (positive values are decreases)

lbs/day:

Pollutant	Peak	Off-Peak	Total
HC			
CO			
NOx			
PM2.5			
Toxics			
Acetaldehyde			
Acrolein			
Benzene			
1, 3-Butadiene			
Formaldehyde			
MTBE			
CO2			

tons/day:

Pollutant	Peak	Off-Peak	Total
HC			
CO			
NOx			
CO2			

