



## FDM 22-20-1 Introduction

February 15, 1988

A highway project air quality analysis begins with the development of vehicular emission factors for the transportation related pollutants: HC, CO, and NO<sub>x</sub>. Presently only CO is modeled on a project level. These emission factors are the number of grams of a pollutant emitted per vehicle per mile for a given vehicle speed and a given year. Idle emission rates for a given year are presented as the number of grams of a pollutant per vehicle per minute. The development of representative emission factors (or rates) for project level analysis is necessary in order to determine the effect of a project on the area's air quality through a screening technique or a detailed modeling technique.

The current version of the mobile source emission factors is referenced in "Compilation of Air Pollutant Emission Factors: Highway Sources," July 1984 (EPA 460/3-84-005), published by the Environmental Protection Agency (EPA). These mobile source emission factors are available through the EPA's computer program --MOBILE3. Further documentation of the mobile source emission factors and formulas for the computation of the mobile source emission factors may be found in "Mobile Source Emission Factors - For Low Altitude Areas Only," published by the EPA in March 1978, document number EPA-400/9-78-006.

The MOBILE3 User's Manual<sup>1</sup> is available through the Department of Transportation's (DOT) Region Offices and the emission factor computer program is available on the terminals of the state DOT. The user's manual and computer program is also available through the National Technical Information Service (NTIS). The telephone number is 1-703-487-4650.

## FDM 22-20-5 Mobile3 Computer Program

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The mobile source emission factor computer program (MOBILE3) is based on "Compilation of Air Pollutant Emission Factors: Highway Mobile Sources," August, 1984 (EPA 460/3-84-005). These emission factors reflect the statutory timetables for new vehicle emission standards prescribed in the 1977 Clean Air Act Amendments. MOBILE3, with its many possible adjustments, has been designed to provide the user with a flexible tool that can be utilized in a wide variety of air pollution planning functions.

### Data Requirements

MOBILE3 uses an input data set which supplies project description information, program control data, and data elements describing the scenarios for the desired composite emission factors the user would like to see calculated. Due to the intricacy of the MOBILE3 computer program, only a brief overview of the input data, along with values specific to Wisconsin are included. A copy of the MOBILE3 User's Manual is available through Department of Transportation (DOT) Region Offices.

MOBILE3 requires a wide variety of input data of which only a number of values are applicable in Wisconsin emission factor calculations. [Attachment 5.1](#) describes the data used in MOBILE3 calculations within the state. Typical values used in the input are also presented. [Attachment 5.2](#) presents hot/cold start percentages used as input. [Attachment 5.3](#) presents input specific to inspection/maintenance (I/M) data.

### LIST OF ATTACHMENTS

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|--------------------------------|--|
| <a href="#">Attachment 5.1</a> | Description of General Input Values for MOBILE3 Model                |
| <a href="#">Attachment 5.2</a> | Description of Percent Hot/Cold Start Input Values for MOBILE3 Model |
| <a href="#">Attachment 5.3</a> | Description of I/M Input Values for MOBILE3 Model                    |

<sup>1</sup> "Users Guide to MOBILE3 (Mobile Source Emissions Model)," June 1984 (EPA 460/3-84-002).