

# OVERVIEW OF MODULES

## TRIM.FaTE User's Guide – September 2005

This table presents an overview of the primary sections and topics covered in each TRIM.FaTE User's Guide module. For brevity, only the main sections and subsections included in the User's Guide have been included in this table. In addition, sections listing references cited in the User's Guide and some appendices are included in the User's Guide that are not listed in this table.

Module	Description	Overview of Contents
<b>Introduction</b>	Introduction to the TRIM.FaTE User's Guide modules.	Summary of the purpose and structure of this set of User's Guide modules and definitions of key terms used in this document.
<b>1 Software Overview</b>	Instructions on how to navigate TRIM.FaTE software.	<ol style="list-style-type: none"> <li>1. BASIC TRIM.FaTE FUNCTIONS</li> <li>2. TRIM.FaTE MAIN WINDOW</li> <li>3. NAVIGATING LIBRARIES               <ol style="list-style-type: none"> <li>3.1 Menu Bar</li> <li>3.2 Object Browser</li> <li>3.3 Property Editor</li> </ol> </li> <li>4. NAVIGATING PROJECTS AND SCENARIOS               <ol style="list-style-type: none"> <li>4.1 Project Window</li> <li>4.2 Scenario Window</li> </ol> </li> </ol>
<b>2 Overview - Creating a New Scenario</b>	Overview of steps required to set up a new scenario. Includes flow chart of scenario set-up steps, a brief description of each step, references to other User's Guide modules, and a brief overview of the modeling process.	<ol style="list-style-type: none"> <li>1. OVERVIEW</li> <li>2. STEPS FOR SETTING UP A SCENARIO</li> <li>3. THE TRIM.FaTE MODELING PROCESS</li> </ol>
<b>3 Library and Scenario Data Files</b>	Description of import files, input data files, and export files, along with information on how these files are used and formatting/syntax requirements for each type of file.	<ol style="list-style-type: none"> <li>1. IMPORT FILES               <ol style="list-style-type: none"> <li>1.1 Library Import Files</li> <li>1.2 Scenario Import Files</li> </ol> </li> <li>2. INPUT DATA FILES               <ol style="list-style-type: none"> <li>2.1 GIS Overlay Files</li> <li>2.2 Statistics Files</li> <li>2.3 Time-varying Data Files</li> </ol> </li> <li>3. EXPORT FILES               <ol style="list-style-type: none"> <li>3.1 Library Exports</li> <li>3.2 Scenario Exports</li> </ol> </li> </ol>
<b>4 Adding New Components to a Library</b>	Description of the process for adding new chemicals, properties, property types, algorithms, compartment types, and composite compartments to a TRIM.FaTE library.	<ol style="list-style-type: none"> <li>1. ADDING CHEMICALS</li> <li>2. ADDING PROPERTIES</li> <li>3. ADDING PROPERTY TYPES</li> <li>4. ADDING ALGORITHMS</li> <li>5. ADDING COMPARTMENT TYPES</li> <li>6. ADDING COMPOSITE COMPARTMENTS</li> </ol> Appendix A – Formula Syntax
<b>5 Developing the Spatial Layout</b>	Instructions on how to set up the volume element import file and recommendations on how to	<ol style="list-style-type: none"> <li>1. CREATING THE VOLUME ELEMENT IMPORT FILE               <ol style="list-style-type: none"> <li>1.1 General Overview and Syntax of File Format</li> </ol> </li> </ol>

Module	Description	Overview of Contents
	define the geographic extent, air/surface parcels, and volume elements based on site- and application-specific characteristics.	<ul style="list-style-type: none"> <li>1.2 Points</li> <li>1.3 Parcels</li> <li>1.4 Volume Elements</li> <li>1.5 Map Projection Information</li> <li>2. DEVELOPING THE SPATIAL LAYOUT <ul style="list-style-type: none"> <li>2.1 Defining the Overall Modeling Region</li> <li>2.2 Designing the Parcel Layout</li> <li>2.3 Defining the Vertical Dimensions of Volume Elements</li> </ul> </li> </ul>
<b>6 Implementing Biota in a TRIM.FaTE Scenario</b>	Overview of concepts, properties, and steps important for the user to understand when implementing biota in a TRIM.FaTE scenario.	<ul style="list-style-type: none"> <li>1. OVERVIEW</li> <li>2. ESTABLISHING THE TERRESTRIAL VEGETATION</li> <li>3. ESTABLISHING THE AQUATIC BIOTIC COMPARTMENT TYPES</li> <li>4. ESTABLISHING THE TERRESTRIAL ANIMAL COMPARTMENT TYPES</li> <li>5. REVIEWING AND EVALUATING THE BIOTIC SYSTEMS</li> <li>6. SEASONAL FEATURES</li> </ul>
<b>7 Source Characterization</b>	Conceptual description of chemical sources in TRIM.FaTE (e.g., facilities) and steps for how to configure a source.	<ul style="list-style-type: none"> <li>1. CONCEPTUAL BACKGROUND FOR SOURCE MODELING <ul style="list-style-type: none"> <li>1.1 TRIM.FaTE Model Configuration</li> <li>1.2 Adding Chemical Mass to a TRIM.FaTE Scenario</li> <li>1.3 Fate of Chemical Mass Released by a Source</li> </ul> </li> <li>2. BOUNDARY CONTRIBUTIONS</li> <li>3. SOURCE DATA NEEDED FOR A TRIM.FaTE SCENARIO <ul style="list-style-type: none"> <li>3.1 Location of Source</li> <li>3.2 Chemicals to be Modeled</li> <li>3.3 Emission Rates</li> <li>3.4 User Tips for Source Characterization and Data Inputs</li> </ul> </li> <li>4. CONFIGURING THE SOURCE IN A TRIM.FaTE SCENARIO</li> <li>5. EDITING SOURCE DATA</li> </ul>
<b>8 Links and Algorithms</b>	How to set up and edit links, relationship between links and algorithms, and general guidance related to algorithms.	<ul style="list-style-type: none"> <li>1. LINKS <ul style="list-style-type: none"> <li>1.1 How Are Links Created?</li> <li>1.2 Why and How Are Links Selected?</li> <li>1.3 What Are Link Properties?</li> <li>1.4 Why and How Are Links Removed?</li> </ul> </li> <li>2. ALGORITHMS <ul style="list-style-type: none"> <li>2.1 What Are Algorithm Properties?</li> <li>2.2 How Are Algorithms Added to Links?</li> <li>2.3 Why and How Are Algorithms Removed from a Link?</li> </ul> </li> </ul>
<b>9 Scenario Properties</b>	Descriptions of basic scenario properties and how they are set up in the model.	<ul style="list-style-type: none"> <li>1. ROLE OF SCENARIO PROPERTIES</li> <li>2. SETTING SCENARIO PROPERTIES</li> <li>3. SUMMARY OF SCENARIO PROPERTIES</li> </ul>

Module	Description	Overview of Contents
<b>10 Compiling and Processing Meteorological Data Inputs</b>	Required meteorology data and processing of related input file for a scenario.	<ol style="list-style-type: none"> <li>1. REQUIREMENTS FOR METEOROLOGICAL DATA</li> <li>2. SOURCES OF METEOROLOGICAL DATA</li> <li>3. METEOROLOGICAL DATA PRE-PROCESSORS</li> <li>4. OTHER TOPICS RELATED TO METEOROLOGICAL DATA</li> </ol>
<b>11 Estimating Runoff and Erosion Fractions for Surface Soil</b>	Overview of how to estimate the fraction of total erosion and fraction of total runoff link properties that must be assigned for links between surface soil, surface water, and sinks.	<ol style="list-style-type: none"> <li>1. BACKGROUND</li> <li>2. ESTIMATING RUNOFF AND EROSION FRACTIONS</li> </ol> Appendix A – Illustrative Stepwise Approach to Estimating Erosion and Runoff Fractions: An Example
<b>12 Pointers for Setting Up a TRIM.FaTE Scenario</b>	Additional information pertinent to setting up a scenario.	<ol style="list-style-type: none"> <li>1. GENERAL <ol style="list-style-type: none"> <li>1.1 Mass and Materials Balance in TRIM.FaTE</li> <li>1.2 Groundwater Modeling</li> <li>1.3 Timing Inputs at Set-up</li> <li>1.4 Time Scale for Model Results</li> <li>1.5 Specifying Initial Concentrations</li> <li>1.6 Specifying Fixed Concentrations</li> <li>1.7 Adding and Linking Sinks in a Scenario</li> <li>1.8 Sediment Burial</li> </ol> </li> <li>2. CHEMICAL-SPECIFIC INPUTS <ol style="list-style-type: none"> <li>2.1 First-Order Half-Life Versus First-Order Rate Constant</li> <li>2.2 Degradation Versus Transformation</li> <li>2.3 Chemical Fate in Biota</li> <li>2.4 Elimination Versus Degradation</li> </ol> </li> <li>3. INTERDEPENDENT PROPERTIES <ol style="list-style-type: none"> <li>3.1 Precipitation</li> <li>3.2 Surface Water</li> <li>3.3 Soil and Sediment Particle Properties</li> <li>3.4 Soil Compartment Vertical Dimensions</li> <li>3.5 Average Vertical Velocity of Water in Soil</li> </ol> </li> </ol>
<b>13 Operation of TRIM.FaTE in Steady-State Mode</b>	Summary of set-up requirements for running TRIM.FaTE in steady state mode.	Contents include a brief overview of the steps the user must complete to set up a steady-state simulation.
<b>14 Simulation Results and Analyses</b>	Describes the different types of outputs generated by TRIM.FaTE and options for reporting, processing, and viewing results.	<ol style="list-style-type: none"> <li>1. SIMULATION OUTPUT FILES <ol style="list-style-type: none"> <li>1.1 Compartment Results</li> <li>1.2 Deposition Estimates for Soil Compartments</li> <li>1.3 Scenario Property Values and Results at a Time Point</li> <li>1.4 Scenario Configuration and Results in MySQL Format</li> </ol> </li> <li>2. OUTPUT PROCESSORS <ol style="list-style-type: none"> <li>2.1 The Averager</li> <li>2.2 The Transposer</li> <li>2.3 The Aggregator</li> </ol> </li> <li>3. GRAPHICAL RESULTS VIEWER</li> </ol>
<b>15 TRIM.FaTE</b>	Description of how to	1. INTRODUCTION

Module	Description	Overview of Contents
<b>Sensitivity and Monte Carlo Analyses</b>	implement sensitivity and Monte Carlo analyses in the TRIM.FaTE framework. <i>{March 2003}</i>	2. SENSITIVITY ANALYSES 3. MONTE CARLO VARIABILITY AND UNCERTAINTY ANALYSES
<b>16 Tables of TRIM.FaTE Input Parameters</b>	Set of tables that summarize all current TRIM.FaTE inputs with parameter descriptions.	<b>Tables include:</b> <ul style="list-style-type: none"> <li>· Non-chemical-dependent parameters for abiotic compartment types</li> <li>· Non-chemical-dependent parameters for biotic compartment types</li> <li>· Chemical-dependent (i.e., value varies by chemical) parameters independent of compartment type</li> <li>· Chemical-dependent parameters for abiotic compartment types</li> <li>· Chemical-dependent parameters for biotic compartment types</li> <li>· Source, meteorological, and other input parameters</li> </ul>