Chapter 3

Modeling Guidelines and Schedule

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Overview

• General Modeling Guidelines
• Modeling Schedule
• Modeling Process Flow Chart
General Modeling Guidelines

• Developed By Mn/DOT & FHWA to:
  • Clarify Modeling Process
  • Produce Reusable and Verifiable Products
  • Meet Federal Operational Analysis Requirements for the Interstate Access Request

• Constantly Updated : See Website for Latest Version
General Modeling Guidelines

Modeling Expectations

- Lists 21 Items to be Followed on all Modeling Projects
- Categories:
  - Model Requirements
  - Data Requirements
  - Calibration Requirements
  - Quality Control Requirements
General Modeling Guidelines
Deliverables

- Lists 11 Required Deliverables
- The Most Critical Are:
  - Link-Node Diagrams
  - Lane Schematics
  - QA/QC Sheets
  - O-D Matrixes
  - Balanced Traffic Demand Dataset
  - MOE Tables
General Modeling Guidelines
Available Resources

• Resources Available Include:
  • Data Extraction Workstation Information
  • Mn/DOT Contact Personnel Phone Numbers and e-mail Addresses
  • Useful Websites
Modeling Schedule

CORSIM Modeling Schedule

Tasks
- Kick Off Meeting
  - Determine Modeling Limits
  - Discuss Time Periods
  - Identify Scenarios
  - Discuss Schedule
- Data Collection
  - Field Review
  - Assemble Base Mapping
  - Traffic Volumes
  - Speed Runs
  - Queue Observations
- Base Model Development
  - Develop Link-Node Diagram
  - Develop Lane Schematic
  - Balance Traffic Data Sets
  - Create Model
  - Develop O-D Matrix
  - QA/QC Form
- Calibration
- Alternative Analysis
  - Measures of Effectiveness Tables and Graphics
  - Write up of problem areas and proposal options
  - Sensitivity Testing
- Final Report
  - Review Milestone/Documentation

Intermediate review of link-node and lane schematic diagrams required if model is over 4 miles long.
(link-node in CADD using real coordinates, Lane Schematic in CADD)
Modeling Schedule
Project Scoping

• Determine Model Limits
• Discuss Time Periods
• Identify Scenarios
• Develop Schedule
• Determine Data Collection Requirements
Modeling Schedule
Data Collection & Assembly

• Assemble Base Mapping
• Collect and Assess Traffic Volumes and Speeds
• Collect and Assess Traffic Control Information
• Perform Field Review of the Study Area
Modeling Schedule
Base Model Development

• Develop Link-Node Diagram
• Develop Lane Schematic
• Balance Traffic Data Sets
• Develop O-D Matrix
• Create Base Model
• Perform QA/QC and Provide Documentation
Modeling Schedule
Calibration

• Verify Model Results Against Field Observations and Traffic Data
• Develop Calibration Result Tables and Graphics

• This is the **Most Important Step** in the Modeling Process
• It is an Iterative Process
• Parameters **Will** Be Transferred to Future Models
Modeling Schedule
Alternative Analysis

- Develop Proposed Alternatives
- Prepare MOE Tables and Graphics
- Evaluate Alternatives
- Propose Additional Improvements
- Perform Sensitivity Testing
Modeling Schedule
Final Report

• Prepare Final Report
  • Study Objectives and Scope
  • Data Collection
  • Forecasting Assumptions
  • Description of Alternatives
  • Results
Modeling Schedule
Final Report

• Prepare Technical Appendix
  • Technical Memos
  • Calibration Results
• Tabular Summaries
• Graphical Summaries