

# 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

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)

Base Model Development

- Develop Link-Node Diagram
- Develop Lane Schematic
- Balance Traffic Data Sets
- Create Model
- Develop O-D Matrix
- QA/QC Form

Calibration

- Verify model results against observed field operational characteristics
- Calibration Tables and Graphics

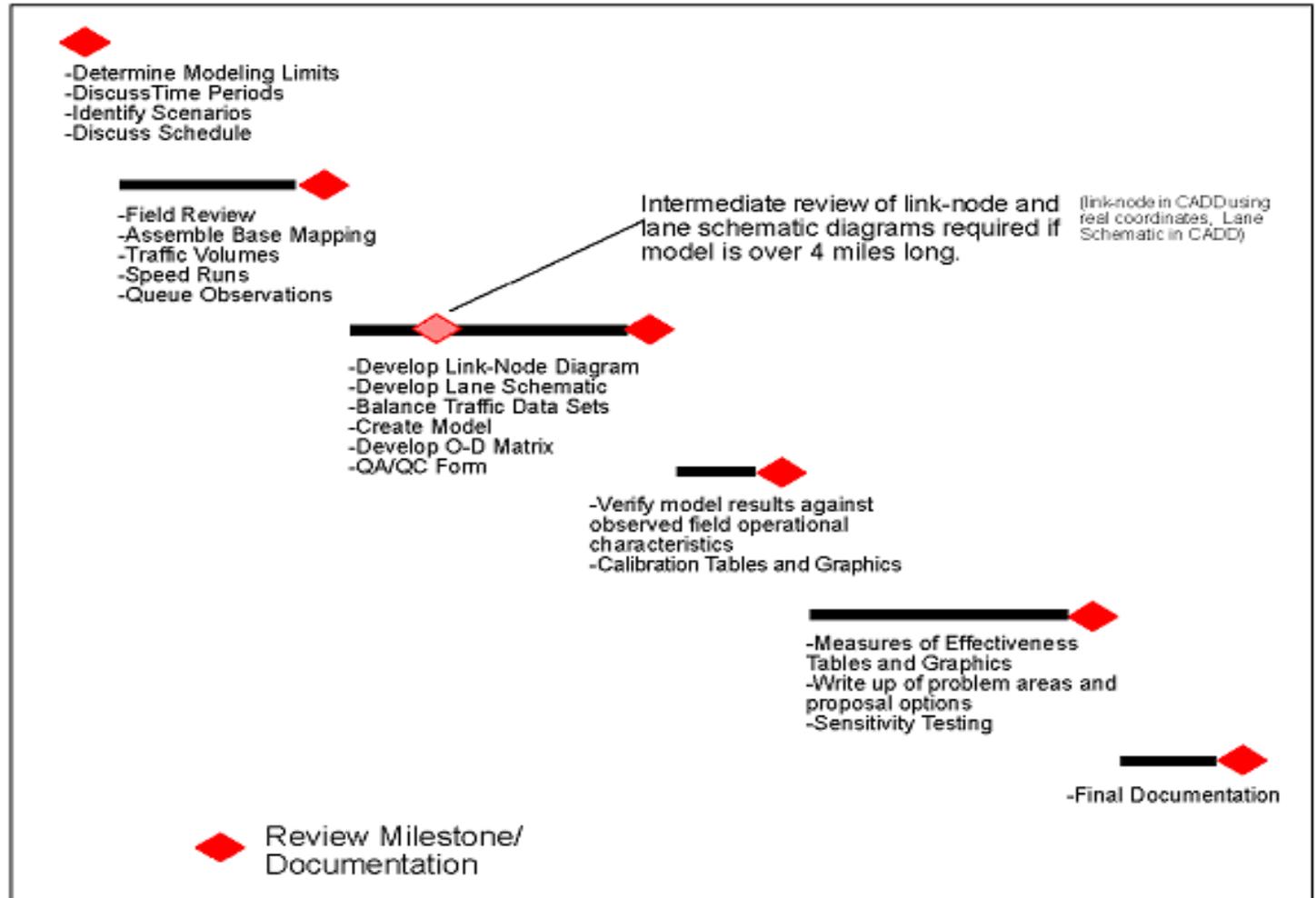
Alternative Analysis

- Measures of Effectiveness Tables and Graphics
- Write up of problem areas and proposal options
- Sensitivity Testing

Final Report

- Final Documentation

◆ Review Milestone/ Documentation



# 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