Overview

- Identify and Define Project Purpose
- Model Selection
- Identify Model Limits
- Data Collection Requirements
- Level of Effort
Identify and Define Project Purpose

• Is the Project:
  • Interstate Access Report:
    ▪ New Access
    ▪ Modified Interchange
  • Planning Study:
    ▪ Trunk Highway System Modifications
  • Research Project:
    ▪ Model Testing and Verification
Model Selection : Level 1

- Level 1 Characteristics:
  - AADT < 40,000
  - Influence Area < 4 Miles
  - New or Modified Service Interchange
- May Require Microsimulation
- HCM Analysis Could Be Acceptable For Final Analysis
- HCM Analysis Can Be Used to Assist in Initial Design Process
Model Selection : Level 2

- Level 2 Characteristics:
  - $40,000 < \text{AADT} < 75,000$
  - $4 \text{ miles} < \text{Influence Area} < 6 \text{ Miles}$
  - New or Modified Service Interchange
- Likely to Require Microsimulation
- Long Shot That HCM Analysis Would Be Acceptable For Final Analysis
- HCM Analysis Can Be Used to Assist in Initial Design Process
Model Selection : Level 3

• Level 3 Characteristics:
  • AADT > 75,000
  • Influence Area > 6 Miles
  • New or Modified Service Interchange or Freeway Commons Area

• Will Require Microsimulation
• HCM Analysis Not Acceptable For Final Analysis
• HCM Analysis Can Be Used to Assist in Initial Design Process
Identify Model Limits

• Model Limits Include:
  • Influence Area
  • Boundary Conditions
  • Time Periods
  • Time Slices
Influence Area

- The Section of Freeway That Could be Affected by the Proposed Design
- This Includes at Least One Interchange on Either Side of the Project
Boundary Conditions

• Are the Limits to the Freeway Modeling
• Not Always the Same as the Influence Area Boundaries
• Must Extend Far Enough to Replicate the Traffic Conditions Within the Influence Area
• Based on Existing Queues, Weaving Zones, Downstream Congestion, etc
Level 1 Boundary Conditions

Subject Interchange (construction limits)

Boundary Conditions (Approx 10 miles)
Level 2 and 3 Boundary Conditions
Arterial Boundary Conditions

Minimum Arterial Boundary

Project Interchange

Influence Area
Time Periods

• The Modeling Time Period Has Been Set to a 3 Hour Minimum
• Generally, the Peak Periods Are From 6:00 to 9:00 AM and 3:30 to 6:30 PM
• Can Be Shifted Based on the Collected Traffic Data
Time Slices

• For Instrumented Systems:
  • 15 Minute Time Slices Are Required
• For Uninstrumented Systems:
  • Time Slices Are Determined From Traffic Data
  • Either 15 Minutes or 60 Minutes in Length
Data Collection Requirements

• The Boundary Conditions Determine What Data is Required
• Includes:
  • Geometric Data
  • Field Observations
  • Traffic Control Data
  • Traffic Volumes and Turn Counts
  • Speed Data
Data Collection Contacts

- For Access to the Data Extraction Terminal, Contact Kevin Sommers at 651-634-2413
- For Any Other Information, Contact the Area Engineer
Level of Effort

- A Modeling Project Can Take:
  - Level 1: 2 to 3 Months
  - Level 2: 3 to 6 Months
  - Level 3: 6 to 18 Months
- Expect Calibration to Consume at Least a Third of the Modeling Time
- Staff Experience Level Can Increase or Decrease This Time