

Chapter 4

Project Scoping

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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 miles < Influence Area < 6 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

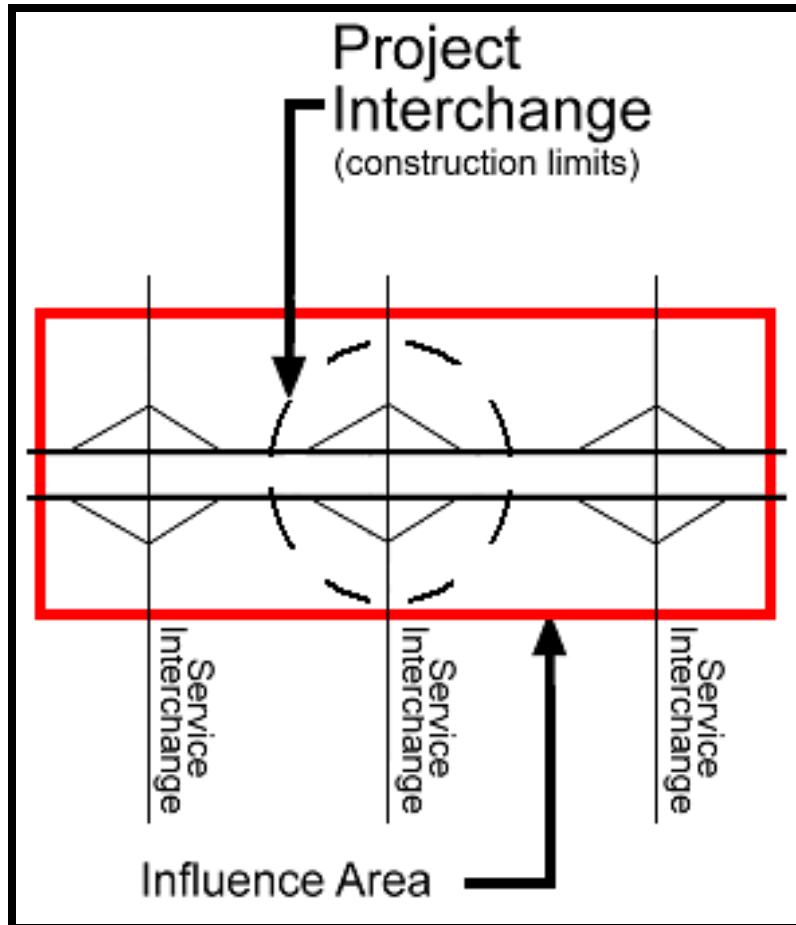
Model Selection : Level 3

- 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

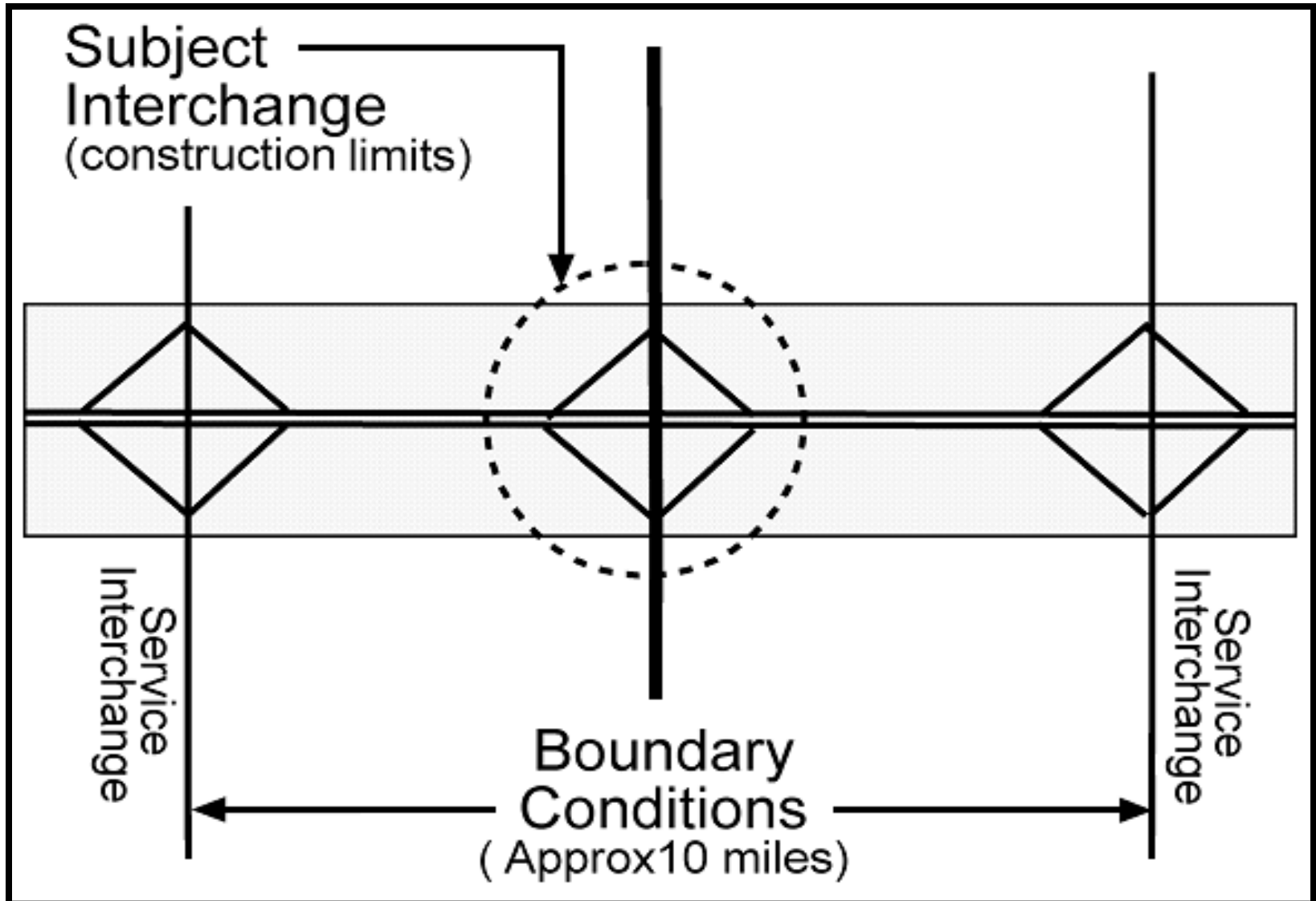


- The Section of Freeway That Could be Affected by the Proposed Design
- This Includes at Least One Interchange on Either Side of the Project

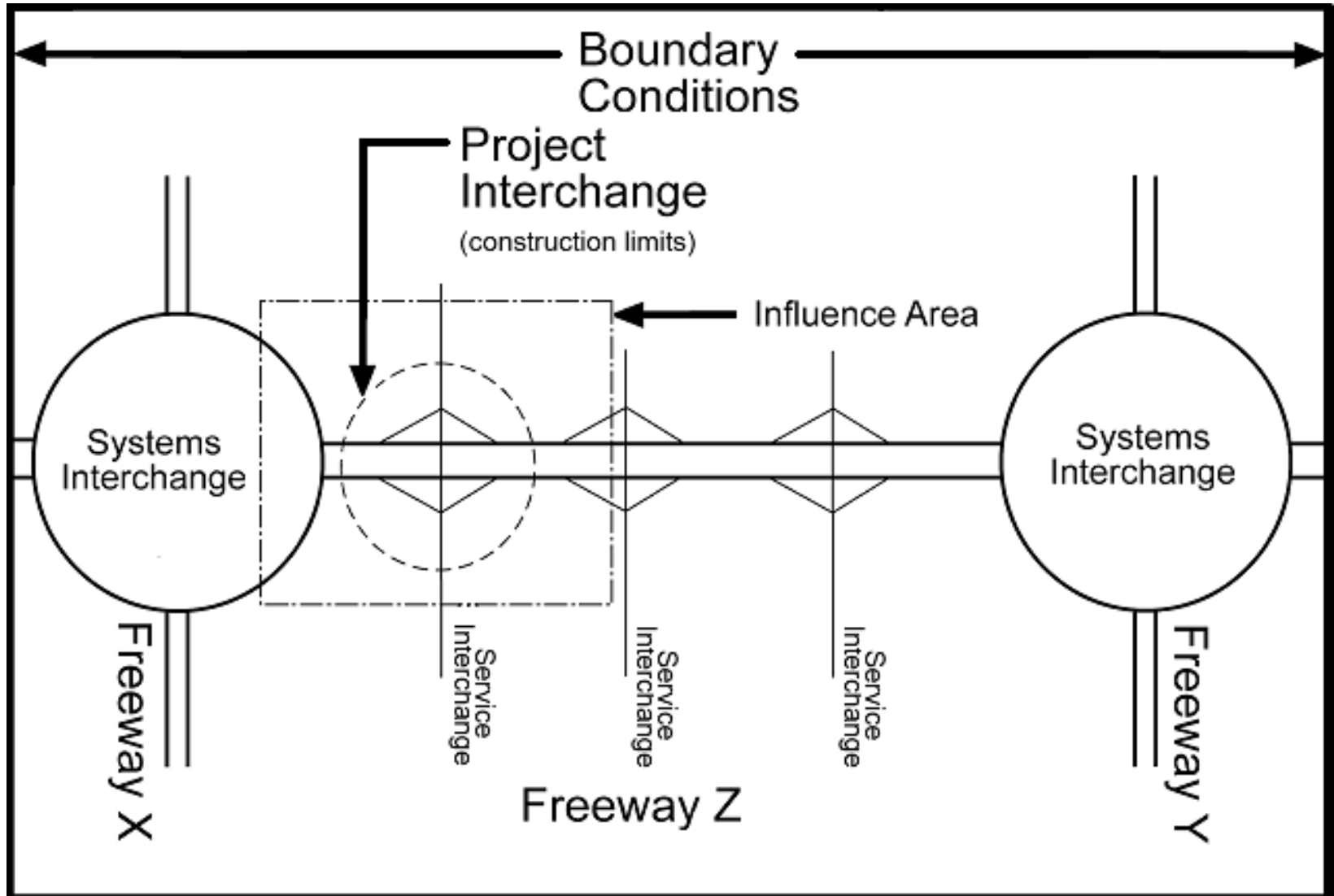
Boundary Conditions

- 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

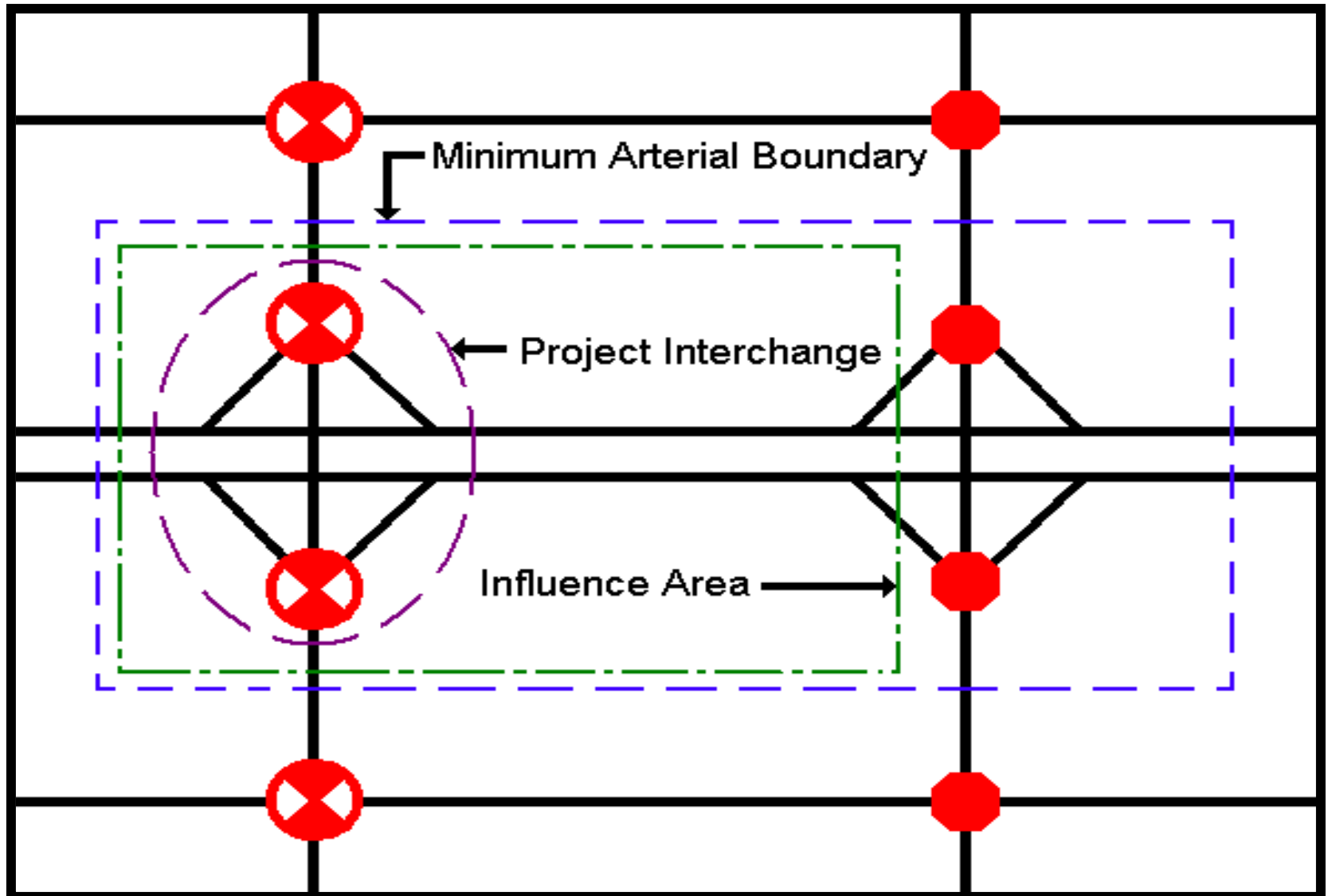
Level 1 Boundary Conditions



Level 2 and 3 Boundary Conditions



Arterial Boundary Conditions



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

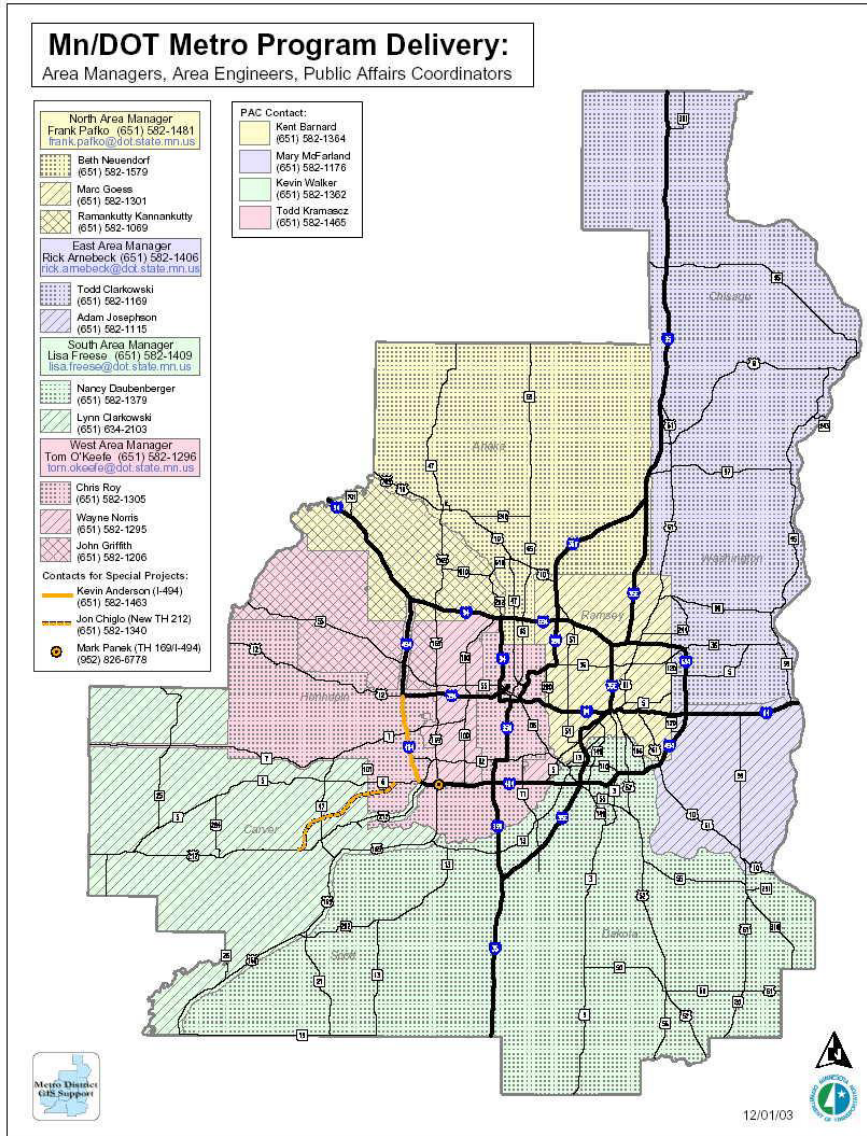
Time Slices

- 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