

Microsimulation Modeling Policy

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LA DOTD
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What?

- Microscopic simulation models simulate the movement of individual vehicles on roads
- It is used to assess the traffic performance of a highway network
- Microsimulation is the dynamic and stochastic modeling of vehicle movements
- Microsimulation is a tool for traffic studies, design, operations, and public meetings

Why?

- To estimate the effect of different design or operations alternatives
- To show the expected improvement from existing to proposed conditions
- To provide a visual representation of a transportation project
- To help in the decision making process

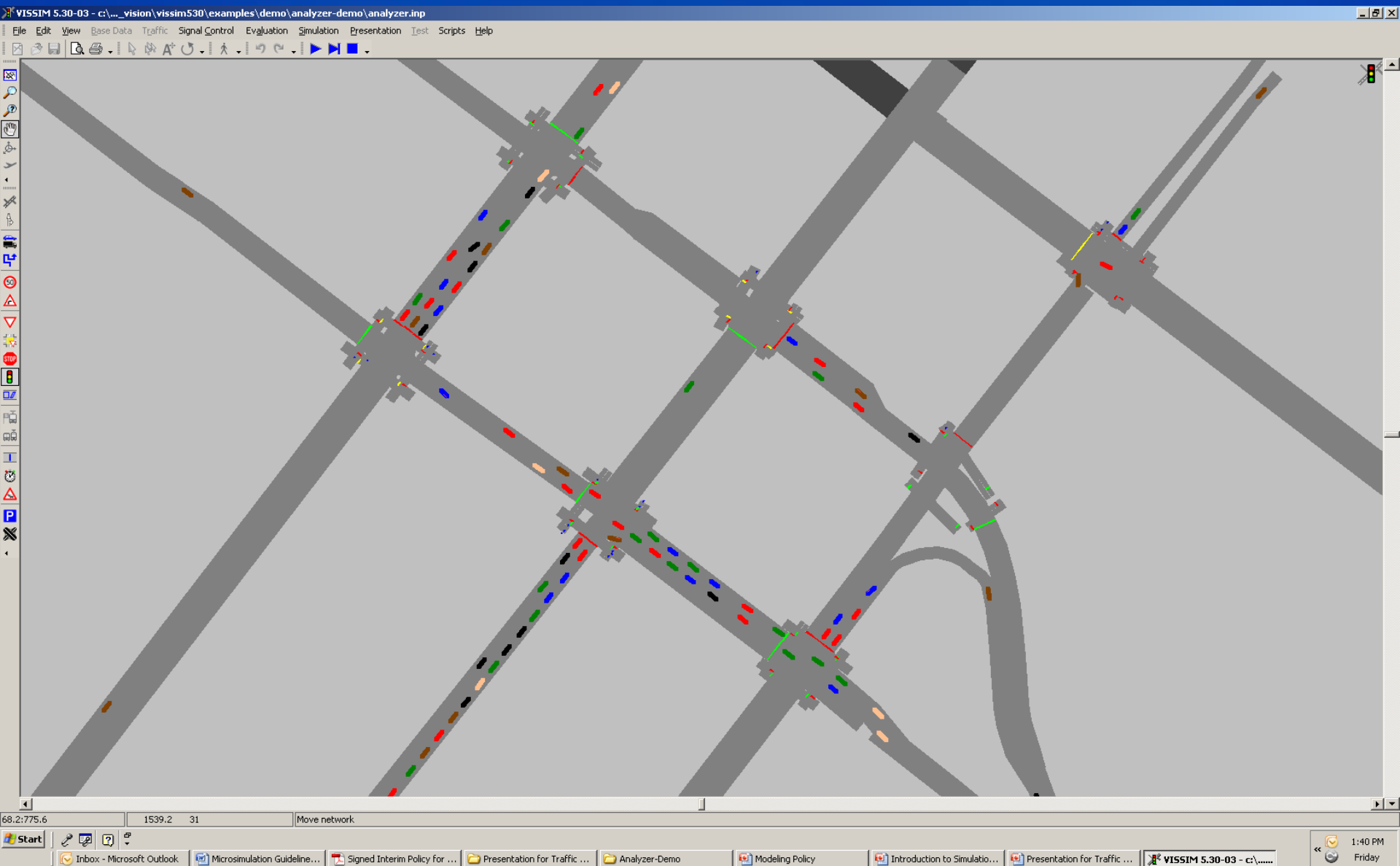
When?

- Use when approved by DOTD Traffic Modeling Engineer
- When defined in the project scope of work
- Use where traffic congestion problems exist
- When other tools are limited
- Use when time and funding are available

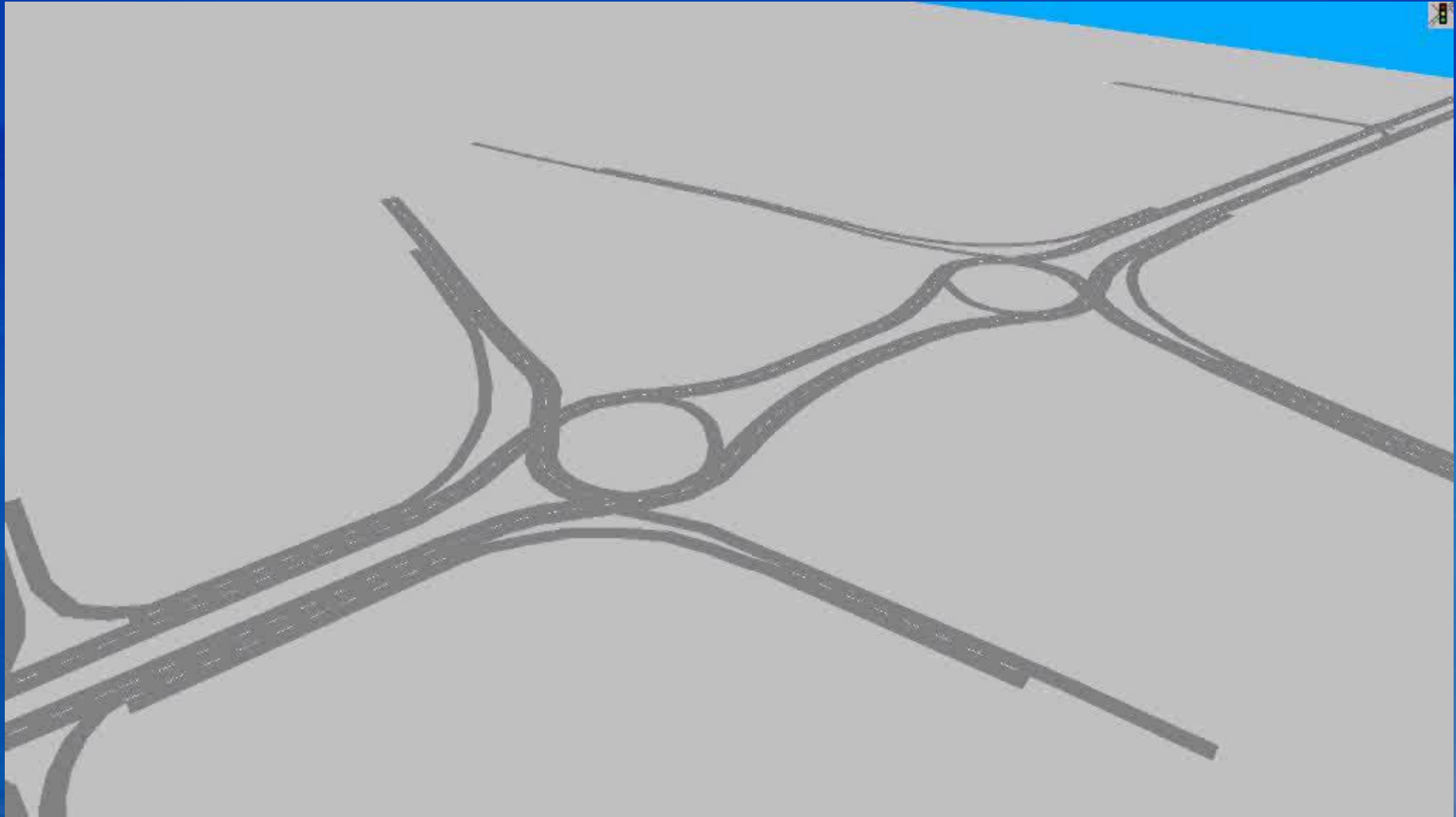
Policy

- Microsimulation Policy and Guidelines documents
- Two softwares: VISSIM and CORSIM
- Policy in place to get a good work product, and to use modeling as an appropriate analysis tool
- Defines phases and deliverables
- Based on *Traffic Analysis Toolbox Volume III*

VISSIM Picture



VISSIM Model



CORSIM Picture

TRAFVU - intch1.trf

File View Display Options Animation Window Help

intch1.trf # 1

LEGEND

VEHICLE COLORS

- Left
- Right
- Lt Diag
- Rt Diag
- Through

INCIDENTS

- Blocked
- Restricted

Anim. time = 6.58

Frame Delay (Seconds)

0.000 0.001 2.000

Frames/Time Step

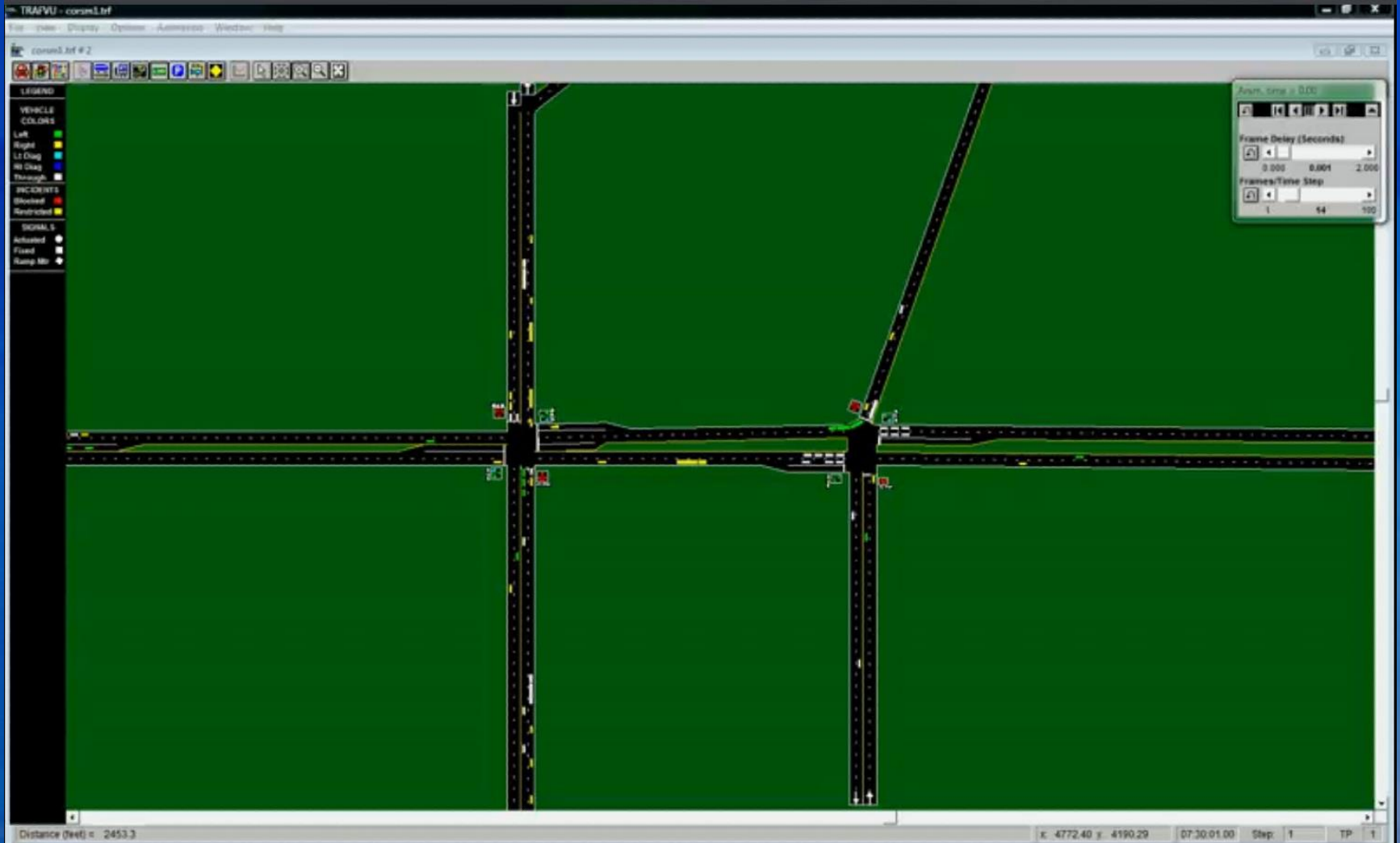
1 1 100

Distance (feet) = 0.0

x: 1497.53 y: 3073.23 07:07:00.00 Step: 420 TP: 1

Start | Inbox - Microsoft Outlook | Presentation for Traffic... | Presentation for Traffic... | http://www.ptvamerica... | Signed Interim Policy Fo... | I-12 Improvements v2... | Presentation for Traffic... | TSIS 6.2 | TRAFVU - intch1.trf | 10:45 AM

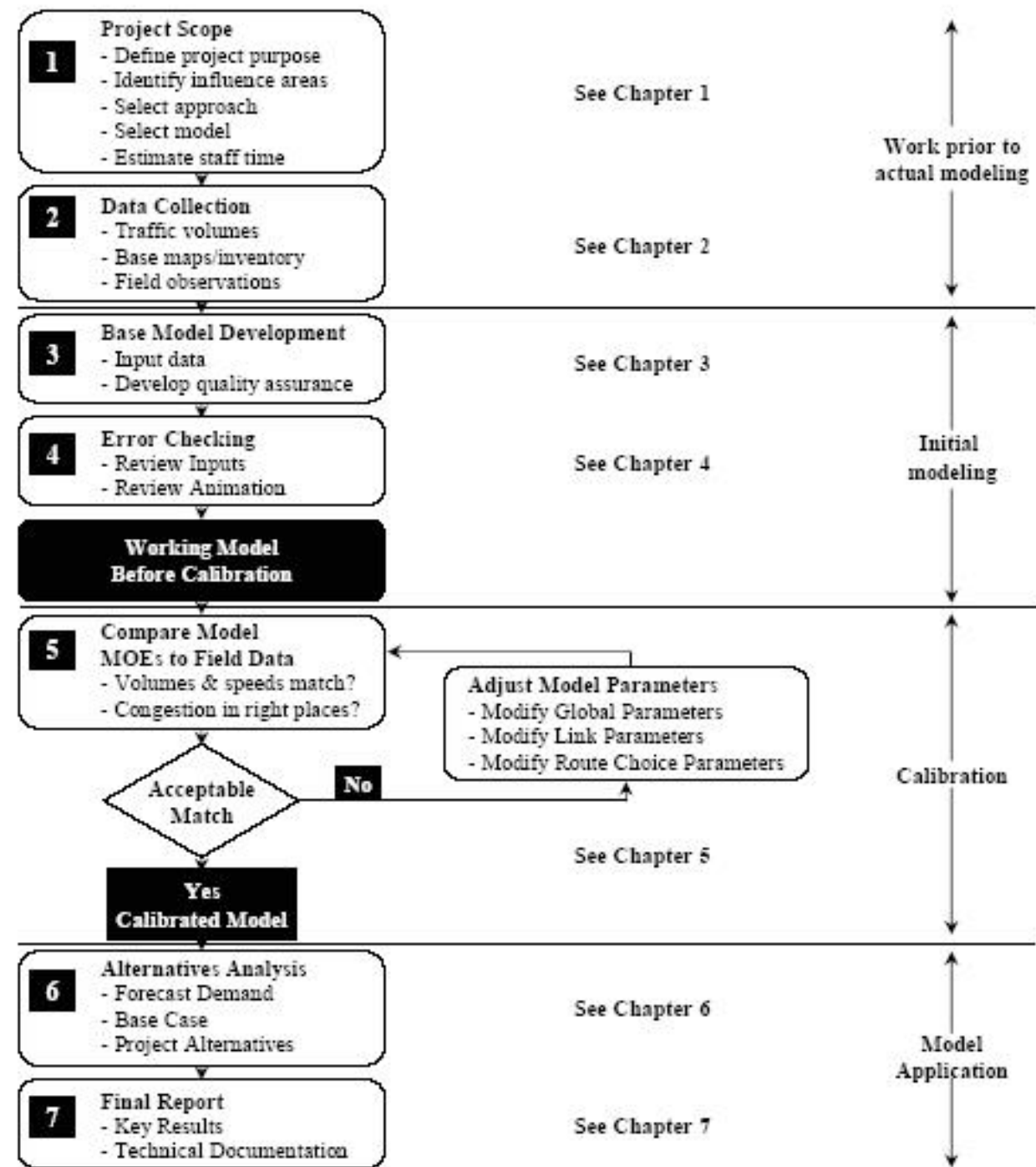
CORSIM Model



Process

- 1) Project scope
- 2) Data collection
- 3) Base model development
- 4) Error checking
- 5) Calibration
- 6) Alternatives analysis
- 7) Final report

Flowchart



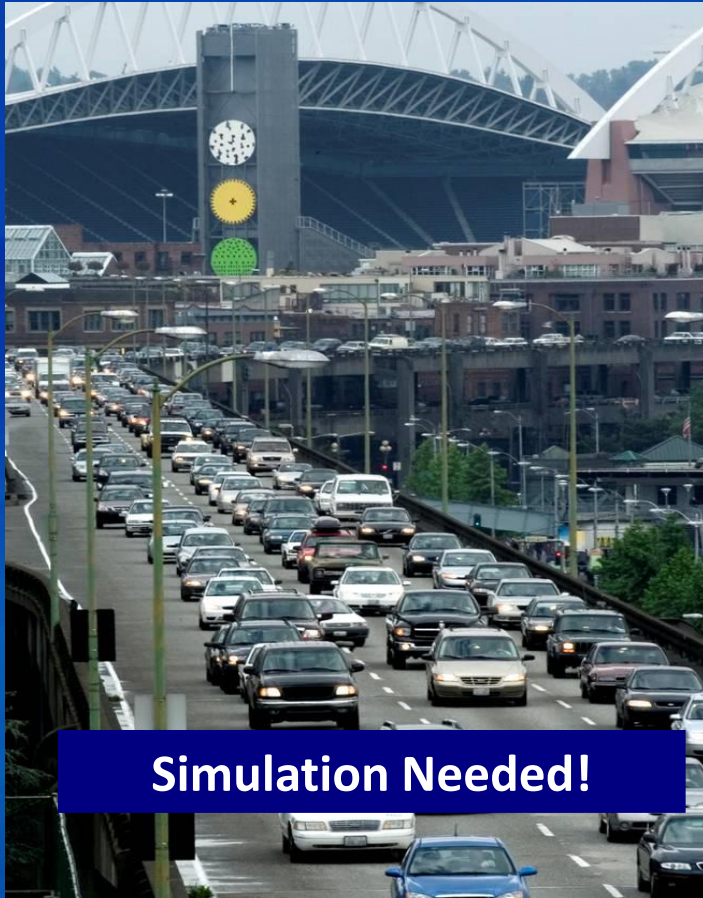
Where to Model

- Urbanized freeway segments
- Congested arterial highways
- Corridors with closely spaced signals
- Roundabouts with nearby signals
- Complex geometric configurations

Where to *not* Model

- Isolated stop or signal intersections
- Rural highway segments
- Intersection improvements
- Low volume local or collector roads

Selecting Proper Tool



Source: UW TRAC and CH2M HILL, Introduction in Traffic Simulation

MOE

- Measures of effectiveness such as travel time, average speed, delay, queue lengths, and VMT

Sample Report Results Table			
MOE	No Build	Alt 1	Alt 2
Travel Time (min)	9	5	6
Avg Speed (mph)	20	36	30

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