CONNECTICUT’S NETWORK SCREENING TOOL DEVELOPMENT
SAFETY MANAGEMENT SYSTEM

- Network Screening
- Diagnosis
- Countermeasure Selection
- Economic Appraisal
- Project Prioritization
- Safety Effectiveness Evaluation
BASIC NETWORK SCREENING DATA NEEDS

- **Facility Types**
  - Roadway segments
  - Intersection inventory

- **Data Needs**
  - Crashes
  - Traffic volumes
  - Geometric features
  - Safety performance functions (SPFs)
  - **MIRE Compliance**
INTERSECTION INVENTORY DATA COLLECTION
NETWORK SCREENING METHODS

- Basic: Simple Performance Measure + Simple Screening Method
  - Crash frequency
  - Equivalent property damage only (EPDO)
  - Crash rate

The EPDO method is conducted as follows:

- Compile crash severity cost data – The state DOT may have societal crash costs specific to the state. If the state does not the 2010 Highway Safety Manual provides the following crash costs by crash severity:
  - Severity
    - Fatal
    - Injury A, B, and C
  - Property Damage Only (PDO) (2010 AASHTO Highway Safety Manual, Chapter 7)

![Comprehensive Crash Cost Table]

<table>
<thead>
<tr>
<th>Intersection Crash Severity (Fatal)</th>
<th>Crash Severity (Injury A-C)</th>
<th>Crash Severity (PDO)</th>
<th>Total EPDO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>12</td>
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<td>5</td>
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</tbody>
</table>

Fatal Crash Weighting Factor = \( \frac{\text{Fatality Crash Cost}}{\text{PDO Crash Cost}} \)
NETWORK SCREENING METHODS

- **Basic**: Simple Performance Measure + Simple Screening Method
  - Crash frequency
  - Equivalent property damage only (EPDO)
  - Crash rate
  - Simple ranking

- **Advanced (software solutions)**: Sophisticated Measure + Screening Method
  - Expected excess crash frequency (EB using SPF)
  - Level of service of safety
  - Peak searching
  - Sliding window
CURRENT NETWORK SCREENING CAPABILITIES

- Segment the Road Network
  - By Facility, Design, Geometry, Location, etc.

- State Routes- Suggested List of Surveillance Study Sites (SLOSSS)
  - Total, Fatal and Injury, and Wet Weather
  - Calculate the Crash Rate (Crashes/VMT) For Each Segment (3 to 5 years)
  - Ra/Rc > 1 & total crashes >= Threshold
    - Ra is the Actual Crash Rate
    - Rc is the Critical Crash Rate
    - Threshold is 15 crashes

- Town Routes
  - Segment level - Crash Analytical Methods
  - TAZ level - Cluster Based SPFs
FUTURE CAPABILITIES FOR SAFETY ANALYSIS

- Modern Custom Web Applications to do All Six-Step Safety Management Process in HSM
- Systemic Safety Management Process
- Advanced Techniques
Network Screening

**Establish Focus**
- Start Year: 2012
- End Year: 2016
- Facilities:
  - All Sites
  - State segment
    - Rural 2-Lane Undivided
    - Urban Multilane Divided
  - Intersection
  - Rural 3-Leg Minor-Road Stop

**Identify Network**

**Select Performance Measures**

**Select Screening Method**

Create a new scenario
THANK YOU!