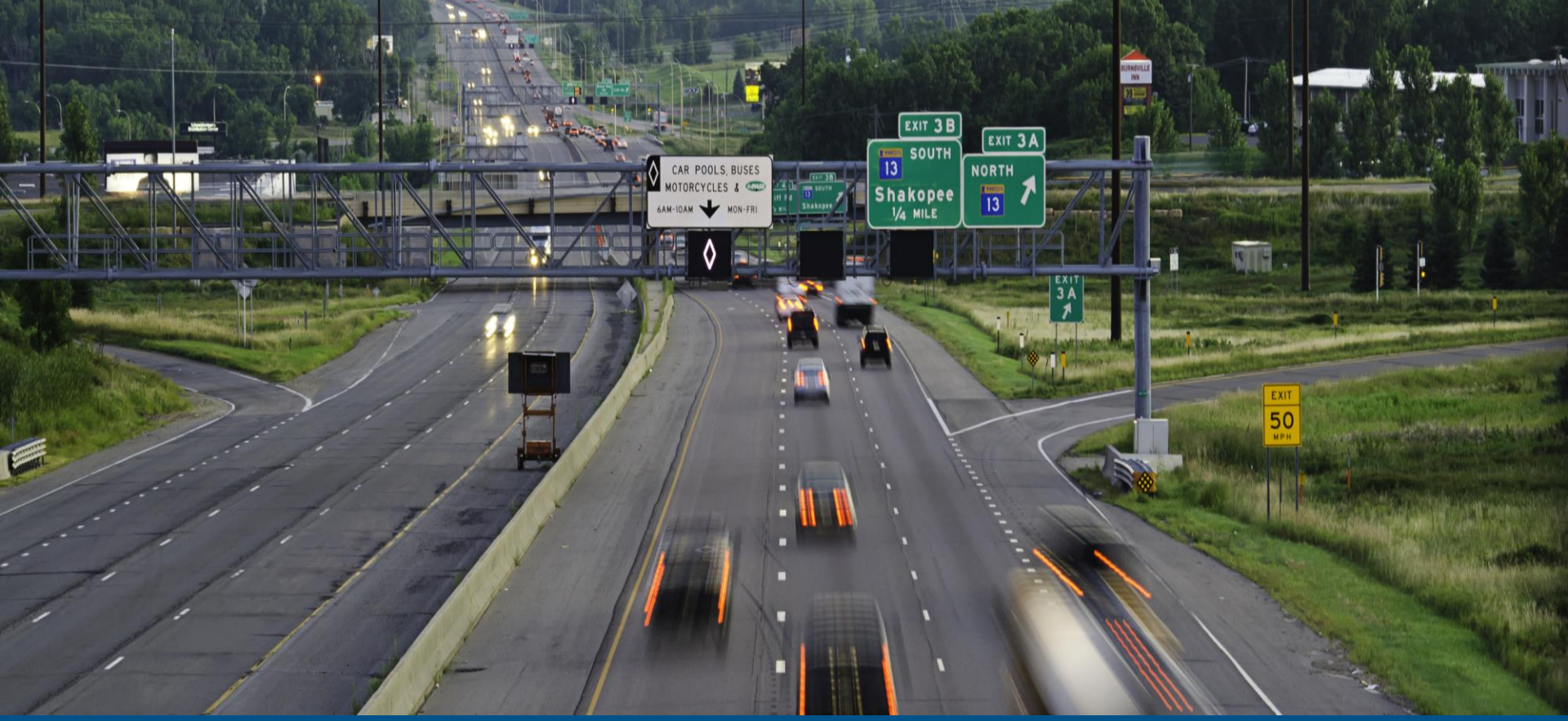


Duluth-Superior Metropolitan Interstate Commission

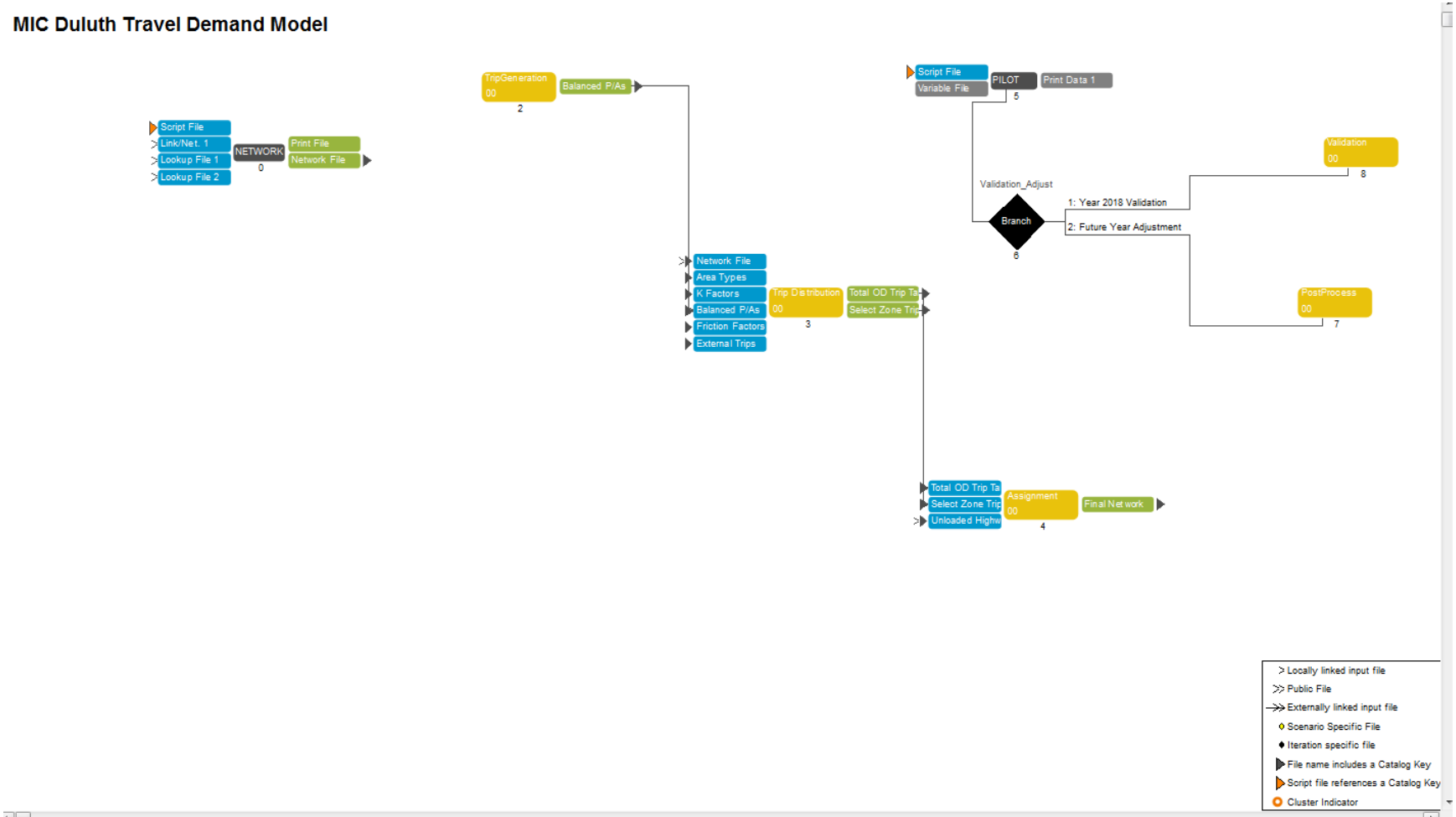
MIC Travel Demand Modeling

January 15, 2019

In a Nutshell…

- What it looks like
- How does it work
- What does and doesn’t do
- How/whether it can be improved

The Model is Not Much to Look at....

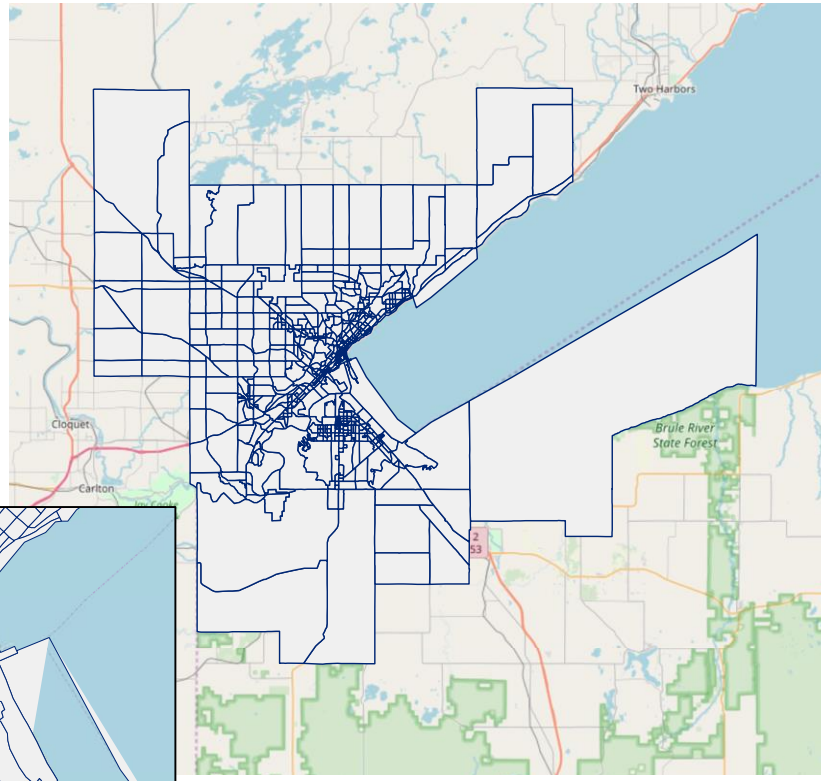


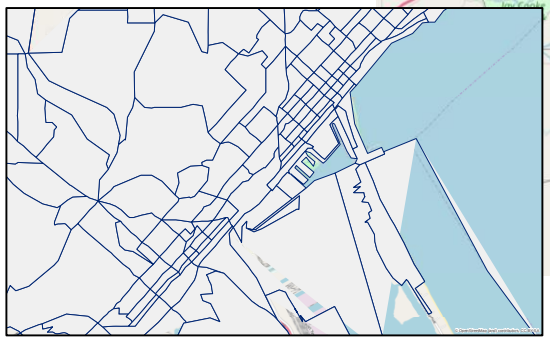
Travel Demand Models

Inputs	• Roadway speed, capacity, function,etc.) • Demographic: households, autos, employment types
Trip Generation	• Different types of trips • Also external trips (to/from outside region
Trip Distribution	• Trips go from one place to another • Factors include time, amount of activity
Mode Choice	• MIC Model: No transit • Auto occupancy a factor
Traffic Assignment	• What road to take for trip? • Somewhat reflects congestion

Inputs: Transportation Analysis Zones (TAZ)

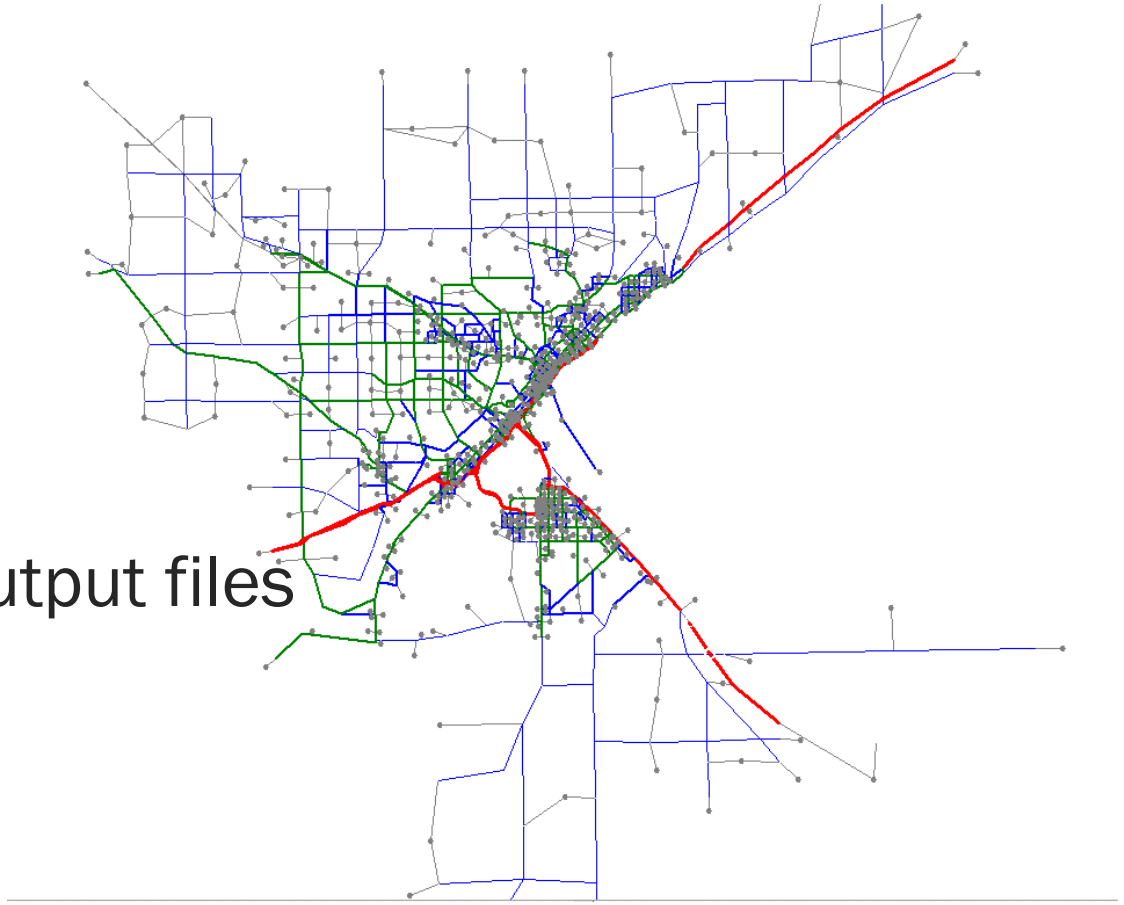
- Land Use/ Demographic Data
- Census Data
- Existing and Forecast
- “Building Blocks”





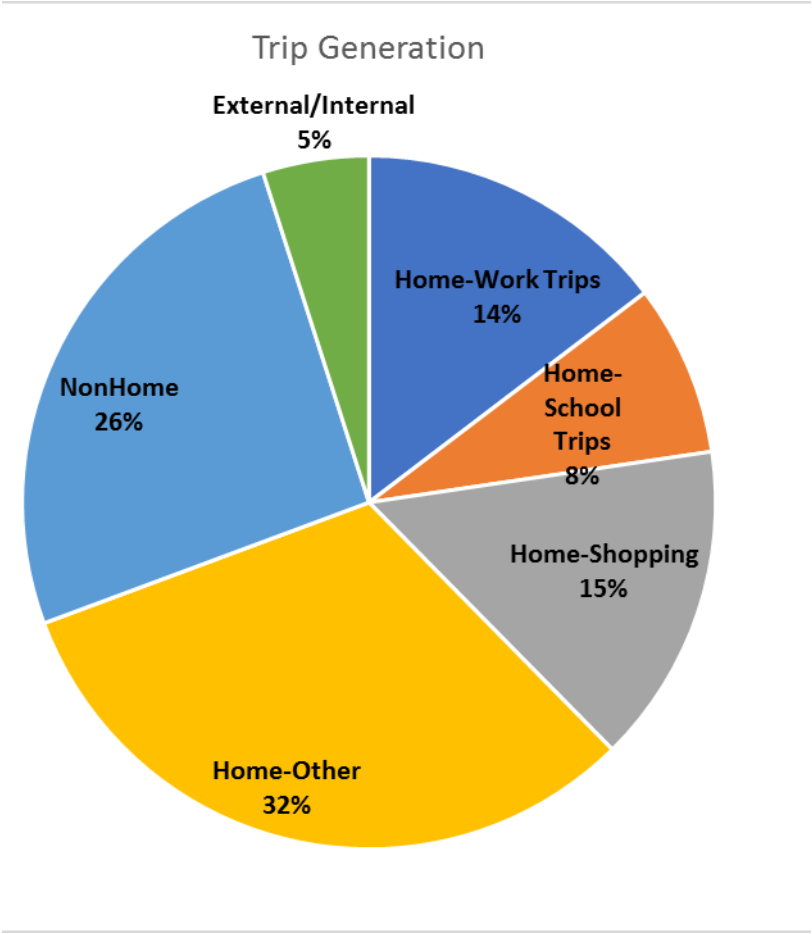
Inputs: Networks

- Functional types
- Speeds
- Capacities
- Area types, etc.
- Volumes, etc. in output files



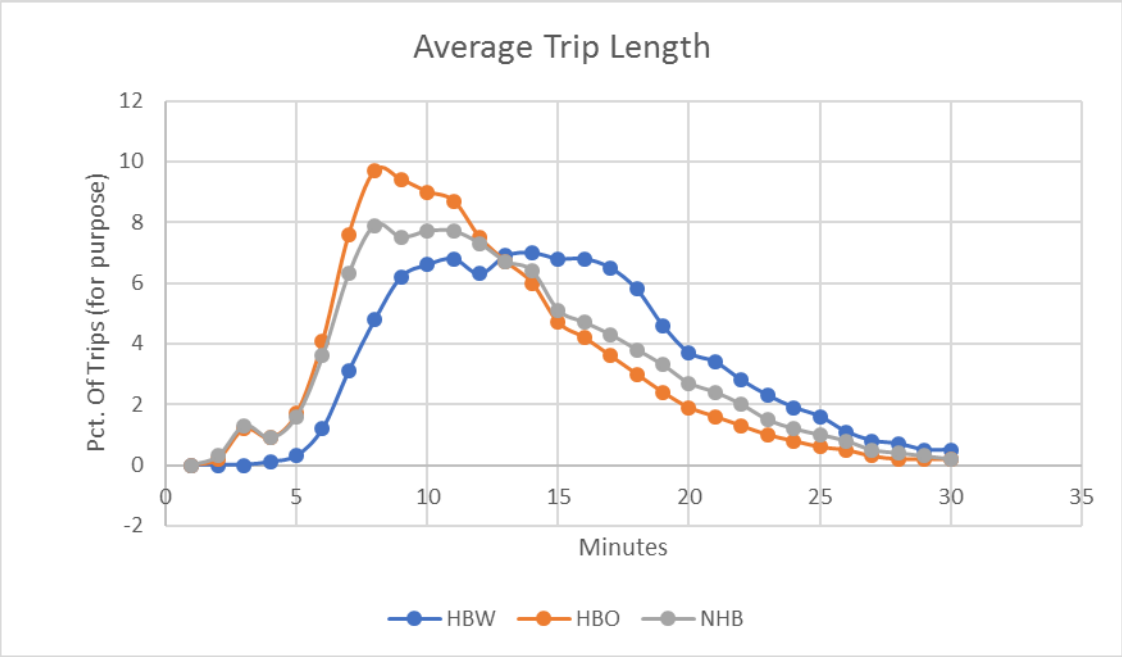
Trip Generation

- People do various activities



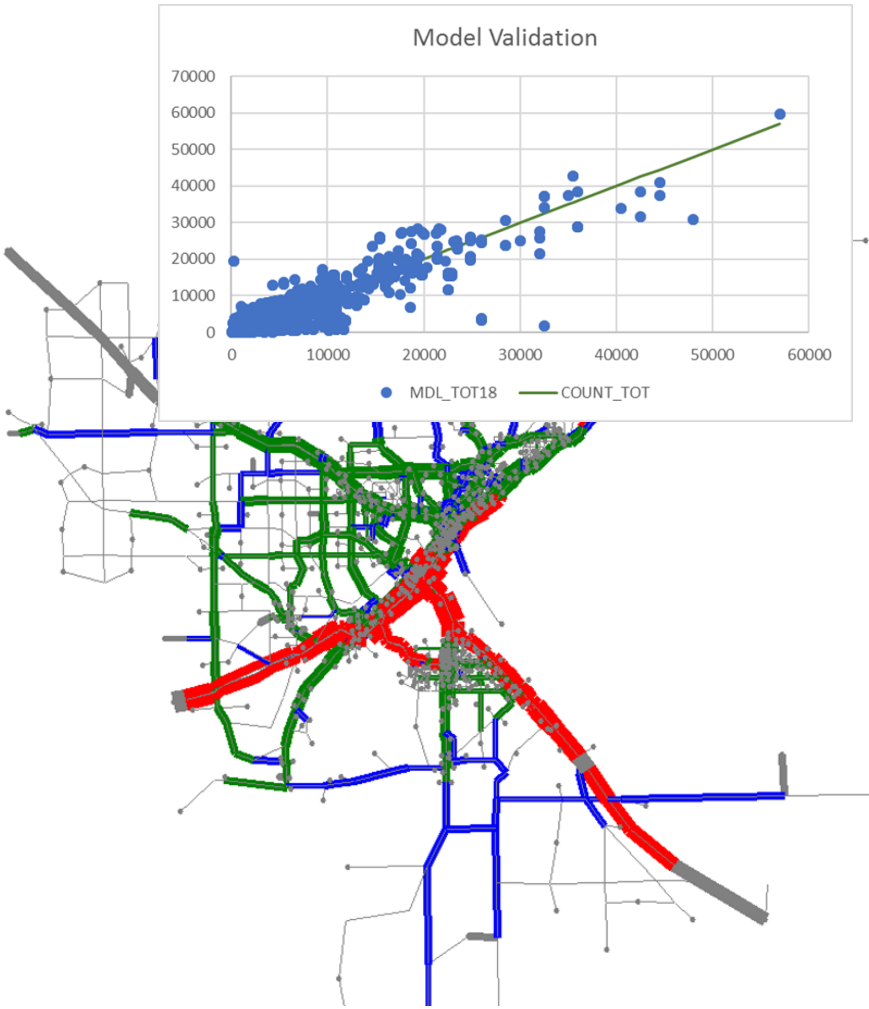
Trip Distribution

- People travel to do those activities
- "Gravity model"- activities' attractiveness bas on proximity, size
- Does not include portion of trips outside of region



Roadway Assignment

- Volume on roadways
- Volume/Capacity ratios
- “Select link/zone” who is using roadway
- Growth rates



Types of Project Uses

- Long-range Transportation Plans
- Land use plans/traffic impacts
- Site development
- Construction traffic management
- Corridor studies
- Subarea studies

Other Things

- Peak Period/Hour Model
- Transit Mode Choice Model
- Visitor Traffic Model
- Truck/Freight Model

What's New in the Industry

- Streetlight Analytics Data
- "Smart" Travel Data Collection
- Dynamic Traffic Assignment
- Parking Destination