



June 19 - 20, 2025
Hollywood, FL






**TRANSPORTATION
SYMPOSIUM**

The Florida Travel Demand Modeling Manual

For Engineers who want to know enough to be dangerous

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FDOT Systems Forecasting & Trends Office

Transportation Symposium Website



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What is Modeling? (and Why You Should Care)

- Travel Demand Modeling:
 - What is it?
 - What does it do?
 - Why does it show up in your project?
- Perspective
 - Model development and applications
 - Through the lens of engineering and design
- Why it matters
 - Project impacts
 - Understanding and responsibility

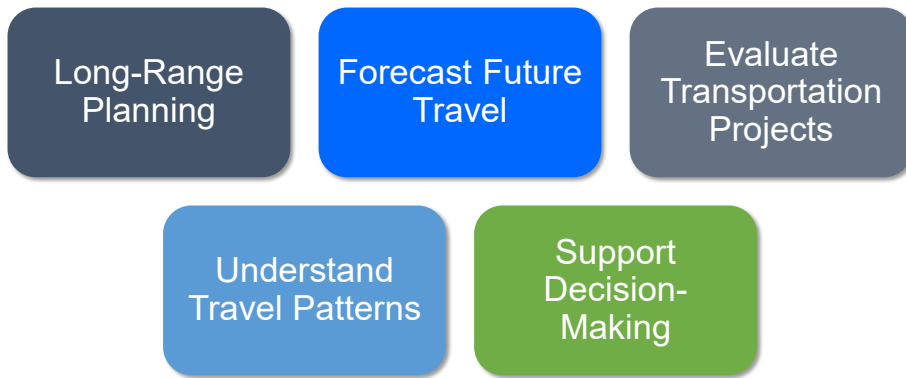


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Why Use a Travel Demand Model?



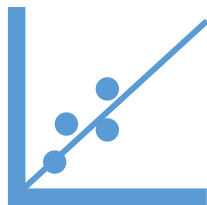
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Straight-Line Forecasts vs. TDMs

Straight-line forecasts assume a constant rate of growth or decline based on historical trends



TDMs consider a variety of factors beyond just historical trends



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What Does a Model Give You?



Relationship between land use and traffic volumes



Travel behavior



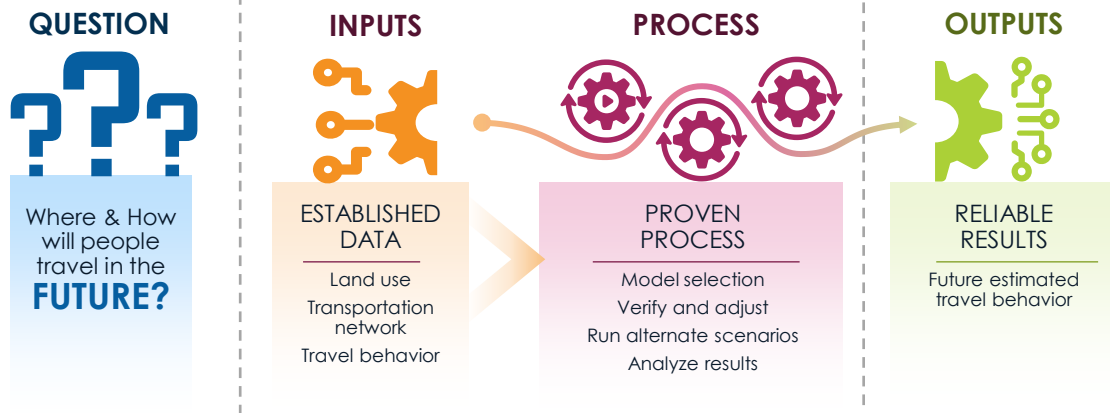
Transportation network impacts

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How Does a Model Work?



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Four-Step Approach



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Inputs

ESTABLISHED DATA



Land Use

Population
Household composition
Employment
Autos per household



Transportation Network

Number of Lanes
Facility Type
Neighborhood Context
Speeds and Capacities
Transit Lines
Base-year traffic counts



Travel Behavior

Persons per Auto
Number of Trips
Trip Lengths
Congestion delay



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Process

PROVEN PROCESS



Model Selection

Project intent
Available data
Resources required



Verify and Adjust

Verify Inputs
Check reasonableness
Adjust parameters and re-check



Alternate Scenarios

Define
Code
Run



Analyze Results

Review model results
Report findings



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Outputs



RELIABLE RESULTS



Loaded Network

Amount of traffic
Type of Traffic
Determine any
congestion issues
Congested travel times
by time
Transit flow



Trip Table

Overall trip making activity
Travelers' origin and
destination
Long-term patterns
of trip making



Mode Split

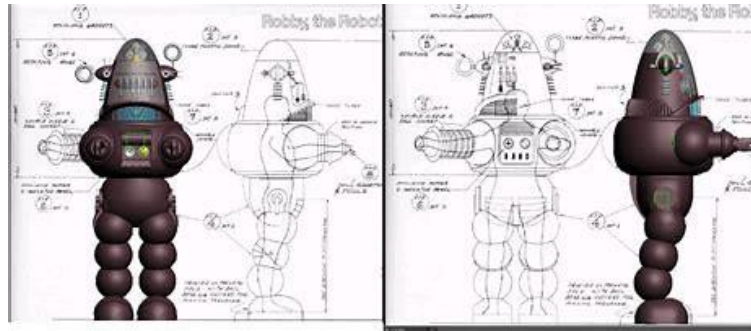
Number of people moving
around a region
How people travel
together by vehicle
How people travel by transit
Mix of transportation modal
infrastructure and capacity

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Modeling for Engineers



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Modeling in Engineering



[SR 9 / I-95 PD&E Study](#)

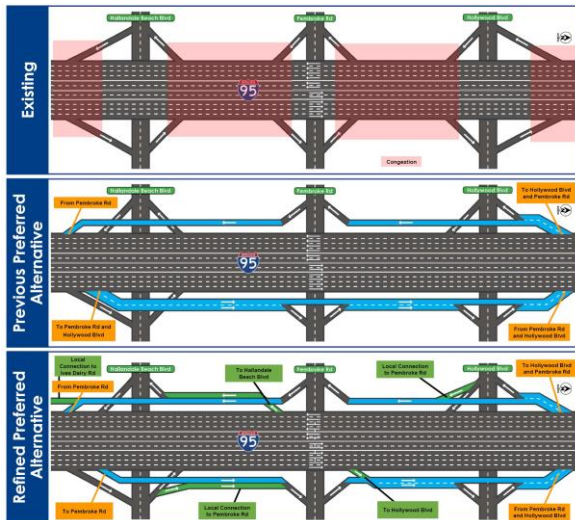
Project Development & Environmental (PD&E) studies bridge the planning and design phases, using models to estimate the future impacts of a project.

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Modeling in Engineering



Various design configurations are placed into the model network to test the effectiveness of each design schematic.

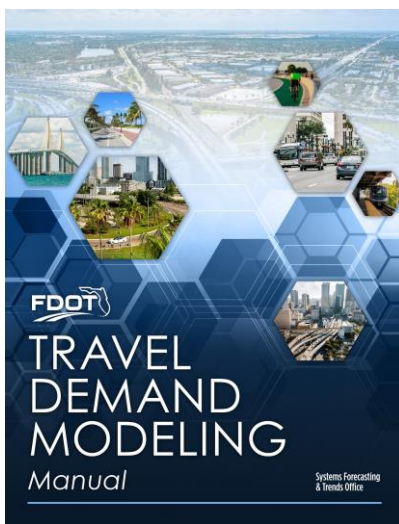
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Travel Demand Modeling Manual



The TDMM provides procedures and guidance for the development and use of travel demand models

Written for non-modelers working with models

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TDMM Structure



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Developing a Travel Demand Model



Aims to help non-modelers understand the development process from a reviewer's perspective

Focuses on how the model development process builds trust in the model results

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Developing a Travel Demand Model



Chapter 1	Overview of Model Development Process
Chapter 2	Preparing for Model Development
Chapter 3	Preparing Model Data
Chapter 4	Developing and Refining the Base Year Model
Chapter 5	Developing the Future Year
Chapter 6	Resources

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Using a Travel Demand Model



- Guides readers through realistic expectations of the model outputs
- Explains model application through the lens of different project roles
 - Stakeholders
 - Project Coordinator
 - Modeler
 - Model Owner

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Using a Travel Demand Model



Chapter 1	Overview
Chapter 2	Defining the Ask
Chapter 3	Accuracy and Precision
Chapter 4	Modeling Scenarios
Chapter 5	Scenario Outputs

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Defining the Ask

Guides readers through the process of “defining the ask” including:

- The need for travel modeling and forecasting
- Understanding the consumer
- Selecting the appropriate tool



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Accuracy and Precision

Accuracy and precision are used to determine whether the model is “correct”

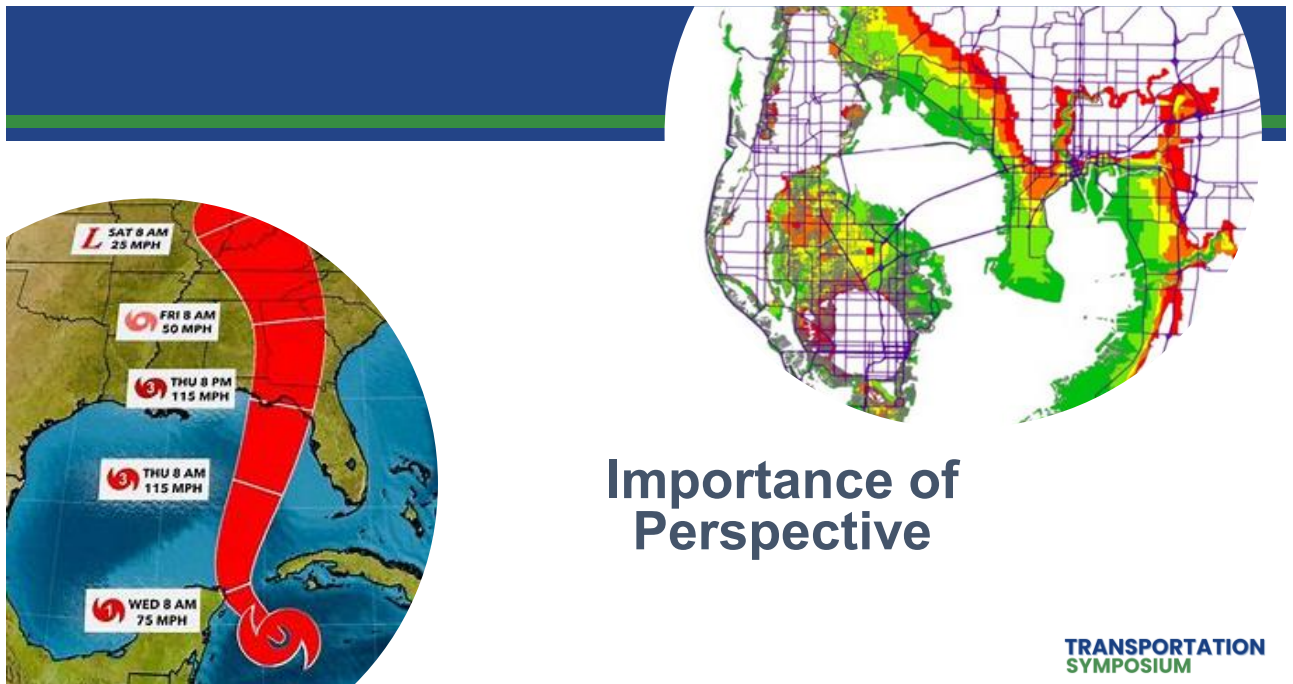
Helps readers understand how to assess accuracy and precision to facilitate more confident decision-making



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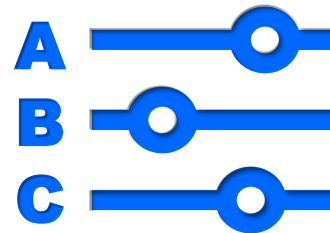
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Modeling Scenarios

Travel demand models are developed and used to test alternative scenarios

Leads readers through the types of changes made for alternative scenarios and the types of scenarios users may encounter



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Scenario Outputs

Guides readers through the types of model outputs, analyses, and visualization techniques for effectively portraying the modeled data

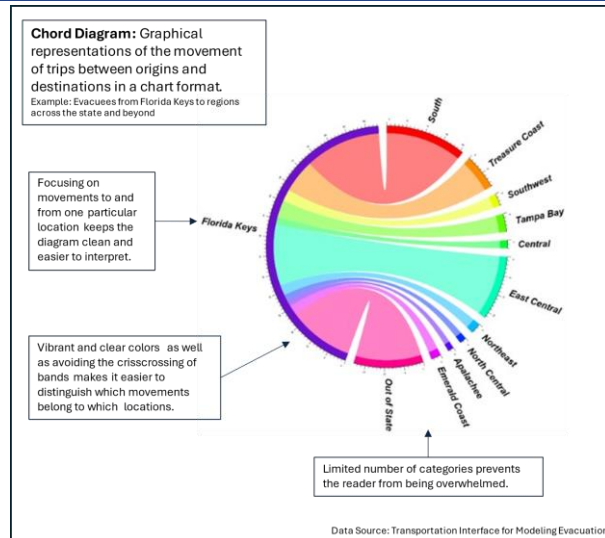


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Output Visualization Example

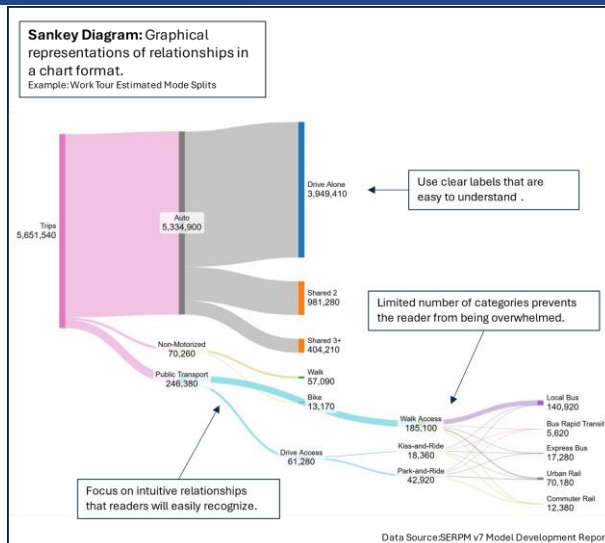


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Output Visualization Example

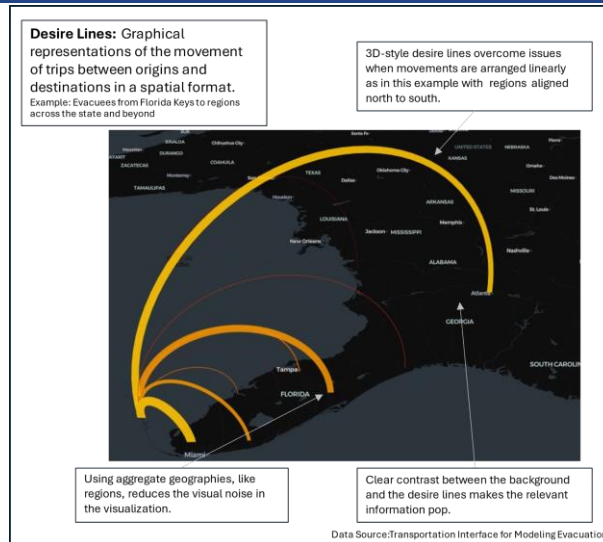


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Output Visualization Example



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How to Access the TDMM

FLORIDA TRANSPORTATION
FORECASTING **RESOURCE HUB**

models

guidance

resources

training

committees

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Q&A Discussion

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Thank you!

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