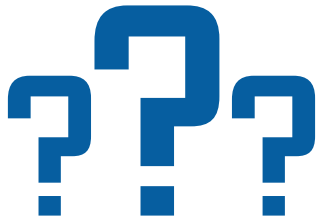
Forecasting Project Development

Systems Forecasting & Trends Office

FDOT

QUESTION



How will Traffic behave at a location in the **FUTURE?**

ANSWER

Two Main Approaches

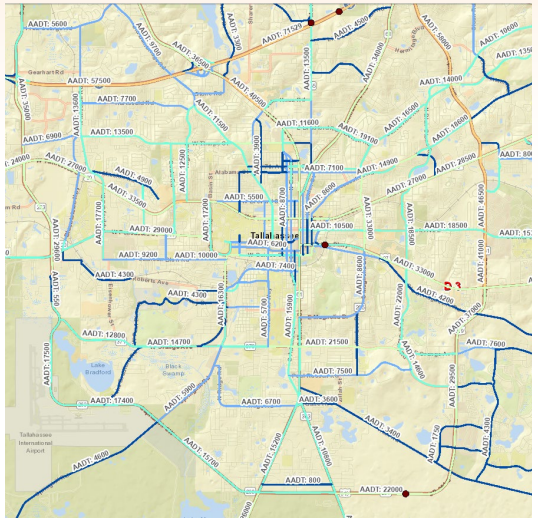
Straight Line Extrapolation and / or Regression Approach

Travel Demand Modeling Approach

How does Extrapolation Work?

ESTABLISHED DATA

Traffic Counts

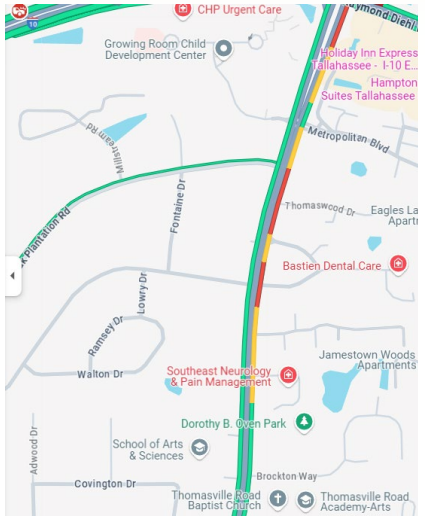


PROCESS

Extrapolation using spreadsheet / other tools (usually straight line assumed)

RESULTS

Forecasted Traffic Volumes at/near site

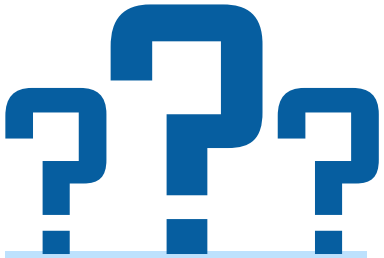


Why Use a Travel Demand Model?

- Long-Range Planning
- Forecast Future Travel
- Evaluate Transportation Projects
- Understand Travel Patterns
- Support Decision-Making

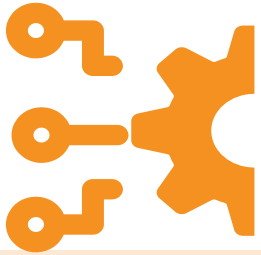
How Does a Model Work?

QUESTION



Where & How will people travel in the **FUTURE?**

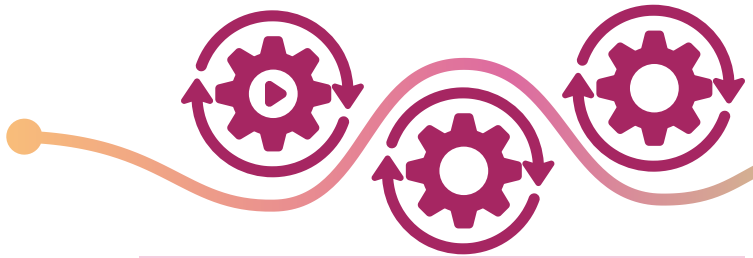
INPUTS



ESTABLISHED DATA

- Land use
- Transportation network
- Travel behavior

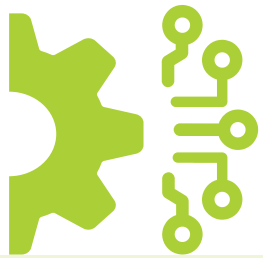
PROCESS



PROVEN PROCESS

- Model selection
- Verify and adjust
- Run alternate scenarios
- Analyze results

OUTPUTS



RELIABLE RESULTS

Future estimated travel behavior

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

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

Trend Analysis vs. Travel Demand Models

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

TDMs consider a variety of factors beyond just historical trends

What Does a Model Give You?

Relationship between land use and traffic volumes

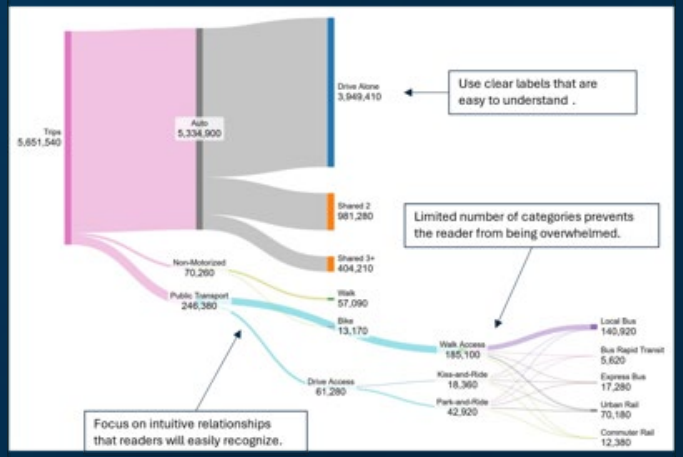
Travel behavior

Transportation network impacts

Communicating Impacts

Sankey Diagram: Graphical representations of relationships in a chart format.

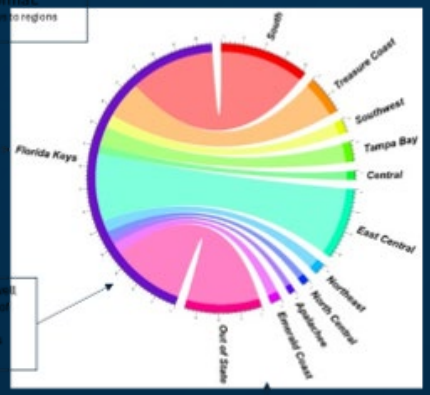
Example: Work Tour Estimated Mode Splits



Data Source: SERPM v7 Model Development Report

Chord Diagram: Graphical representations of the movement of trips between origins and destinations in a chart format.

Example: Evacuees from Florida Keys to regions across the state and beyond



Focusing on movements to and from one particular location keeps the diagram clean and easier to interpret.

Vibrant and clear colors as well as avoiding the crisscrossing of bands makes it easier to distinguish which movements belong to which locations.

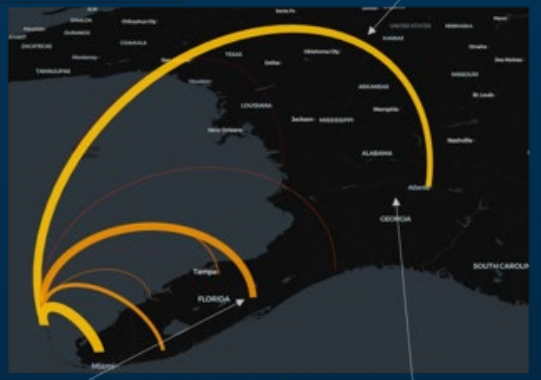
Limited number of categories prevents the reader from being overwhelmed.

Data Source: Transportation Interface for Modeling Evacuations

Desire Lines: Graphical representations of the movement of trips between origins and destinations in a spatial format.

Example: Evacuees from Florida Keys to regions across the state and beyond

3D-style desire lines overcome issues when movements are arranged linearly as in this example with regions aligned north to south.

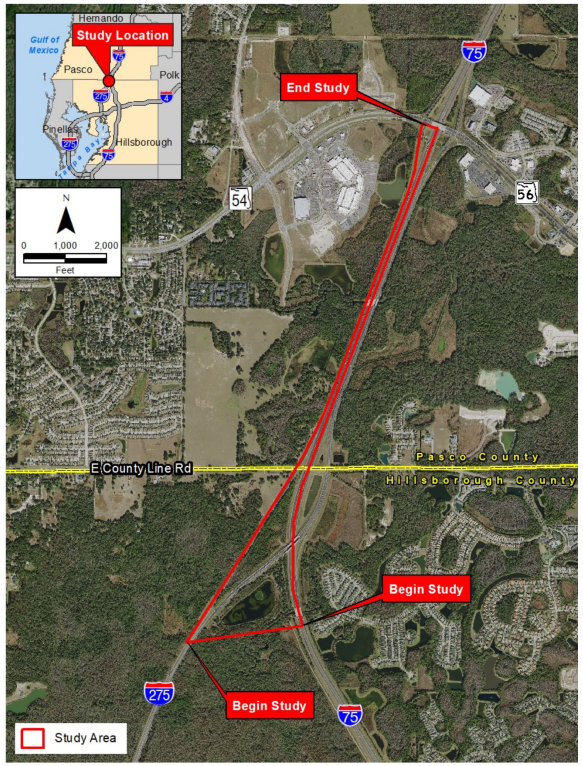


Using aggregate geographies, like regions, reduces the visual noise in the visualization.

Clear contrast between the background and the desire lines makes the relevant information pop.

Data Source: Transportation Interface for Modeling Evacuations

Why Should you Care?



Models allow

- Better understanding of design / planning options
- More informed decision-making

By

- Providing the key traffic forecast inputs

Using

- Rigorous data-driven analysis
- That allows more comprehensive evaluation factors than when using
  - Straight – line extrapolation
  - Regression like ITE Trip Rates etc.

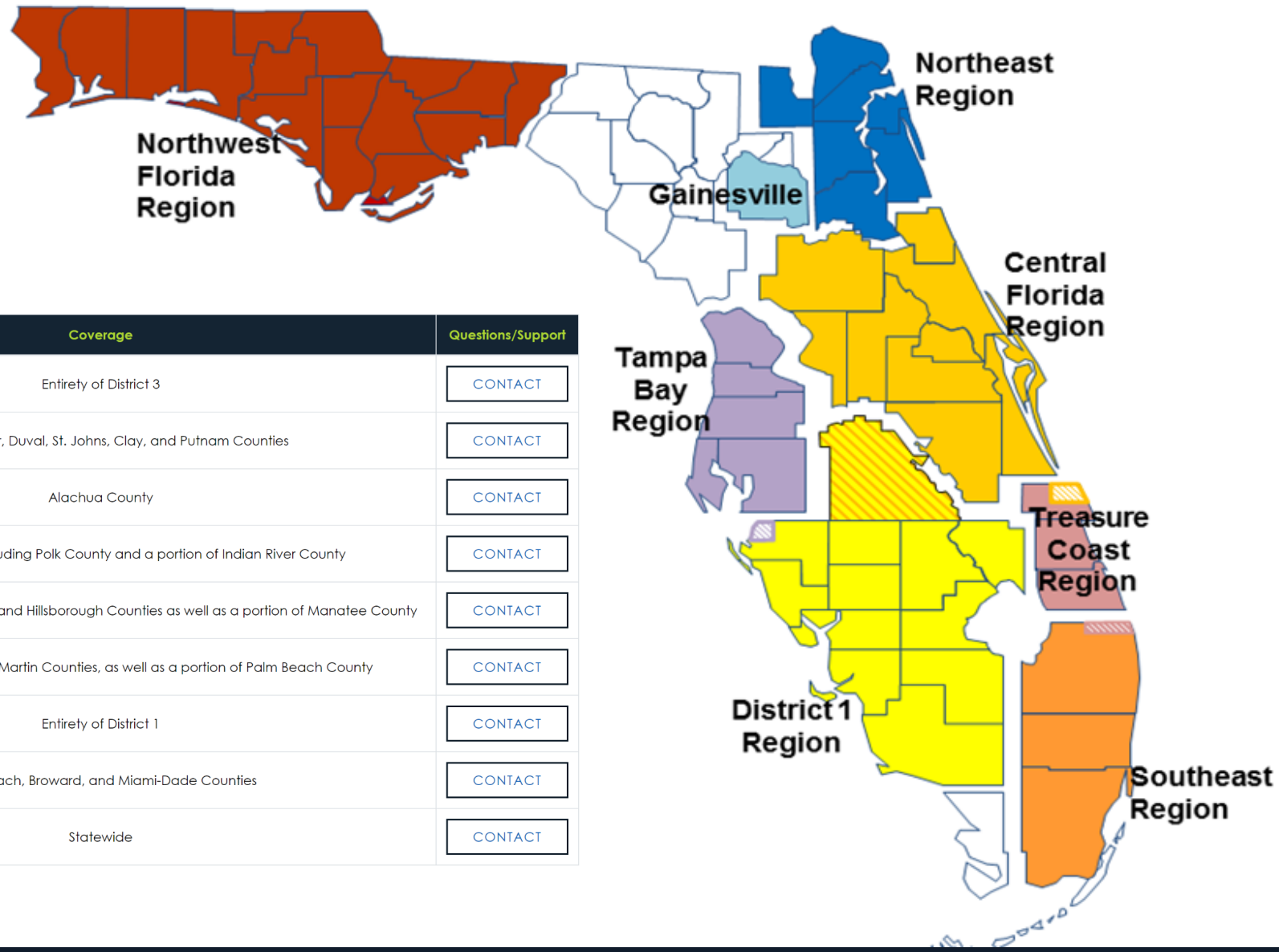
I-75 / SR 56 C-D System PD&E Study

How to Access TDMs in Florida

fdot.gov/forecasting

Model Downloads

Model	FTP Download	Metadata	Coverage	Questions/Support
Northwest Florida Region	DOWNLOAD ▼	VIEW	Entirety of District 3	CONTACT
Northeast Region	DOWNLOAD ▼	VIEW	Nassau, Baker, Duval, St. Johns, Clay, and Putnam Counties	CONTACT
Gainesville	DOWNLOAD ▼	VIEW	Alachua County	CONTACT
Central Florida Region	DOWNLOAD ▼	VIEW	All District 5 MPOs, including Polk County and a portion of Indian River County	CONTACT
Tampa Bay Region	DOWNLOAD ▼	VIEW	Citrus, Hernando, Pasco, Pinellas, and Hillsborough Counties as well as a portion of Manatee County	CONTACT
Treasure Coast Region	DOWNLOAD ▼	VIEW	Indian River, St. Lucie, and Martin Counties, as well as a portion of Palm Beach County	CONTACT
District 1 Region	DOWNLOAD ▼	VIEW	Entirety of District 1	CONTACT
Southeast Region	DOWNLOAD ▼	VIEW	Palm Beach, Broward, and Miami-Dade Counties	CONTACT
Turnpike (TSM)	DOWNLOAD ▼	VIEW	Statewide	CONTACT



Thank you!