

Florida Statewide Model MPOAC



Florida Statewide Model

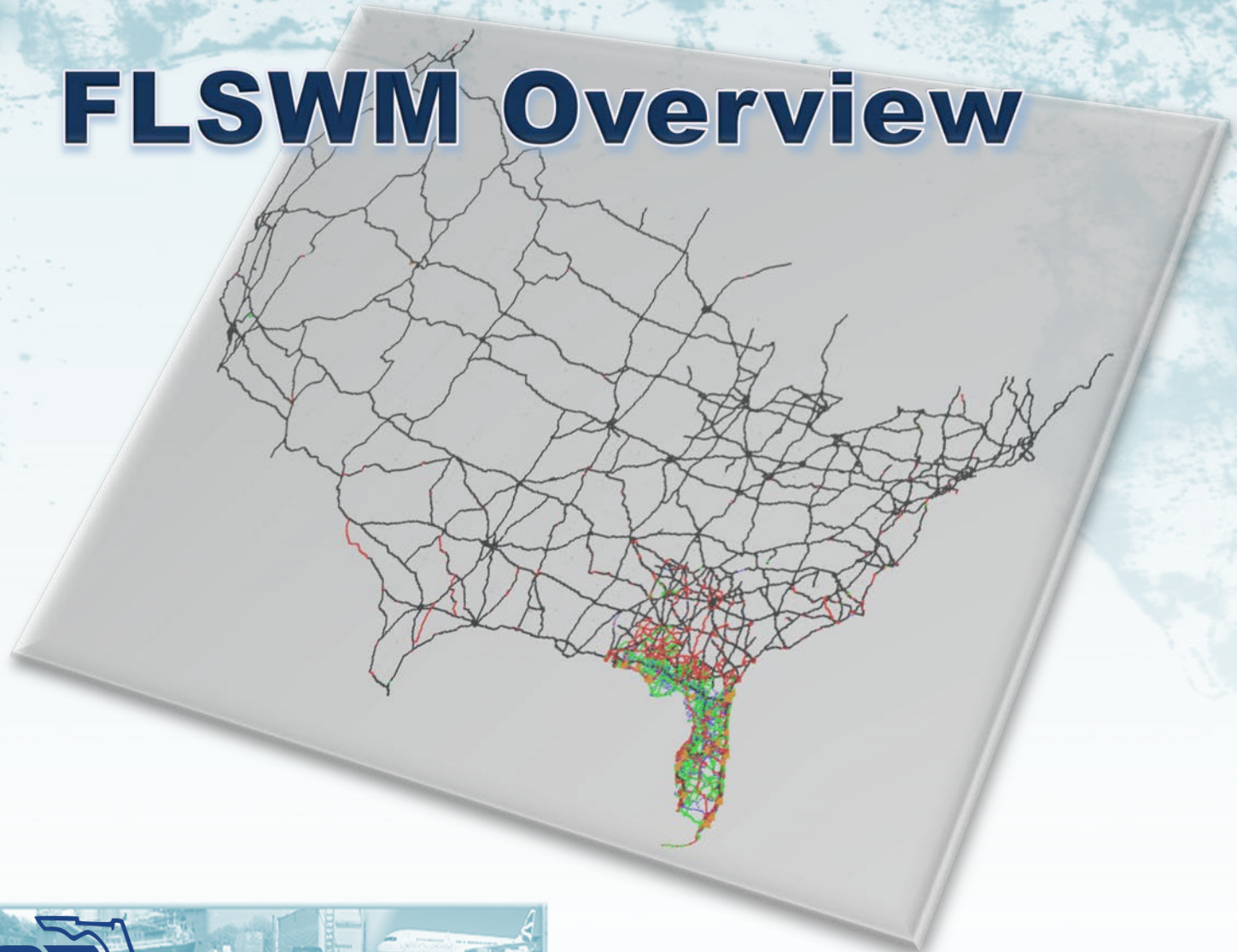
- ✓ **FLSWM Overview**
- ✓ **FreightSIM**
- ✓ **Other Items Of Interest**



FLORIDA STATEWIDE MODEL

Florida Statewide Model

FLSWM Overview



Florida Statewide Model

Statewide Model Uses

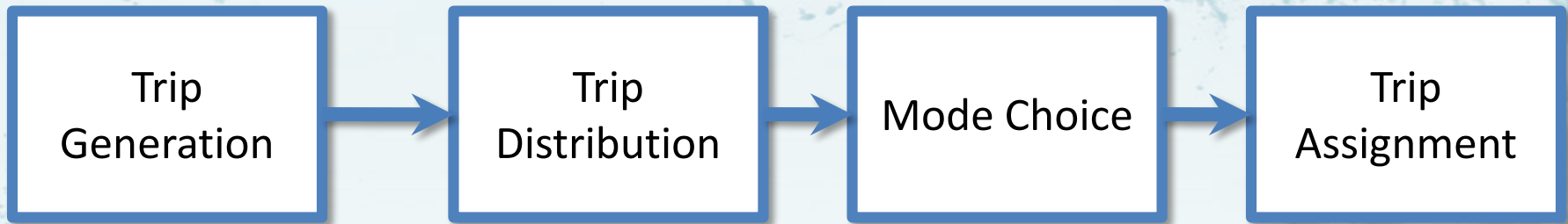
- Impact of Projects at Statewide Level
 - Corridor Improvements
 - Inter-City and Inter-Regional Trip Evaluation
- Sketch-Planning
- Evaluate Investment Scenarios
- Quantify economic impact
- Base Model for Sub-Area and Corridor Modeling



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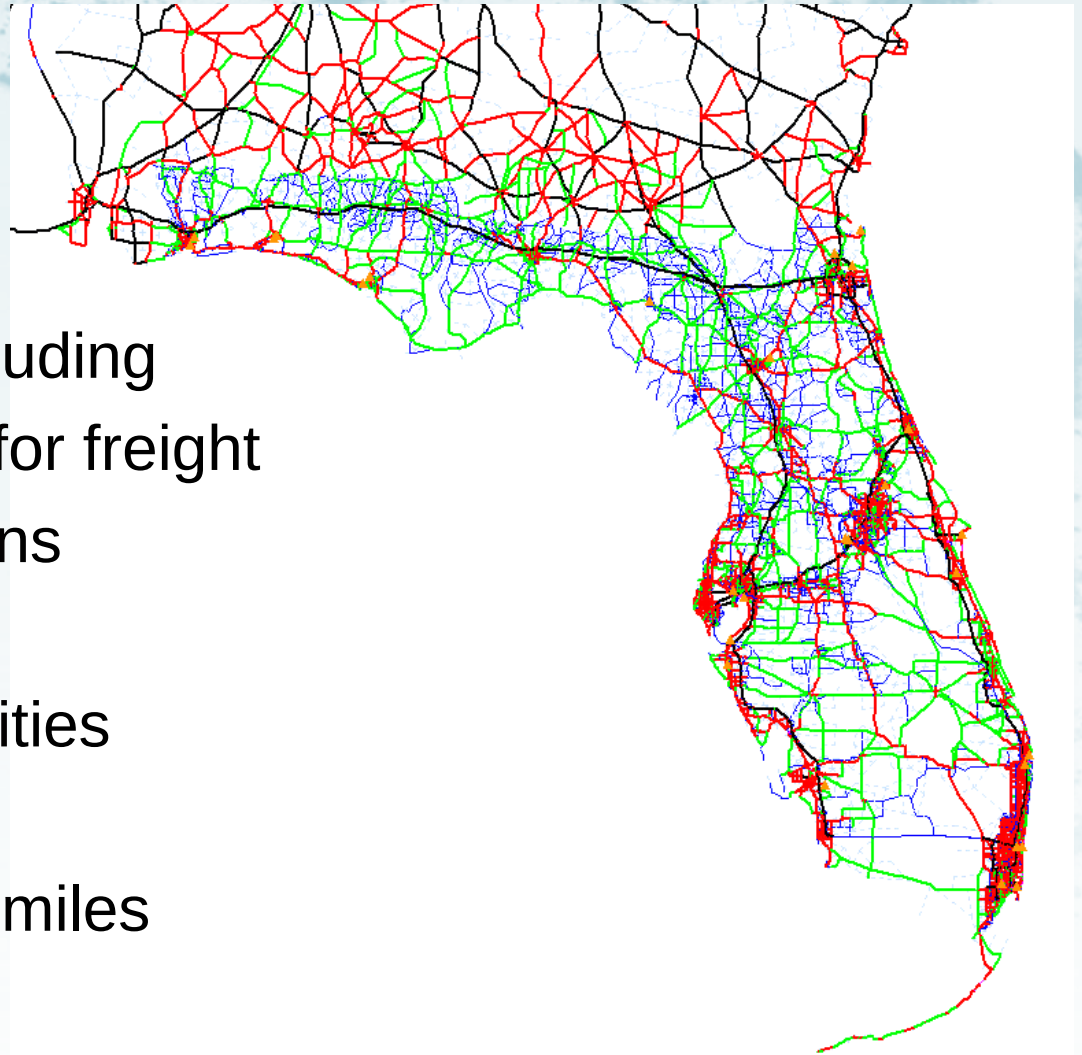
- Traditional four-step model on the passenger side



- Provides traffic analysis capability for all areas of the state
- Rural area forecasting capabilities where local models have not been developed
- Currently no plans to move the FLSWM to an Activity-based Model (ABM)

Florida Statewide Model

- Zonal Structure
 - 8,518 Florida TAZs
 - 9,538 total TAZs including out-of-state zones for freight plus external stations
- Network
 - Includes all SIS facilities
 - Many local roads
 - Total of 68,900 lane miles



Florida Statewide Model

- GIS Network
- TrueShape Roadways
- Composition of:
 - MPO Network Links
 - TeleAtlas / NavTeq
 - NTAD NHPN

Total Lane miles: 352,784

Outlying States: 237,800
(67%)

Outlying GA&AL: 19,309
(5%)

Border: 15,827 (4%)

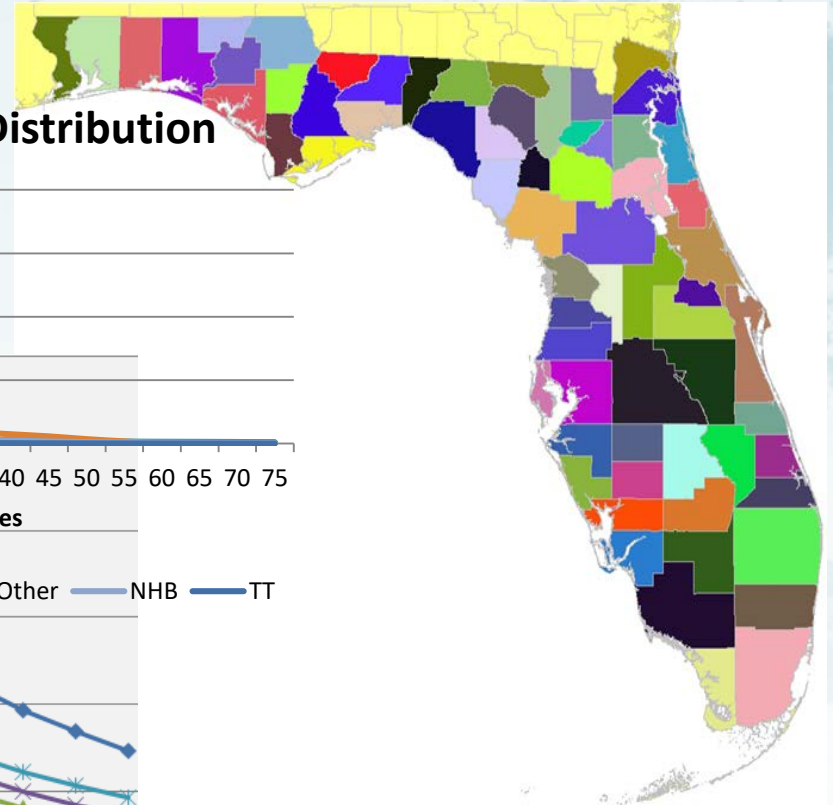
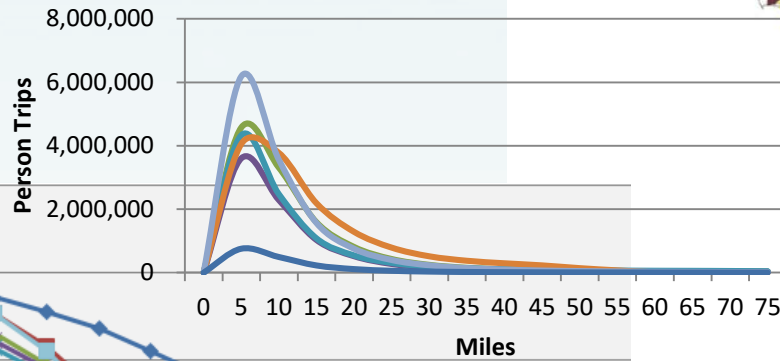
Fringe: 10,979 (3%)

Florida: 68,869 (20%)

Florida Statewide Model

Completed FLSWM Phase I Efforts

FLSWM Trip Length Distribution



Florida Statewide Model

Overview of FLSWM Updates – Phase I Efforts

Zones/SE Data



Updated zone structure and socioeconomic data (Pop, DU, Emp)

Network Updates



Updated speeds, area and facility types and refined 2010 count database

Trip Generation



Developed trip rates for each trip purpose by county

Trip Distribution



Updated friction factor curves, recalibrate gravity model, refined trip distribution and length by trip type

Trip Assignment



Updated/refined volume-delay curves by area type and facility type

Truck Component

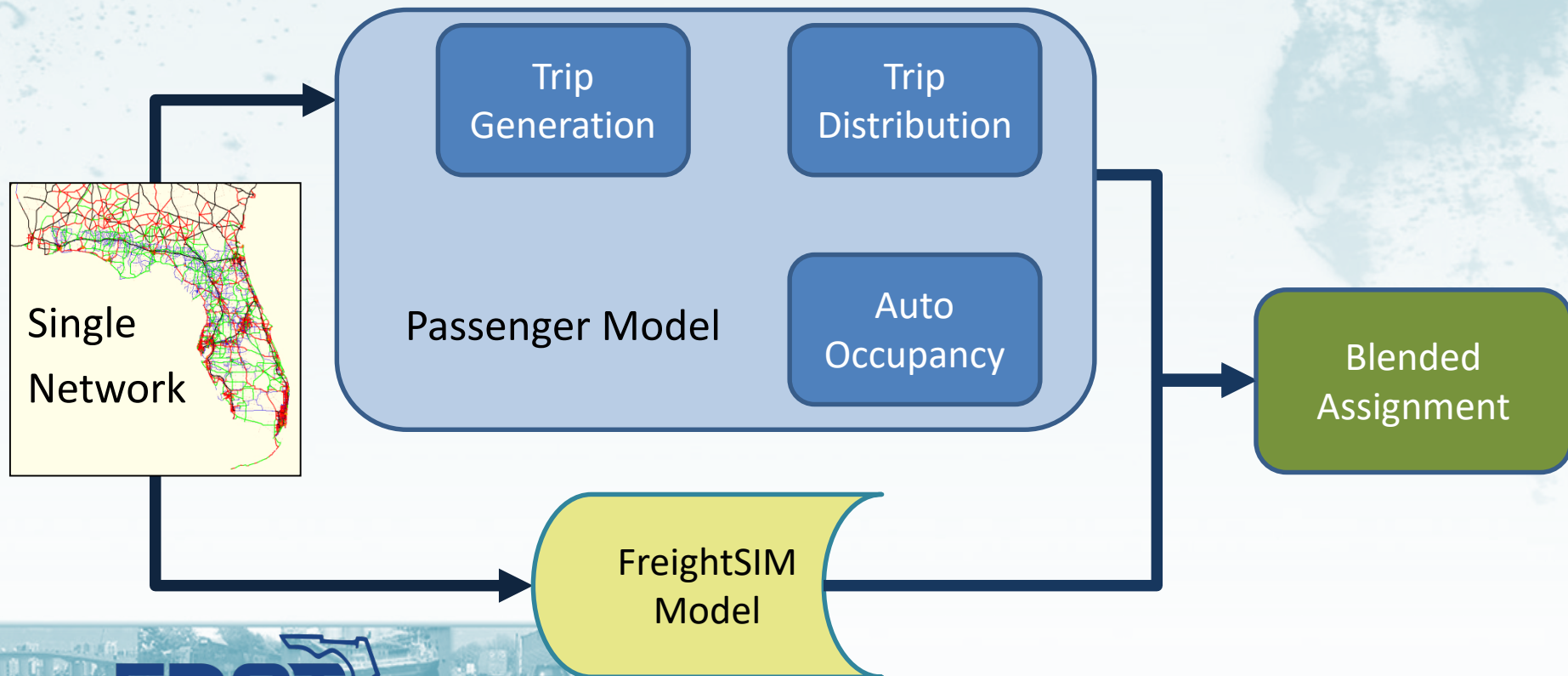


Incorporated freight model; removed the QRFM components and replaced with standard FSUTMS truck/taxi purpose

Florida Statewide Model

FLSWM is two models – a passenger model and a freight model. Both use the same network and are blended in final assignment.

Single Network - Blended Assignment Methodology



Florida Statewide Model FreightSIM

- One of the first statewide commodities based models in the US.
- The Florida Freight Supply-chain Intermodal Model: FreightSIM is intended to:
 - Support freight plan development
 - Evaluate potential large scale infrastructure investments
 - Provide inputs to more detailed project level evaluations
 - Provide inputs to regional transportation planning



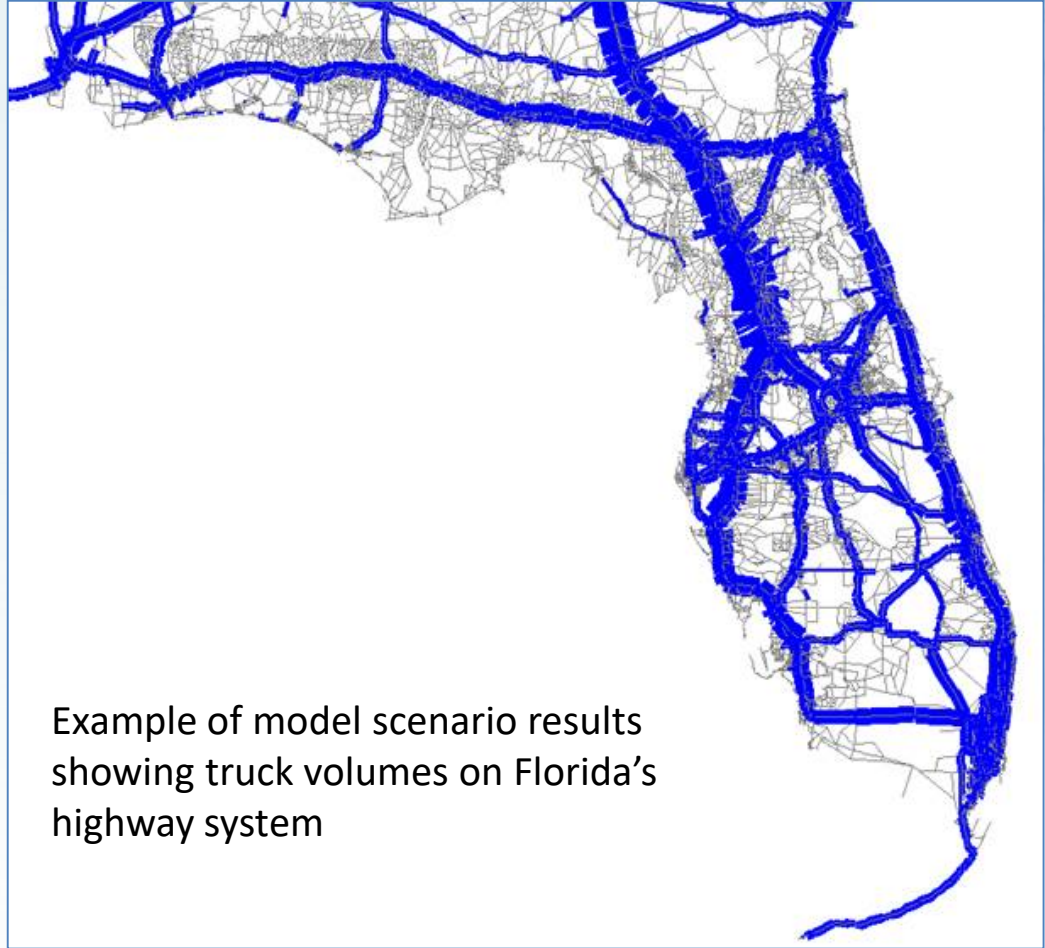
FREIGHT MODEL UPDATE

Florida Statewide Model FreightSIM

- FreightSIM produces numerous outputs describing freight system performance, including:
 - Shipment movements by mode (road, rail, water, air), with truck based shipments also converted to truck trips
 - Commodity and truck zone to zone trip tables
 - Loaded transportation networks, and derived measures, e.g. vehicle miles traveled by functional class and area type
- The results are sensitive to many policy inputs and change in the economy, including:
 - Infrastructure Investments (highway system, ports)
 - Tolls, user fees, or pricing
 - Growth in employment and productivity by industry

Florida Statewide Model FreightSIM

- FreightSIM is multimodal and captures import and export movements as well as domestic freight
- Freight flows through Florida's deep sea ports are represented, for example those through the Port of Jacksonville



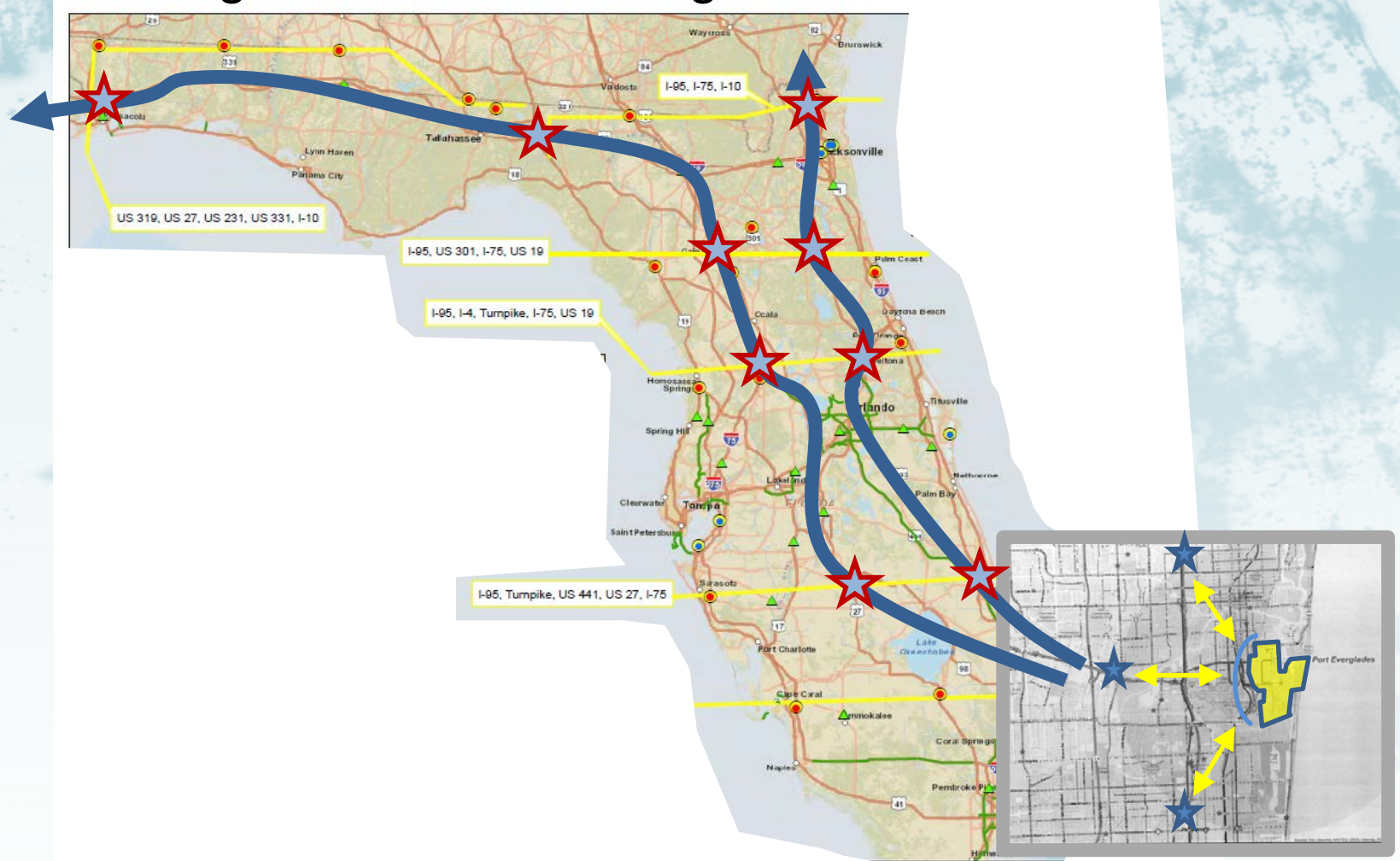
Florida Statewide Model

Targeted Bluetooth Origin and Destination



Florida Statewide Model

Targeted Bluetooth Origin and Destination



Interstate Crossings to Seaports

PortMiami

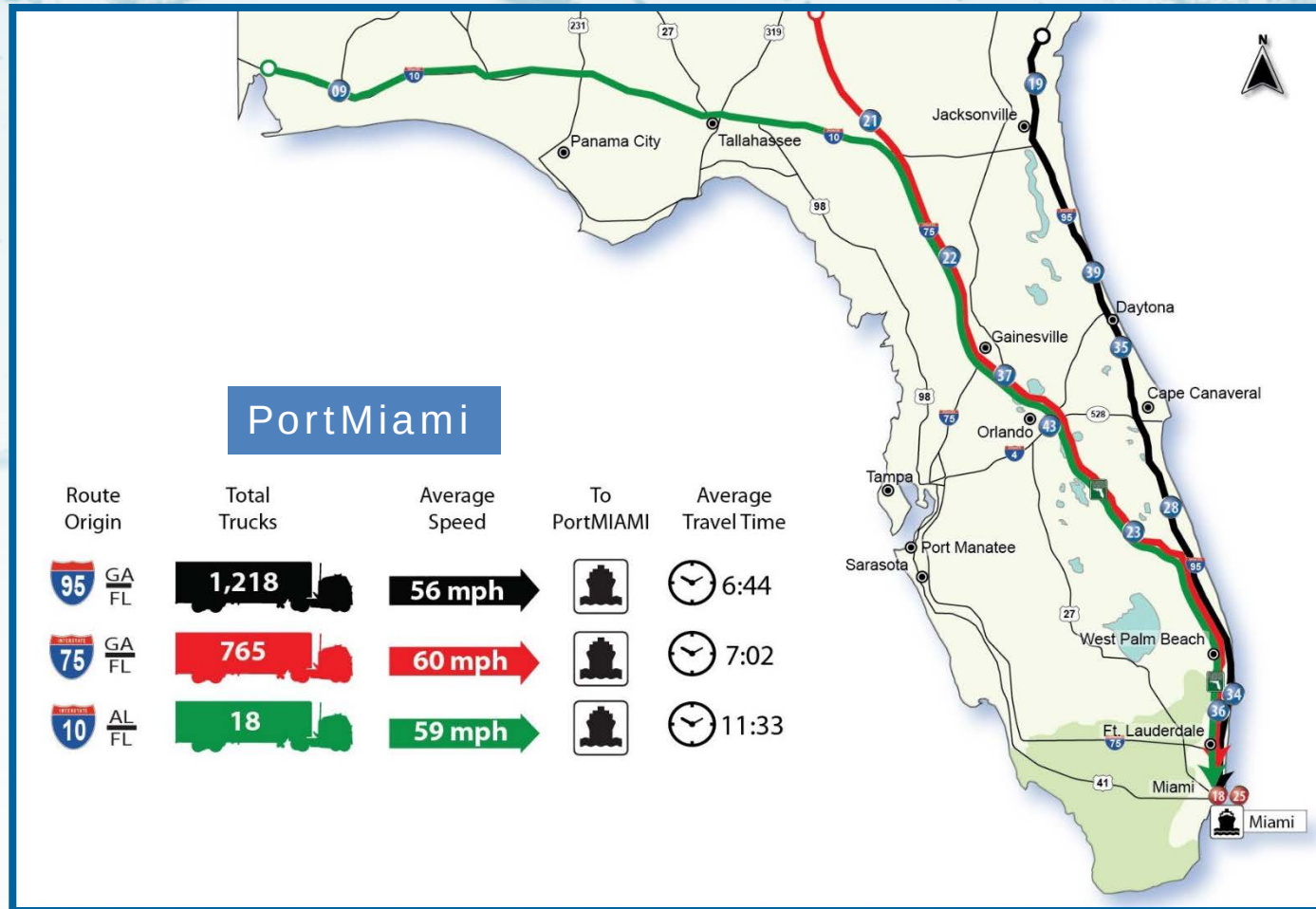
From I-95 Stateline to PortMiami				85%tile	Avg
Detection Site(s)	% Trucks	# Trucks	% Origin Dropoff*	Speed* (mph)	Time* (mins)
19-I-95 Jax Bdr	17.0%	141,261	N/A	N/A	N/A
39-I-95 Palm Cst	15.1%	59,274	58.0%	56	85
35-I-95 N Smyrna	15.0%	25,628	23.8%	65	33
28-I-95 N SR 60	11.9%	17,765	5.6%	64	94
34-I-95 Bynt Bch	5.5%	7,450	7.3%	65	94
Port of Miami		1,218	4.4%		
25-Tunnel	100.0%	1,047		34	98
18-Bridge	100.0%	171		31	107
From I-95 Stateline to PortMiami				56	404

From I-75 Stateline to PortMiami				85%tile	Avg
Detection Site(s)	% Trucks	# Trucks	% Origin Dropoff*	Speed* (mph)	Time* (mins)
21-I-75 at Border	26.9%	148,269	N/A	N/A	N/A
22-I-75 Gainesville	9.7%	33,649	77.3%	67	85
37-TPK N Okmpka	16.2%	17,765	10.7%	68	51
23-TPK Ft D Plaza	17.2%	6,166	7.8%	66	105
36-TPK Delray Bch	8.5%	2,569	2.4%	64	96
Port of Miami		765	1.2%		
25-Tunnel	100.0%	616		37	85
18-Bridge	100.0%	149		25	126
From I-75 Stateline to PortMiami				60	422

From I-10 Stateline to PortMiami				85%tile	Avg
Detection Site(s)	% Trucks	# Trucks	% Origin Dropoff*	Speed* (mph)	Time* (mins)
09-I-10 Pensacola	14.4%	90,482	N/A	N/A	N/A
22-I-75 Gainesville	9.7%	5,331	94.1%	59	356
37-TPK N Okmpka	16.2%	3,735	1.8%	68	51
23-TPK Ft D Plaza	17.2%	1,519	2.4%	66	105
36-TPK Delray Bch	8.5%	676	0.9%	64	96
Port of Miami		18	0.7%		
25-Tunnel	100.0%	12		37	85
18-Bridge	100.0%	6		25	126
From I-10 Stateline to PortMiami				59	693

* From previous to current location

Interstate Crossings to Seaports



Florida

Statewide Model

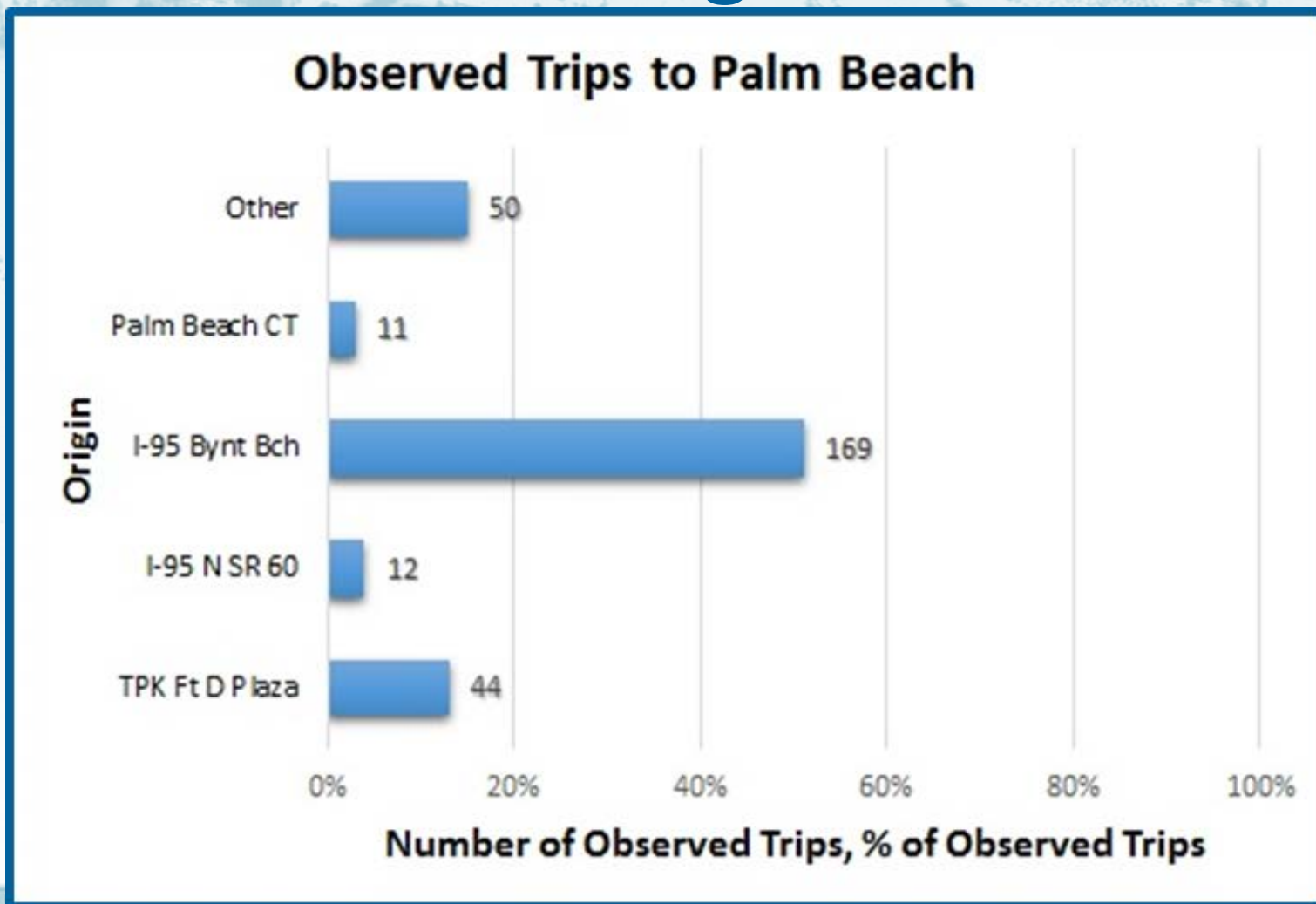
Seaport to Seaport

Observations

- Most significant activity occurred between ports in the same or adjacent regions
- Most notable interactions were between PortMiami and Port Everglades and Port Manatee and Port Tampa Bay
- Evidence of long distance interactions was most associated with JAXPORT



Cruise Passenger Vehicles



Resulting Data Set

- 35 Days of Data
- 45 Detection Locations

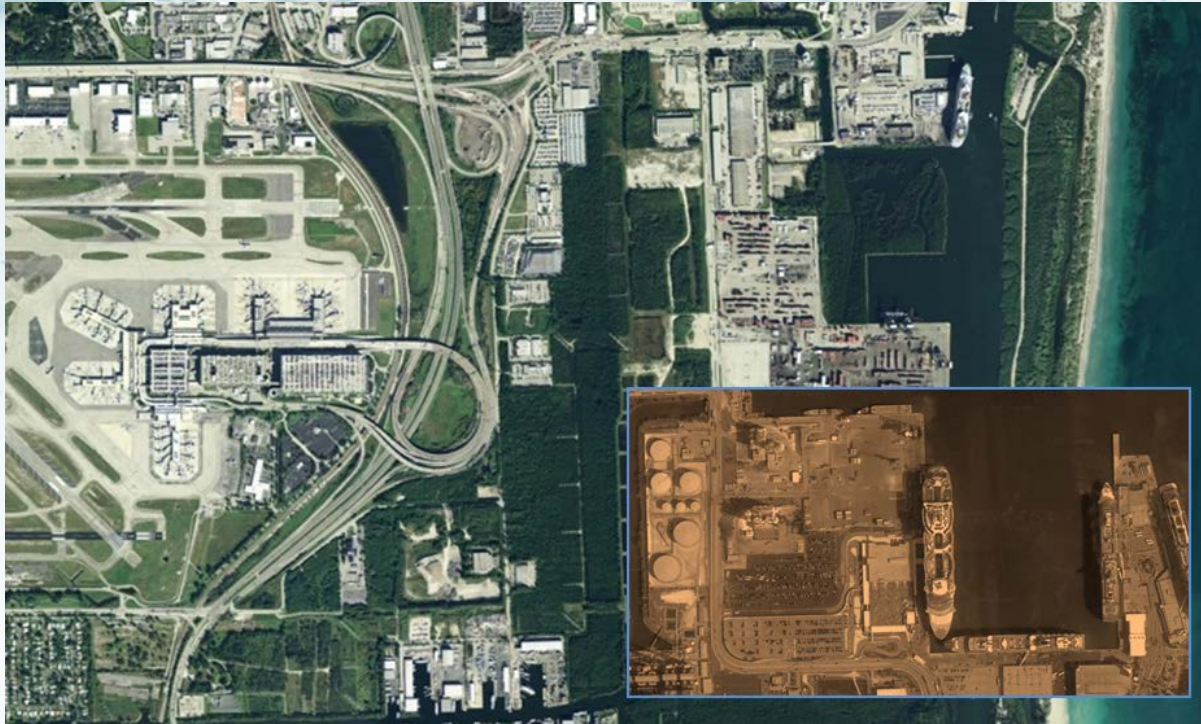
- 25 Million Records
- 4 Million Unique Vehicles

- Model Validation
- Multiple Comparative Transportation Analyses

- Speed, Travel Time, Origin/Destination for Regional, Inter-Regional & Interstate Studies

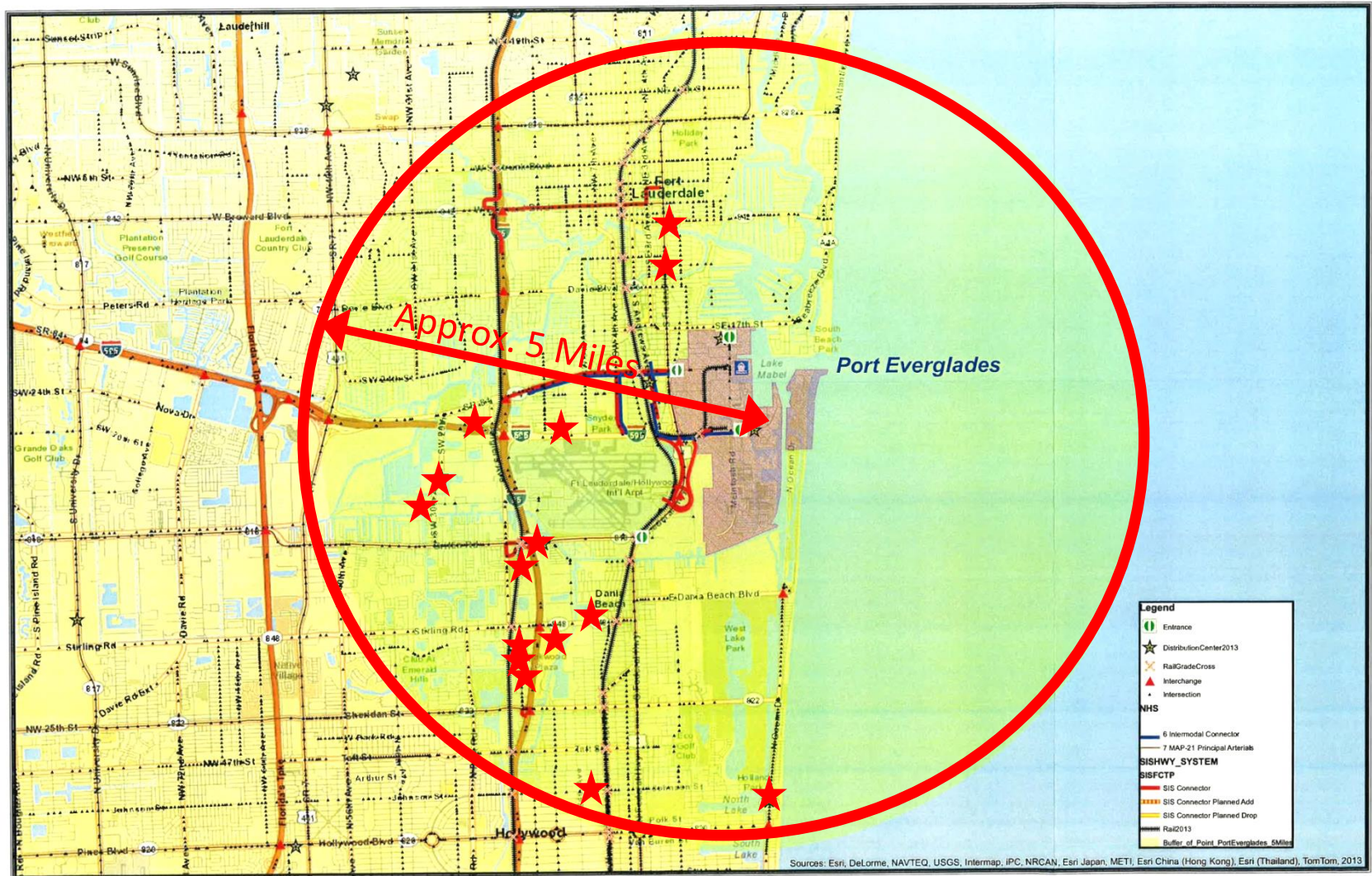
Florida Statewide Model

Port Everglades DTA and Microsimulation Models



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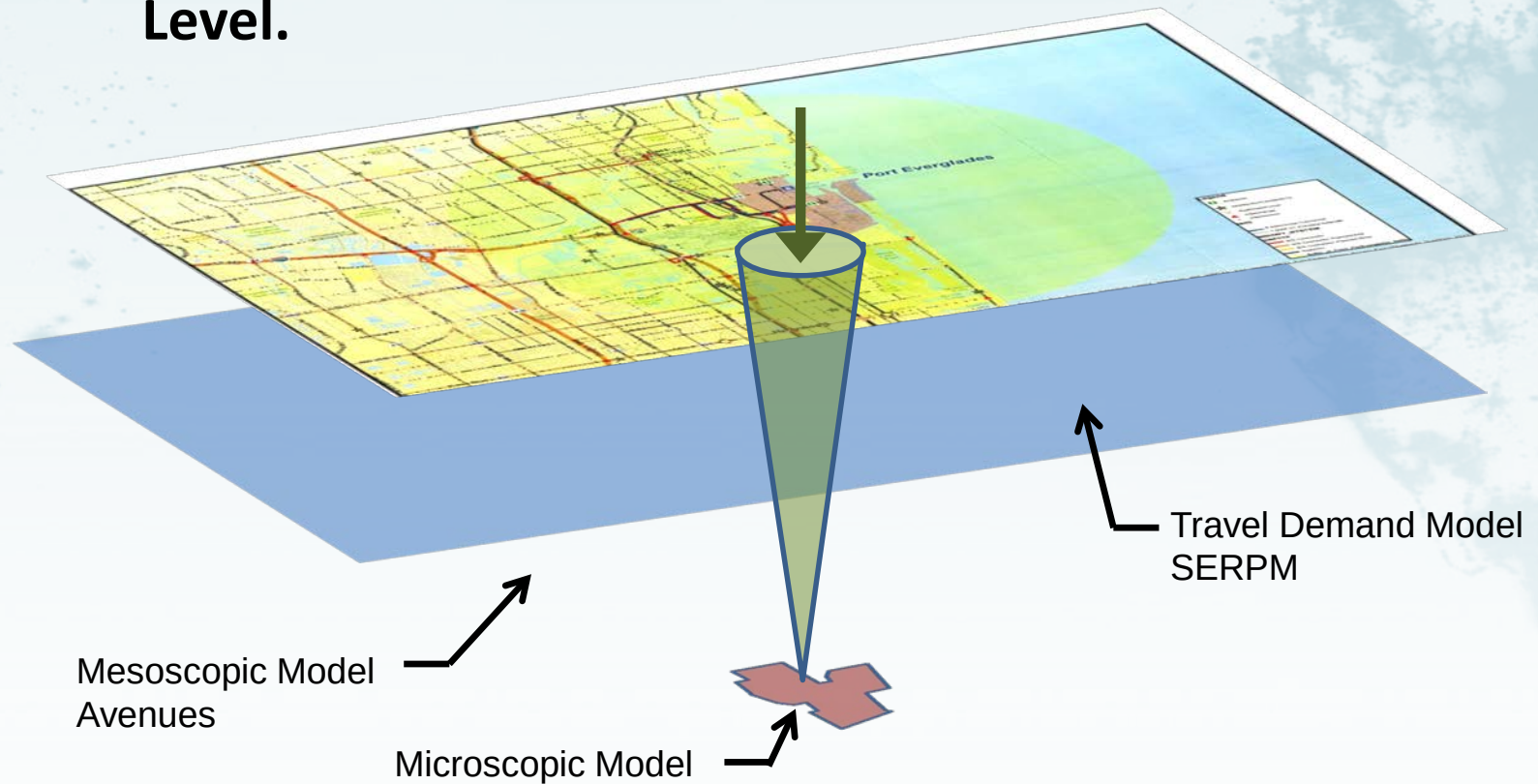
Port Everglades DTA and Microsimulation Models



Florida Statewide Model

Port Everglades DTA and Microsimulation Models

**Multi Resolution Drill Down
Ability to Scenario Plan at an Operational
Level.**



Florida Statewide Model

Other Research Initiatives

- Tourist Data – Tourist Model
 - University of Florida, Department of Tourism
 - National Research Center for Tourism
- Contraflow vs. Hard Shoulder
- Urban Area Incident Evacuation
 - Research Funded
 - Soliciting for a researcher
- Economic Forecast using FreightSIM
 - Dr Peng, University of Florida, Department of Civil Engineering



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