



Application of Florida Tax Revenue Data for Petroleum Supply/Demand Chain

Dr. Min-Tang Li, FDOT District 4

Peter Haliburton, Cambridge Systematics

Florida Department of Transportation
Data Symposium

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Project Background

- Petroleum supply disruption
- Infrastructure planning need
- Grant opportunity



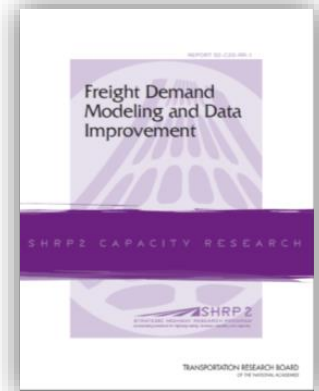
Overview

- Background
- SHRP2 C-20 Program
- Project goals & partners
- PEV petroleum product flows
- Data analysis
 - Department of Revenue tax records
 - Suitability

C-20 Program

Freight Demand Modeling and Data Improvement Implementation Assistance Program Purpose:

To foster fresh ideas and new approaches to freight demand modeling and data collection that ultimately enhance decision-making.



C-20 Program

- **SHRP2 C-20: Freight Demand Modeling and Data Improvement**
 - To foster fresh ideas and new approaches to freight demand modeling and data collection that ultimately enhance decision-making.

Data Priority Initiatives:

- Develop freight data resources for application at sub-regional levels.
- Establish a portfolio of core freight data sources to support planning, programming, and project prioritization.
- Determine factors driving freight patterns and characteristics.

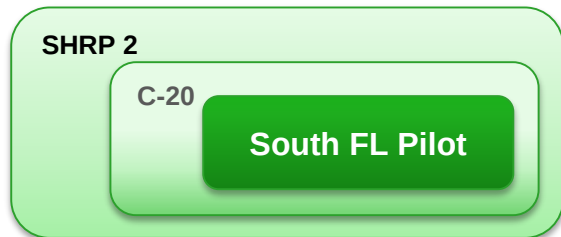
Modeling Priority Initiatives:

- Develop freight forecasting methods that can be applied at multiple geographic levels
- Establish modeling approaches for behavior-based freight movement.
- Establish techniques and standard practices to review and evaluate freight forecasts.

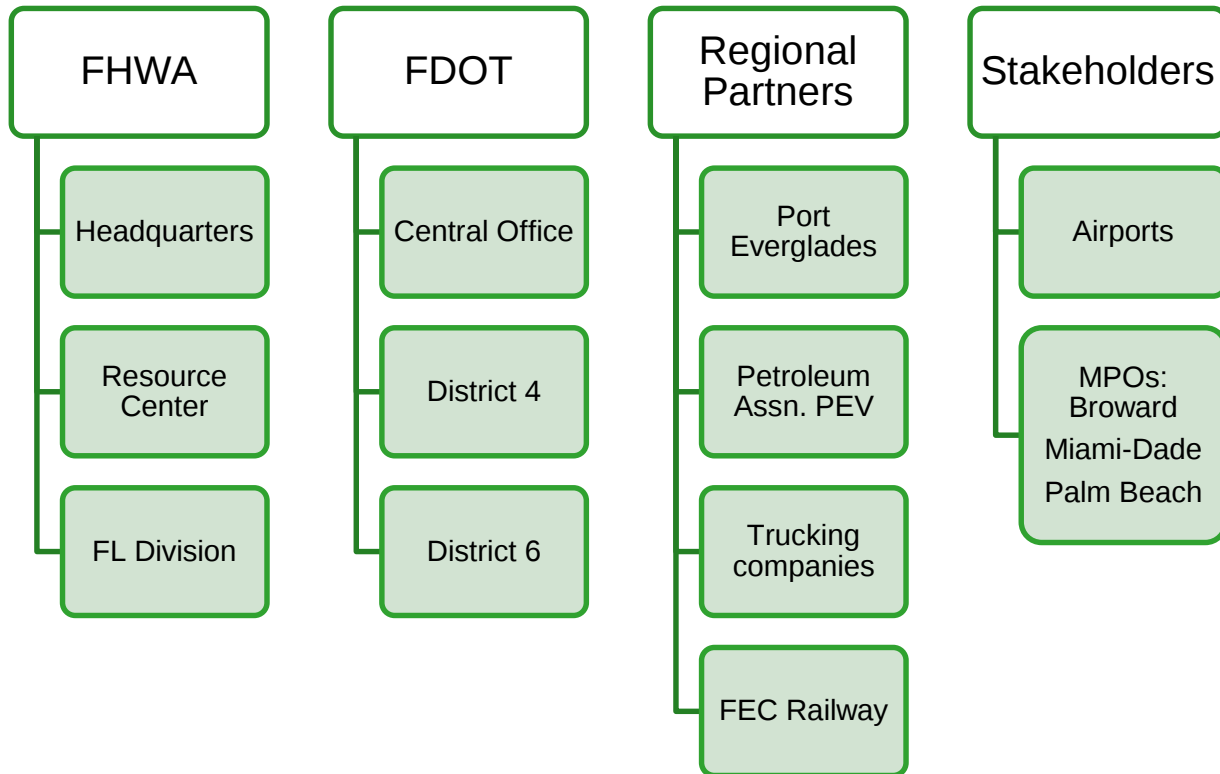


South Florida Pilot Project Goals

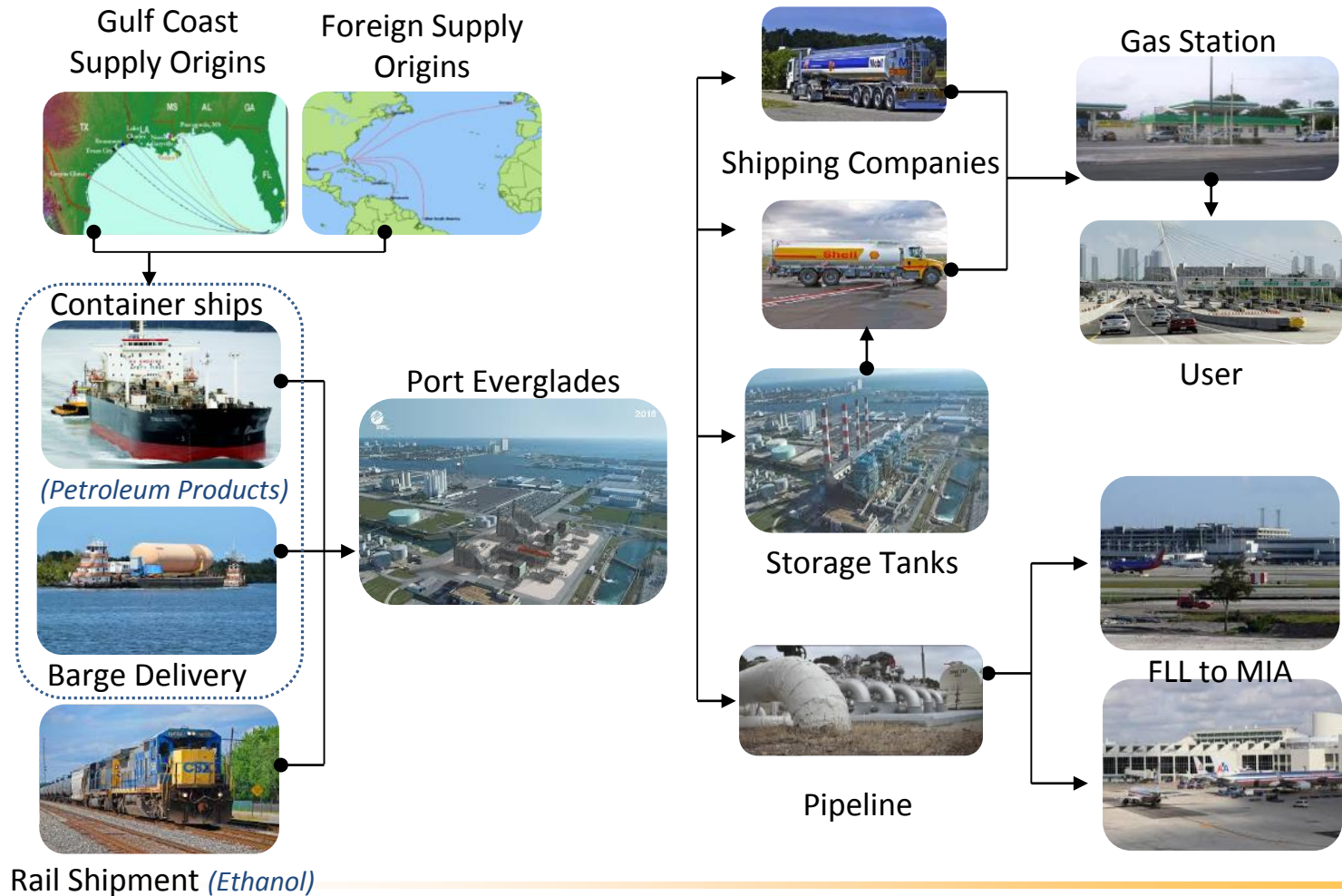
1. Quantify distribution of petroleum products from Port Everglades to destinations in South Florida
 - Document routes used
2. Research and evaluate available technologies that can:
 - Detect and classify, and
 - Track through the networkfuel tanker trucks operating from Port Everglades



Project Partnership



Petroleum Product Flow at PEV



Inbound Product Flow

Domestic and International Origins

Gulf Coast Supply Origins



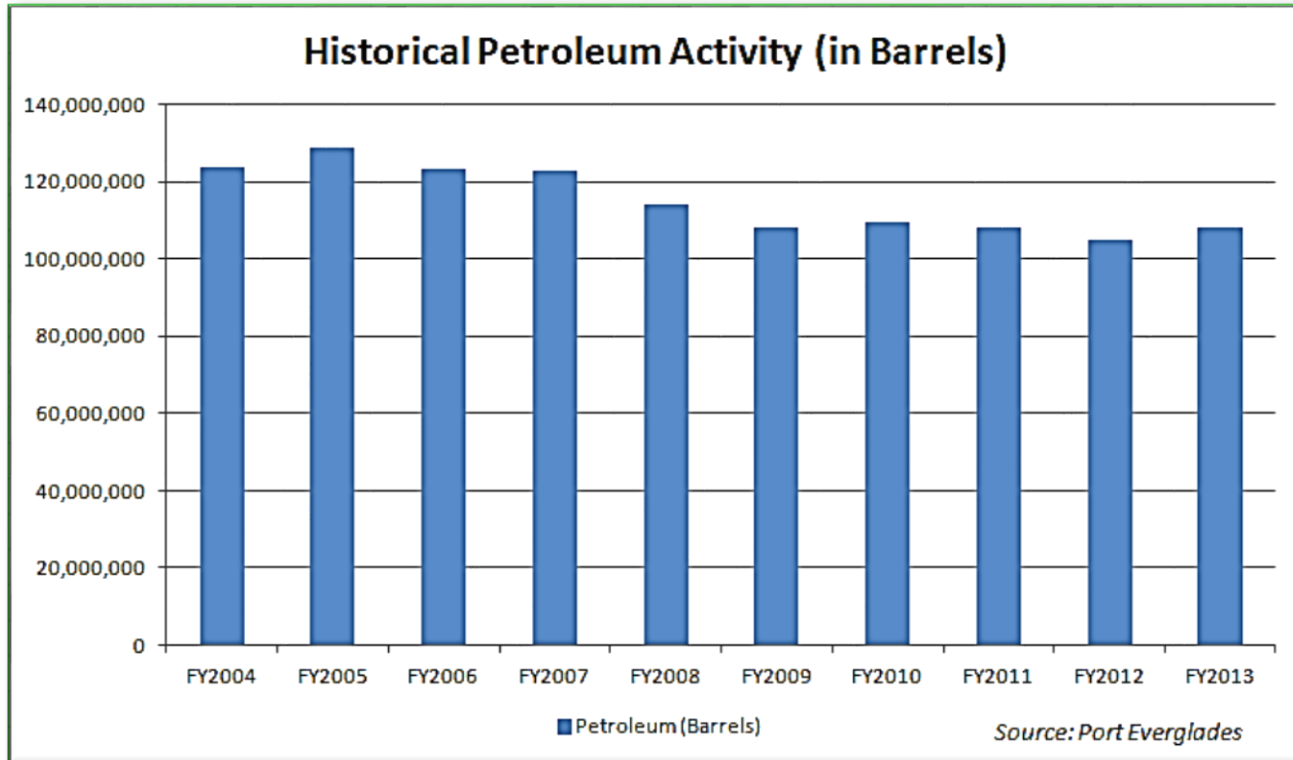
- Port of Corpus Christi, Corpus Christi, TX
- Port of Houston, Houston, TX
- Port of Beaumont, Beaumont, TX
- Port of Lake Charles, Lake Charles, LA
- Venice Port, Venice, LA
- Port of South Louisiana, Garyville, LA (Norco refinery)
- Port of Pascagoula, Pascagoula MS

Foreign Supply Origins



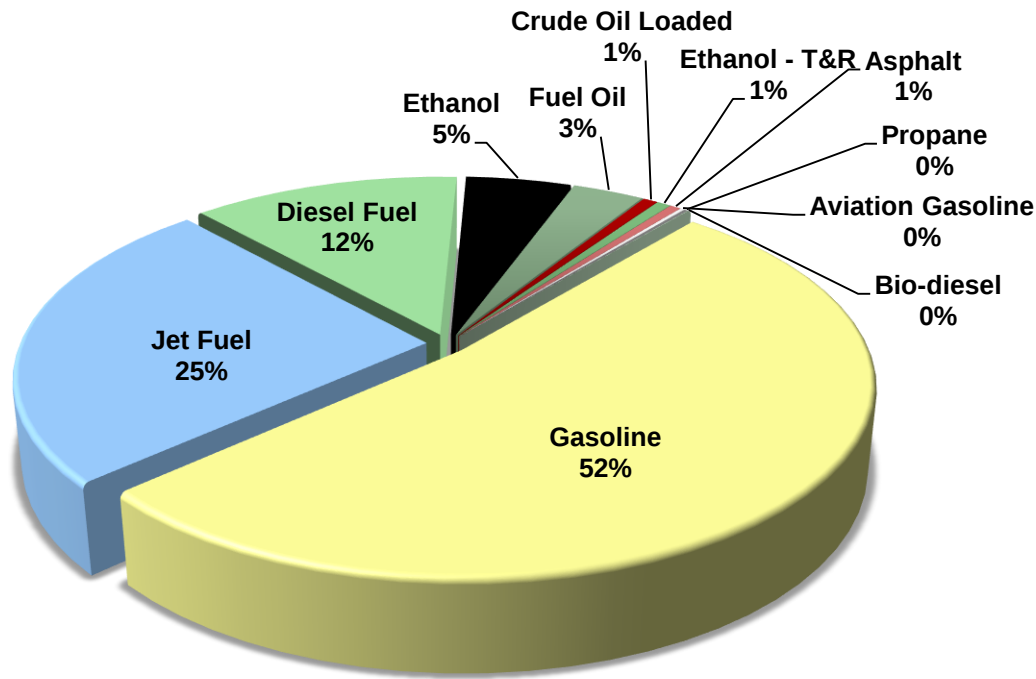
- Canada
- Mexico
- Caribbean
- Venezuela
- Other South America
- Europe

Inbound Product Flow



Source: Port Everglades

Inbound Product Flow



Product	Barrels	Share
Gasoline	57,001,729	52.3%
Jet Fuel	27,206,124	24.9%
Diesel Fuel	13,539,338	12.4%
Ethanol	5,289,465	4.8%
Fuel Oil	3,629,986	3.3%
Crude Oil Loaded	723,063	0.7%
Ethanol - T&R	703,547	0.6%
Asphalt	546,590	0.5%
Aviation Gasoline	214,886	0.2%
Propane	196,008	0.2%
Bio-diesel	29,863	0.0%
Total	109,080,601	100.0%

Source: Port Everglades, FY 2013

Product Transfer - Onsite

- Fuel Slips and Berths

- Terminals

- Pipelines



Product Transfer - Onsite

• Fuel Slips and Berths

• Terminals

• Pipelines

Petroleum Companies and Fuel Terminals

PETROLEUM COMPANIES AND TERMINALS

- 1 Marathon, Eisenhower
- 2 Buckeye
- 3 High Sierra
- 4 TransMontaigne North
- 5 Marathon, Spangler
- 6 Chevron
- 7 ExxonMobil
- 8 BP
- 9 Chevron
- 10 Motiva East
- 11 TransMontaigne South
- 12 Citgo
- 13 Targa
- 14 BP
- 15 Motiva South
- 16 Port Consolidated
- 17 ExxonMobil
- 18 Vecenergy



1. BP
2. Buckeye
3. Chevron
4. Citgo
5. Everglades Pipeline
6. ExxonMobil
7. FPL
8. High Sierra
9. Marathon
10. Motiva
11. Targa Midstream
12. TransMontaigne
13. Vecenergy/Valero

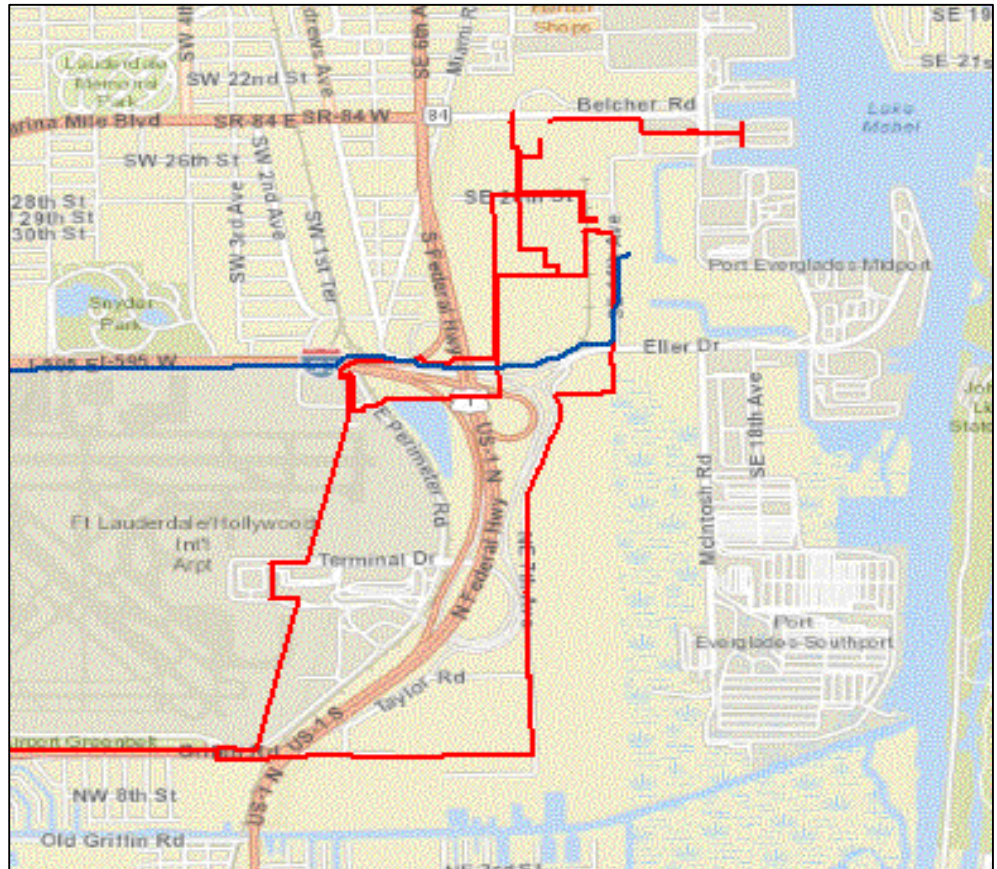
Source: Port Everglades, FY 2013

Product Transfer - Onsite

• Fuel Slips and Berths

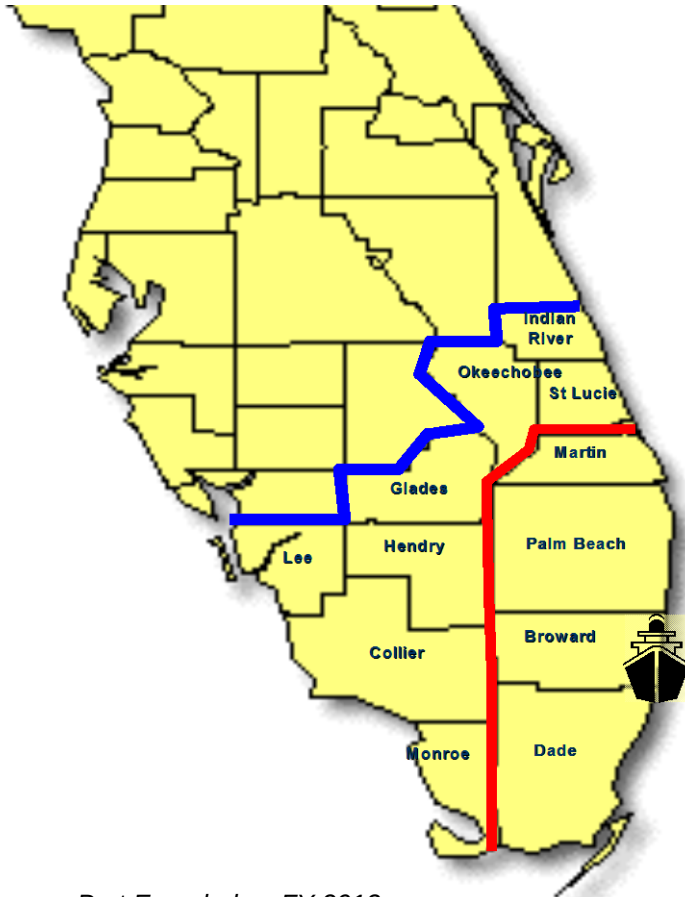
• Terminals

• Pipelines



Source: US Pipeline and Hazardous Material Safety Administration

Petroleum Product Distribution



- **Red line** indicates counties 100% served by PEV
- **Blue line** indicates border of distribution area

Source: Port Everglades, FY 2013

Data Collection and Analysis

- Fuel Tax Data –
Florida Department of Revenue

- Transaction date
- Origin and destination location
- Fuel product type
- Shipping mode, carrier
- Volume (gal)

- Oct. 2012 – Dec. 2013

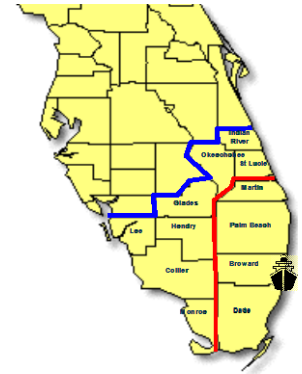
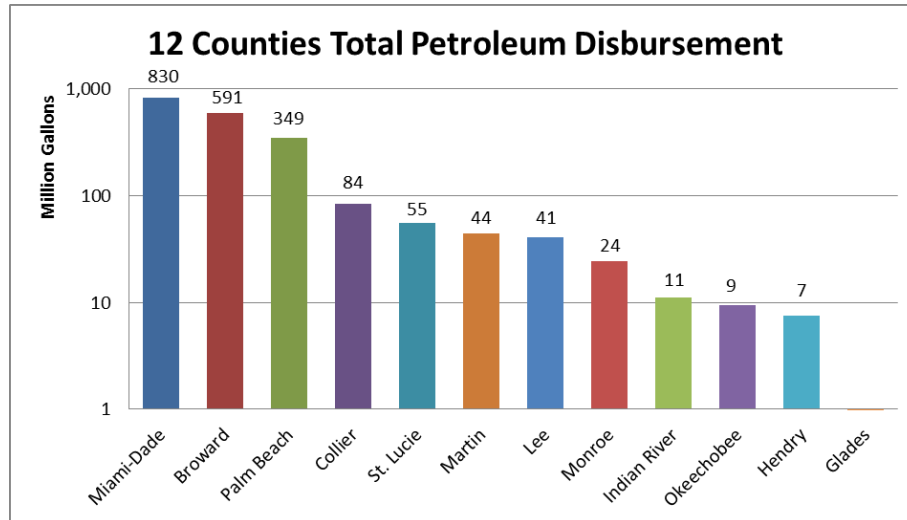
- 7.2M records; 200k Broward



ID	Period	Applied Date	Carrier FEIN	ip_Rec_Date	Mode	nt_Of_Dest	t_Of_Origin	Product_type	Schedule	Purchaser FEIN	Seller FEIN	Gallons	County
6173415	201308	20130831	260156778	20130804	J	068501734	T65FL2163	065	1A	592785839	250527925	8,644	Broward
6173416	201308	20130831	260156778	20130804	J	068501735	T65FL2163	065	1A	592785839	250527925	4,907	Broward
6173417	201308	20130831	260156778	20130804	J	068502157	T65FL2163	065	1A	592785839	250527925	3,875	Broward
6173423	201308	20130831	260156778	20130805	J	068501961	T65FL2163	065	1A	592785839	135401570	4,433	Broward
6173424	201308	20130831	260156778	20130805	J	068841195	T65FL2163	065	1A	592785839	135401570	7,330	Broward
6174742	201308	20130831	260116405	20130801	J	068502833	T65FL2150	124	5B	581091383	841477374	6,416	Broward
6174767	201308	20130831	260156778	20130801	J	069809646	T65FL2165	124	5LO	043360747	841477374	8,685	Broward
6193828	201308	20130831	590667006	20130801	J	069810880	139200340	167	5A	650425401	590667006	7,403	Broward
6193829	201308	20130831	590667006	20130801	J	069810880	139200340	227	5A	650425401	590667006	494	Broward
6193834	201308	20130831	590667006	20130801	J	069804698	139200340	167	5A	590667006	590667006	1,800	Broward
6193850	201308	20130831	590667006	20130801	J	069810880	139200340	167	5A	650425401	590667006	7,383	Broward

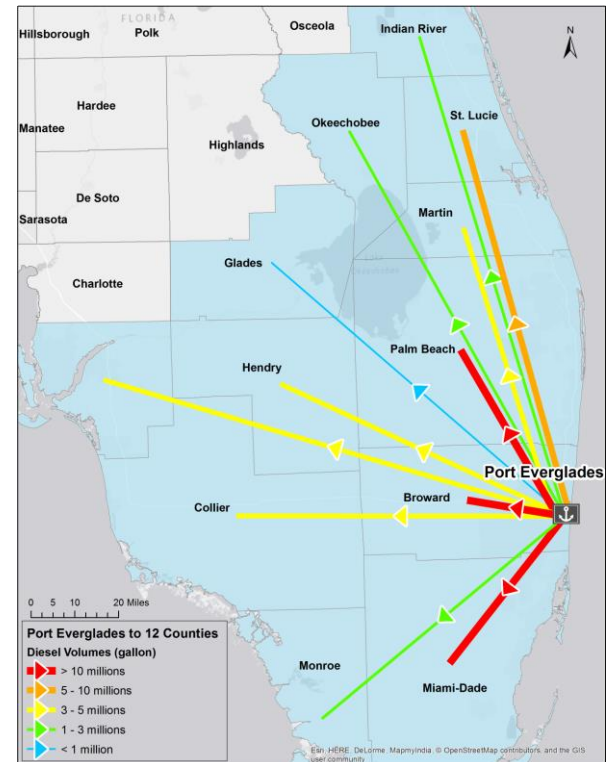
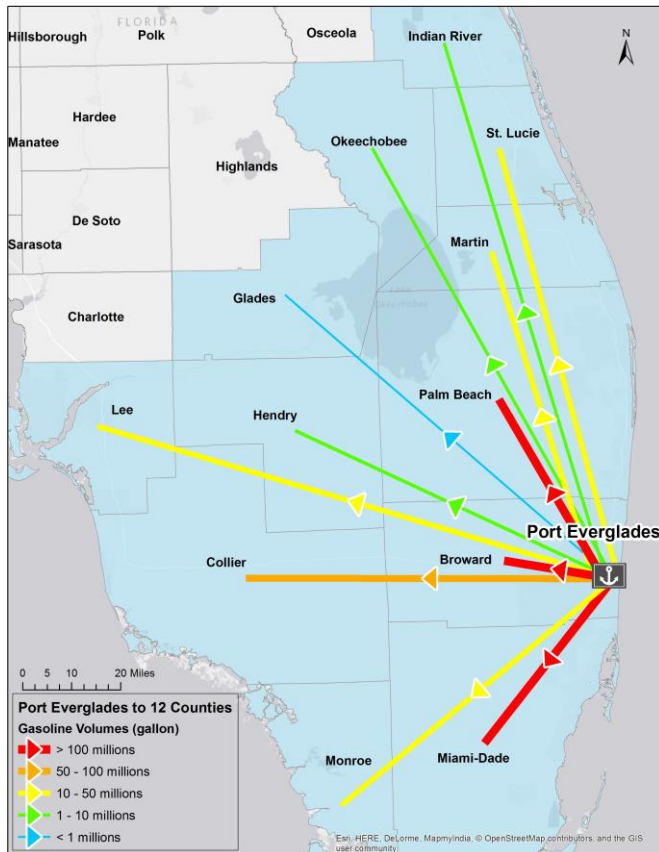
Data Collection and Analysis

- Available w/o additional cost
- Updated monthly
- Similar data available through open records offices confirmed - OR, WA, TX, MD
 - Also likely available for CA, GA, NC, NJ, MA



Data Analysis

- Gasoline and Diesel distribution from PEV

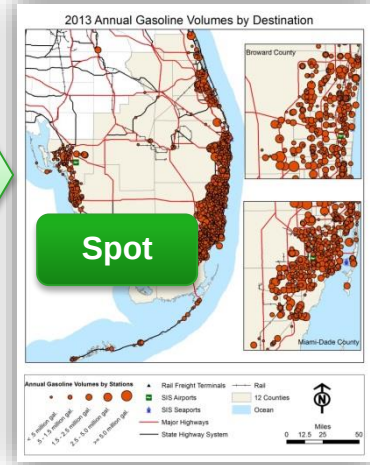
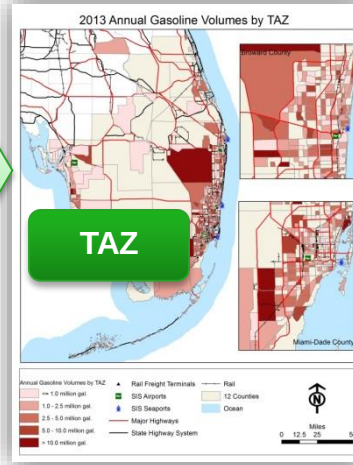
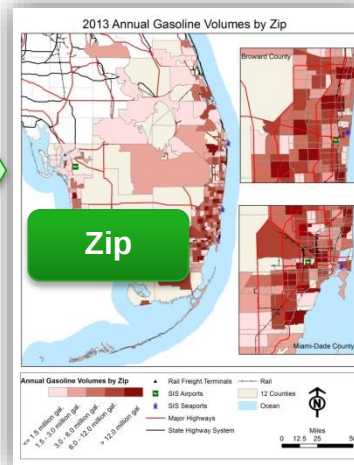
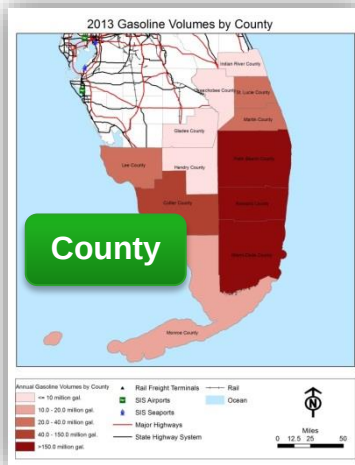


Data Analysis

Fuel Tax Data

- Aggregated to different geographic levels
 - County, ZIP, TAZ, MAZ
- Convert to tanker truck trips

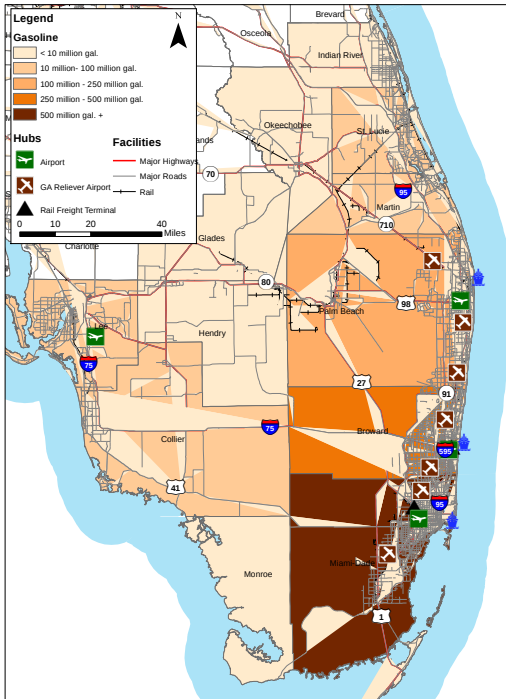
- Data cleaning required
- Data fields missing specific location information



Data Analysis

■ 12-County Gasoline

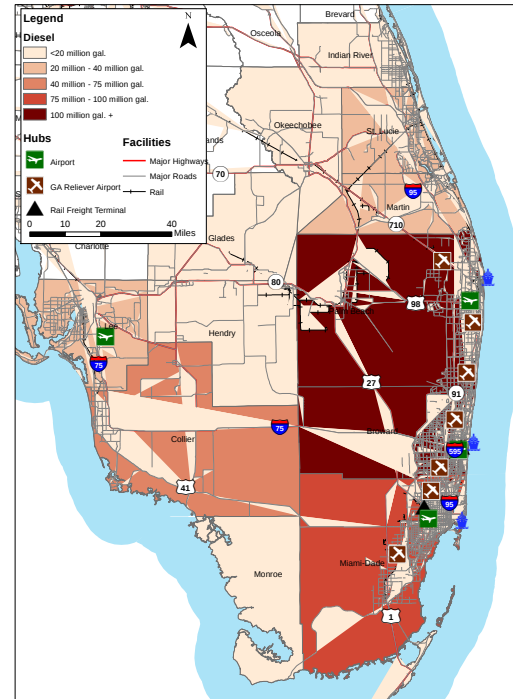
2013 Volume of Gasoline Products by Gallon,
From Port Everglades to 12-County Distribution Region



Terminal Supplier and Wholesalers Returns. Florida Department of Revenue. July 10, 2014

■ 12-County Diesel

2013 Volume of Diesel Products by Gallon,
From Port Everglades to 12-County Distribution Region

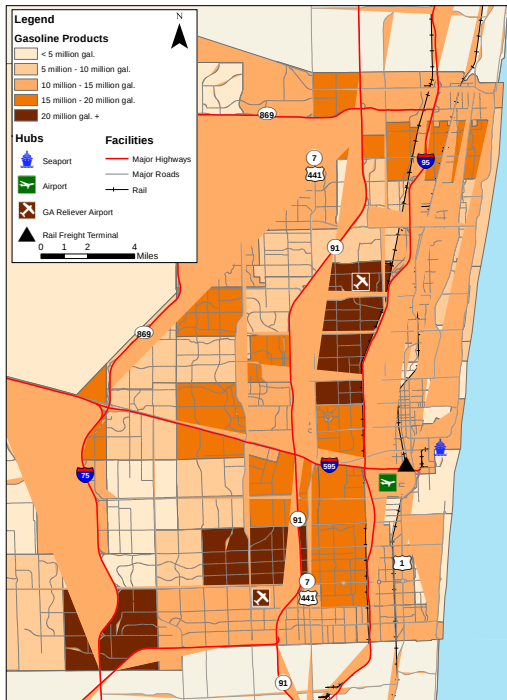


Terminal Supplier and Wholesalers Returns. Florida Department of Revenue. July 10, 2014

Data Analysis

■ Broward Gas by Zip

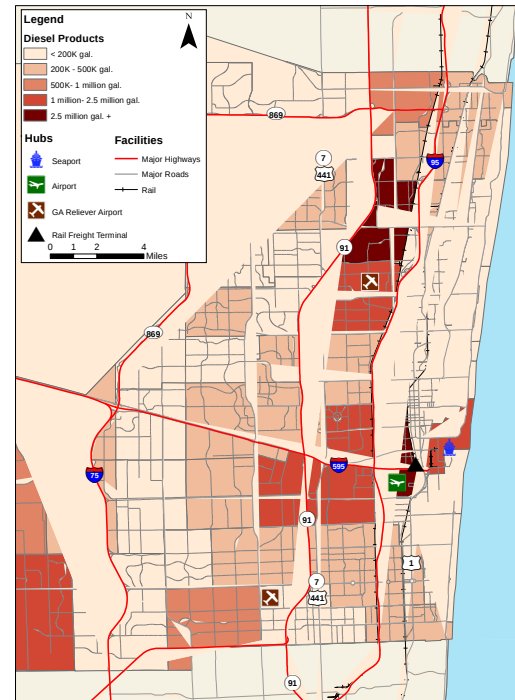
2013 Volume of Gasoline Products by Gallon,
From Port Everglades to Broward County by Zip Code



Terminal Supplier and Wholesalers Returns. Florida Department of Revenue. July 10, 2014

■ Broward Diesel by Zip

2013 Volume of Diesel Products by Gallon,
From Port Everglades to Broward County by Zip Code

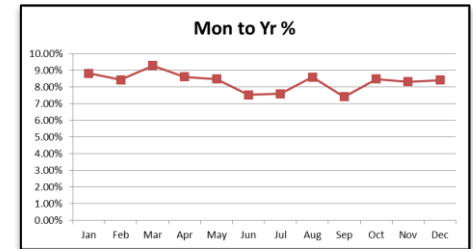
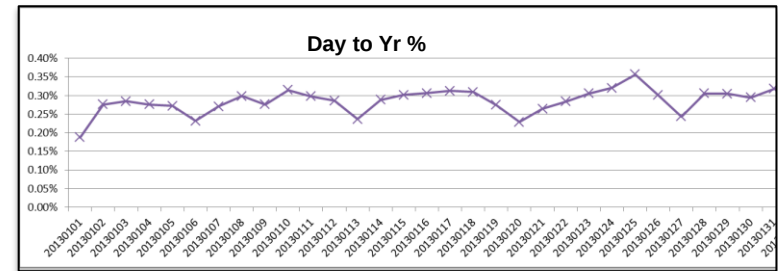


Terminal Supplier and Wholesalers Returns. Florida Department of Revenue. July 10, 2014

Data Analysis

- Volume to Truck Conversion

- Annual volume to daily volume
 - 2013 daily aggregation
 - Use 85th percentile = 0.31%
 - Min = 0.18%; Max = 0.36%
 - 2013 Monthly aggregation
- Daily volume to trucks
 - 9,000-gallon capacity per tanker truck
 - Assume 90% full



- Need truck routing...

Data Analysis

Product	Gallons	Origin	County	Location/Notes
Gasohol	86,076,285	FL		Unfound
Gasohol	38,813,383	T59FL2136		Port Tampa Bay
Gasoline	24,039,607	FL		Unfound
Low Sulfur Diesel/Undyed	11,863,839	FL		Unfound
Jet Fuel	11,294,371	68501547	Broward	Unfound
Gasohol	3,375,751	T65FL2565		Unfound
Gasoline	1,044,568	205600534		Unfound
Gasohol	884,672	T59FL2100		Port Tampa Bay
Gasohol	831,633	21650		Unfound
Low Sulfur Diesel/Undyed	817,327	T65FL2565		Unfound
Low Sulfur Diesel/Undyed	625,895	139200340	Miami-Dade	Storage Facility
Gasoline	565,129	T59FL2133		Port Tampa Bay
Low Sulfur Diesel/Undyed	455,499	068501547	Broward	Unfound
Gasohol	433,892	68736036	Broward	Storage Facility? See map
Low Sulfur Diesel/Undyed	411,604	139803816	Miami-Dade	Unfound
Gasoline	383,463	T65FL2679		Unfound
Gasohol	375,473	T59FL2102		JaxPort
Low Sulfur Diesel/Undyed	324,059	69809037	Broward	Unfound
Gasohol	311,611	68501704	Broward	Unfound
Low Sulfur Diesel/Undyed	287,950	T59FL2136		Port Tampa Bay
High Sulfur Diesel/Dyed	242,853	FL		Unfound
Gasohol	226,470	731173881		Unfound
Gasohol	209,986	T59FL2129		Central FL Pipeline - Orlando
Low Sulfur Diesel/Dyed	183,222	139200340	Miami-Dade	
Low Sulfur Diesel/Dyed	173,578	069809037	Broward	
Low Sulfur Diesel/Undyed	148,517	068736036	Broward	
Gasoline	144,483	069809037	Broward	
Low Sulfur Diesel/Undyed	126,549	068837976	Broward	
Low Sulfur Diesel/Undyed	117,229	508514012	Palm Beach	
High Sulfur Diesel/Dyed	102,738	068501547	Broward	

County	From PEV	Total Received	Market Share
Miami-Dade	839,312,016	1,035,127,978	81%
Broward	603,834,418	790,121,013	76%
Palm Beach	355,319,009	551,073,783	64%
Collier	85,324,142	133,342,313	64%
St. Lucie	57,747,193	145,485,082	40%
Martin	45,013,968	77,168,082	58%
Lee	41,647,991	291,591,192	14%
Monroe	25,833,853	49,747,216	52%
Indian River	12,012,624	75,813,395	16%
Okeechobee	9,178,026	32,837,599	28%
Hendry	7,138,784	22,932,901	31%
Glades	610,095	4,643,407	13%

Broward Fuel Origins Check

- Total 186 m gallons (24%) from outside PEV
- Many are reporting anomalies
- Other origins:
 - Port of Tampa Bay,
 - Central FL Pipeline,
 - JaxPort,
 - Storage in Miami-Dade, Georgia, South Carolina...

Data Analysis

- Suitability of using FDOR Data
 - Consistent record
 - Updated monthly basis
 - No cost
 - Available for many states
 - Data purpose is not for commodity analysis
 - Data anomalies

Project Info and Contacts

Website: <http://fdotd4-shrp2c20.com/>

Contacts

Min-Tang Li, FDOT District 4, min-tang.li@dot.state.fl.us

Peter Haliburton, Cambridge Systematics, phaliburton@camsys.com