FLORIDA

Freight, Logistics & Passenger Operations

FLORIDA TRANSIT DATA OVERVIEW
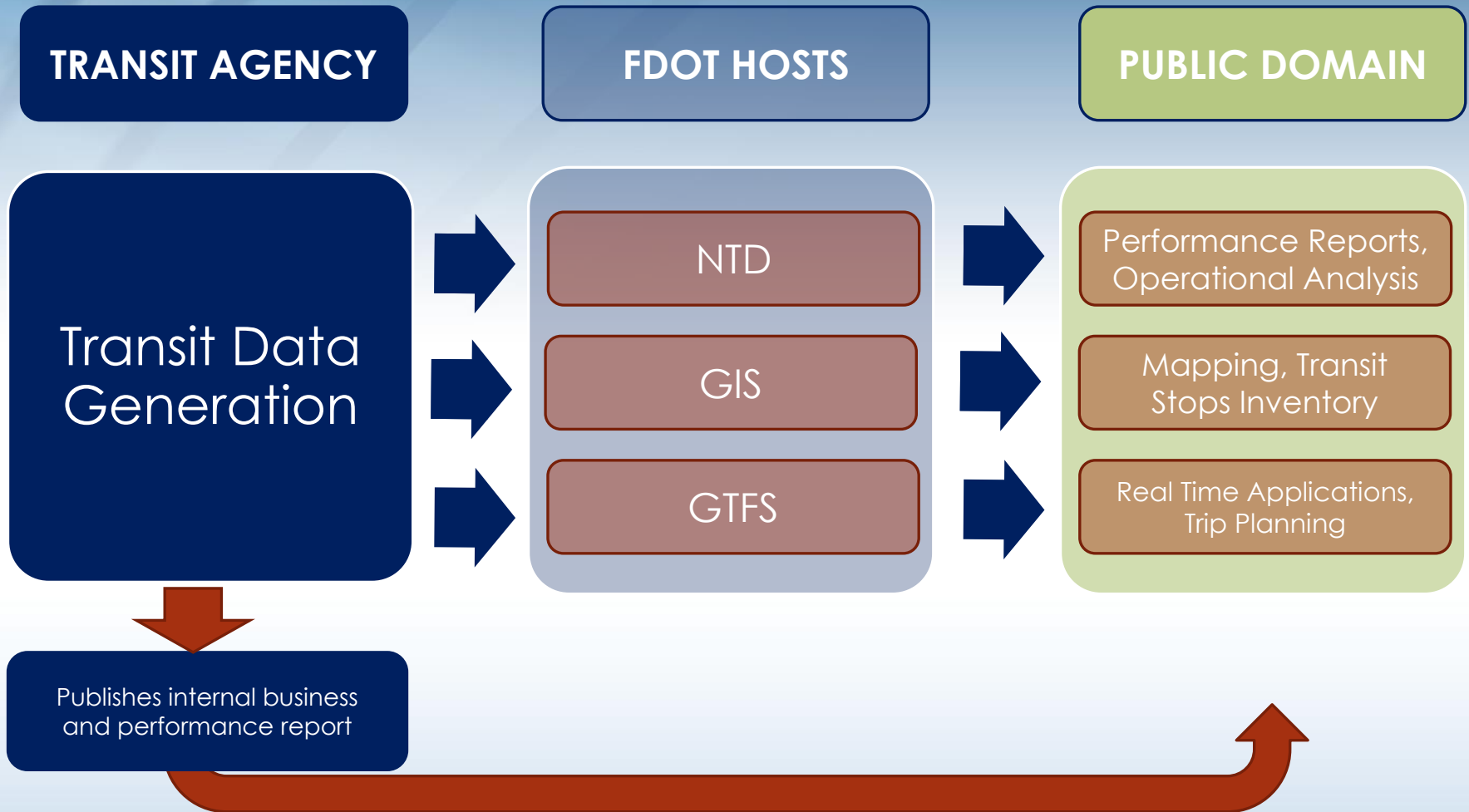
Diane Quigley, FDOT Transit Planning Administrator
FDOT DATA SYMPOSIUM
OCTOBER 23 -24 | ORLANDO, FL

STAKEHOLDER RESPONSIBILITIES

TRANSIT AGENCY

FDOT HOSTS

PUBLIC DOMAIN

Transit Data Generation

NTD

GIS

GTFS

Performance Reports, Operational Analysis

Mapping, Transit Stops Inventory

Real Time Applications, Trip Planning

Publishes internal business and performance report

OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

TRANSIT DATA GENERATION

Business/ Office Data

Service
Operations
Dispatch/ Scheduling
Trip Cost
Personnel
Other Financial

Vehicle Data

Ridership
Fares
Speed
Stop/vehicle locaton
Arrival status
Vehicle status

Maintenance Data

Vehicle condition
Maintenance logs
Safety
Fuel Usage
Trip Logs
Mileage

FDOT

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DATA COLLECTION TECHNOLOGIES

Automatic Vehicle Locator (AVL)

- Tracks the real-time location of AVL-equipped vehicles
- Collects and store data about bus arrival and departure times at specified locations.

Automatic Passenger Counters (APC)

- automates the collection of passenger boarding and alighting data

Electronic Fareboxes

- Can be used to obtain route- and system-level ridership data and classify the type of payment methodology used

SMARTCARDS/ELECTRONIC FARE CARDS

- Can be used to determine trip and rider characteristics and patterns

- Modes

- Routes

- Average Fares

- Origin Destinations

Brakewood, C. (2014). Evaluating the Impacts of Real-Time Transit Information in Tampa and Atlanta

VEHICLE MONITORING SYSTEMS

- Continuously measures, monitors, and reports the status of critical systems and components of your fleet

- Issues maintenance work orders before they become failures

- Collects critical information such as bus number, engine hours, mileage, fault code, and fault description order

Vehicle tiles: Up to date vehicle summary equiped with health bars

CLEVER DEVICES

ADVANCED PUBLIC TRANSPORTATION SYSTEMS (APTS)

- Develops strategies, promotes knowledge sharing, and supports the implementation of transit Intelligent Transportation Systems (ITS) activities

- Maintains an inventory of the APTS technologies used by transit agencies throughout the state

Agency	Current Status	APTS Category	Units 2005	Units 2006	Units 2007	Units 2008	Units 2009	Units 2010	Units 2011	Vendor Manufacturer	Technology	Funding Source (*)	Estimated Capital Cost	Estimated Operate Cost	First Year in Operation	Comn Satisf
Bay Town Trolley	Operational	Communications	72	72	72	72	44	44		Motorola, Electric, Ericcson	Radios (vehicle and handheld)	1, 2			2006	Good
Bay Town Trolley	Operational	Scheduling Software (demand response)	1	1	1	1	1	1		CTS	CTS	1,2,4			2006	Very Ple
BCT	Operational	APCs	0	55	99	151	200+			Digital Recorders (DRI)	Infrared Beams	3	420000		2005	Working well and the info to reass routes.
BCT	Operational	AVL	203	203			retired			Orbital TMS	SmartTrack (GPS)	4			1997	

NATIONAL TRANSIT DATABASE (NTD)

- Established in 1964 by Congress as a primary source for transit data, information, and statistics

- Transit agencies serving urban and rural areas submit annual and monthly reports

- Consists of a series of forms and declarations submitted by agencies to provide a summary of transit characteristics for the fiscal year

- Requirement of federal transit grants

2013 Reporting Year

NTD
National Transit Database

Urban Module
Reporting Manual

Office of Budget and Policy
September 2013

Annual Databases

RY 2012 Database | (Self-extracting xls)
RY 2012 Data Dictionary
RY 2012 Documentation - Questionable Data Items
RY 2012 Data Tables - Complete Set | (Self-extracting xls)
RY 2012 UZA Allocation

RY 2011 Database | (Self-extracting xls)
RY 2011 Data Dictionary
RY 2011 Documentation - Questionable Data Items
RY 2011 Data Tables - Complete Set | (Self-extracting xls)
RY 2011 UZA Allocation

RY 2010 Database | (Self-extracting xls) Updated April 2012
RY 2010 Data Dictionary
RY 2010 Documentation - Questionable Data Items
RY 2010 Data Tables - Complete Set | (Self-extracting xls)
RY 2010 UZA Allocation

Monthly Database

The two files located in this section will be replaced

Monthly Module Raw Data Release
Monthly Module Adjusted Data Release

Safety & Security Data

The two files located in this section will be replaced wit

Safety & Security Time Series Data
Safety & Security Major-Only Time Series Data

Annual Transit Profiles

To search for profiles you may enter the agency's NTD
State of California, enter California. The system will re

http://www.ntdprogram.gov/ntdprogram/data.htm

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FLORIDA TRANSIT INFORMATION SYSTEM (FTIS)

Developed specifically for Florida by FDOT

Combines individual NTD data files from multiple years into a single, standardized database

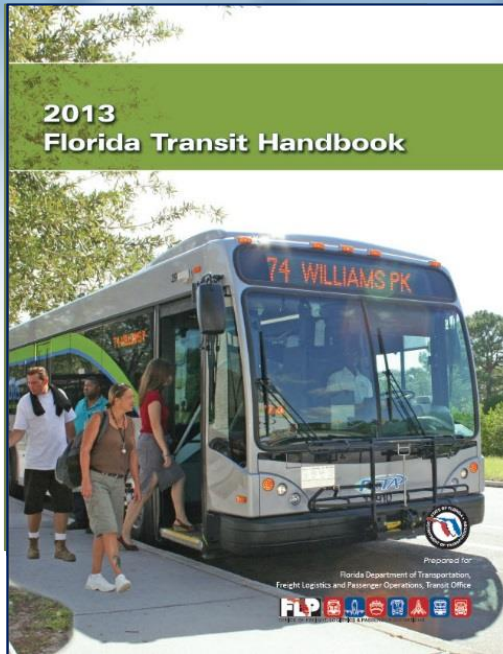Provides customized tools for quick and easy data retrieval, visualization, and analysis

Performance measure reporting and peer analyses

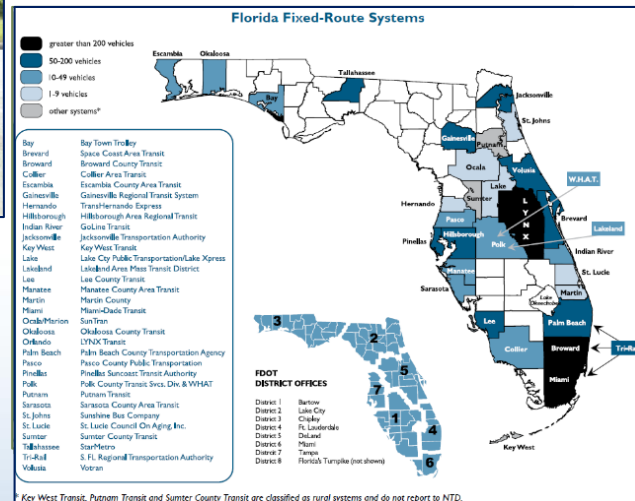Over 1,500 unique users worldwide in 11 countries

FLORIDA TRANSIT HANDBOOK

2013 Florida Transit Handbook

Prepared for
Florida Department of Transportation,
Freight Logistics and Passenger Operations, Transit Office

Summarizes annual system wide performance of 30 Florida fixed-route transit agencies

Provides individual statistics for each agency

Based on National Transit Data

Florida Fixed-Route Systems

greater than 200 vehicles
50-200 vehicles
10-49 vehicles
1-9 vehicles
other systems*

Bay	Bay Town Trolley
Brevard	Space Coast Area Transit
Broward	Broward County Transit
Collier	Collier Area Transit
Escambia	Escambia County Area Transit
Gainesville	Gainesville Regional Transit System
Hernando	TransHernando Express
Hillsborough	Hillsborough Area Regional Transit
Indian River	GoLine Transit
Jacksonville	Jacksonville Transportation Authority
Key West	Key West Transit
Lake	Lake Cty Public Transportation/Lake Xpress
Lakeland	Lakeland Area Mass Transit District
Lee	Lee County Transit
Manatee	Manatee County Area Transit
Martin	Martin County
Miami	Miami-Dade Transit
Ocala/Marion	SunTran
Okaloosa	Okaloosa County Transit
Orlando	LYNX Transit
Palm Beach	Palm Beach County Transportation Agency
Pasco	Pasco County Public Transportation
Pinellas	Pinellas Suncoast Transit Authority
Polk	Polk County Transit Svcs, Div. & WHAT
Putnam	Putnam Transit
Sarasota	Sarasota County Area Transit
St. Johns	Sunshine Bus Company
St. Lucie	St. Lucie Council On Aging, Inc.
Sumter	Sumter County Transit
Tallahassee	StarMetro
Tri-Rail	S. Fl. Regional Transportation Authority
Volusia	Votran

FDOT DISTRICT OFFICES

District 1	Bartow
District 2	Lake City
District 3	Chipley
District 4	Ft. Lauderdale
District 5	DeLand
District 6	Miami
District 7	Tampa
District 8	Florida's Turnpike (not shown)

* Key West Transit, Putnam Transit and Sumter County Transit are classified as rural systems and do not report to NTD.

Florida Transit System Summary – 2011 & 2012

System	Service Area Population		Service Area Population Density		Operating Expense		Operating Revenue	
	2011	2012	2011	2012	2011	2012	2011	2012
Bay Town Trolley	105,192	105,192	1,813.7	1,813.7	$2,850,940	$3,063,969	$657,639	$686,514
Broward County Transit	1,748,066	1,780,172	4,263.6	4,341.9	$106,485,996	$103,720,083	$37,047,337	$37,232,692
Collier Area Transit	333,032	323,785	220.1	162.1	$5,300,989	$5,779,387	$1,119,201	$1,195,029
Escambia County Area Transit	340,067	341,765	1,459.5	1,448.2	$7,163,929	$8,126,624	$1,360,212	$1,775,037
Gainesville Regional Transit System	187,781	160,000	2,470.8	2,105.3	$18,796,130	$20,684,101	$11,718,973	$17,686,401
Hernando (TransHernando Express)	173,234	86,848	362.4	1,378.5	$809,621	$761,406	$60,497	$63,332
Hillsborough Area Regional Transit	822,404	822,404	3,384.4	3,384.4	$59,762,580	$56,703,234	$14,254,048	$14,955,896
Indian River (GoLine)	114,380	143,696	653.6	665.3	$1,830,420	$2,074,312	$121,171	$71,353
Jacksonville Transportation Authority	874,673	838,815	3,157.7	1,893.5	$64,121,993	$68,952,345	$10,681,139	$12,858,024
Lake County Public Transp. (LakeXpress)	97,497	97,497	1,373.2	1,373.2	$1,692,299	$1,790,832	$210,839	$183,229
Lakeland Area Mass Transit District	110,000	110,000	1,428.6	1,428.6	$7,395,165	$6,849,656	$1,295,410	$1,303,456
Lee County Transit	443,696	459,381	3,666.9	3,533.7	$15,306,795	$15,472,193	$3,239,703	$3,470,019
LYNX Transit	1,837,359	1,837,359	723.9	723.9	$84,987,697	$86,274,125	$28,936,346	$29,932,149
Manatee County Area Transit	103,000	322,833	1,144.4	434.5	$6,436,798	$6,403,900	$1,131,784	$994,911
Martin County	146,000	146,000	262.6	262.6	$514,544	$523,011	$96,885	$0
Miami-Dade Transit	2,496,435	2,496,435	8,158.3	8,158.3	$409,976,850	$406,731,116	$110,518,110	$115,374,600
Okaloosa County Transit (The WAVE)	170,498	180,822	852.5	904.1	$1,132,295	$1,180,905	$137,302	$137,206
Palm Beach County Transportation Agency	1,268,782	1,268,782	3,476.1	3,476.1	$48,853,682	$49,397,584	$8,727,796	$9,703,243
Pasco County Public Transportation	464,697	464,697	623.8	623.8	$4,097,123	$4,284,245	$947,437	$1,099,739
Pinellas Suncoast Transit Authority	922,616	922,616	3,796.8	3,796.8	$50,648,033	$51,306,670	$13,727,691	$15,391,915
Polk County Transit Svcs, Div. & WHAT	153,924	153,924	3,206.8	3,206.8	$2,914,488	$2,665,590	$282,399	$344,502
St. Johns (Sunshine Bus)	190,039	195,823	316.7	326.4	$982,489	$1,132,809	$92,956	$98,017
St. Lucie County Council on Aging, Inc.	280,379	280,379	490.2	490.2	$1,393,528	$1,508,793	$145,706	$211,696
Sarasota County Area Transit	393,826	388,474	1,848.9	1,823.8	$12,958,806	$13,613,376	$1,377,627	$1,972,408
S. Florida Regional Transportation Authority	5,448,962	5,502,379	1,062.6	4,444.6	$54,746,746	$58,876,941	$11,422,592	$12,376,868
Space Coast Area Transit	554,354	554,354	1,283.2	1,283.2	$6,362,131	$6,365,083	$1,295,914	$1,291,587
StarMetro (Tallahassee)	162,310	162,310	1,591.3	1,591.3	$12,860,151	$13,719,098	$4,345,635	$4,270,414
SunTran (Ocala)	n/a	115,000	n/a	2,090.9	n/a	$2,198,584	n/a	$330,795
Volusia County dba VOTRAN	468,670	468,670	388.3	388.3	$11,636,153	$12,026,332	$3,046,028	$2,882,875

The data shown in this table represent closed-out, validated numbers as of September 2013. However, it is possible that some figures may be updated in the subsequent reporting year.

FLORIDA NTD TRAINING

Supplement to national NTD training and webinars sponsored by FTA

Includes the development of a NTD training manual

Free, twice a year

Includes comprehensive information on how to efficiently collect and report basic transit statistics to NTD

Provides updates on new FTA rules and federal mandates

AUTOMATED TRANSIT STOP INVENTORY MODEL (ATSIM)

Web-based system to collect data regarding the location, condition and and management of transit stop components (asset management tool)

Developed by FDOT for Florida transit agencies in Florida

Designed to collect data in the field on tablets and download to a database

Geo-locates bus stop facilities

Produces maintenance work orders and an ADA compliance checklist.

ATSIM

Stop Number: [ ] Go

Stop Map

Map | Satellite

Stop Information:

Location
Stop Number:	Stop Class:
Stop Name:	
On Street:	
At Street:	
Latitude:	Longitude:
Routes:	
Time Point:	Transfer Point:
Placement:	MidBlock:
Corner Location:	Distance:
Travel Direction:	Municipality:
Status:	Landmark:

Amenities
Shelter:	
Shelter Condition:	Shelter Type:
Seating Capacity:	Graffiti:
Total Width:	Total Depth:
Wheelchair Access:	Shelter Light:

TRANSIT BOARDING ESTIMATION AND SIMULATION TOOL
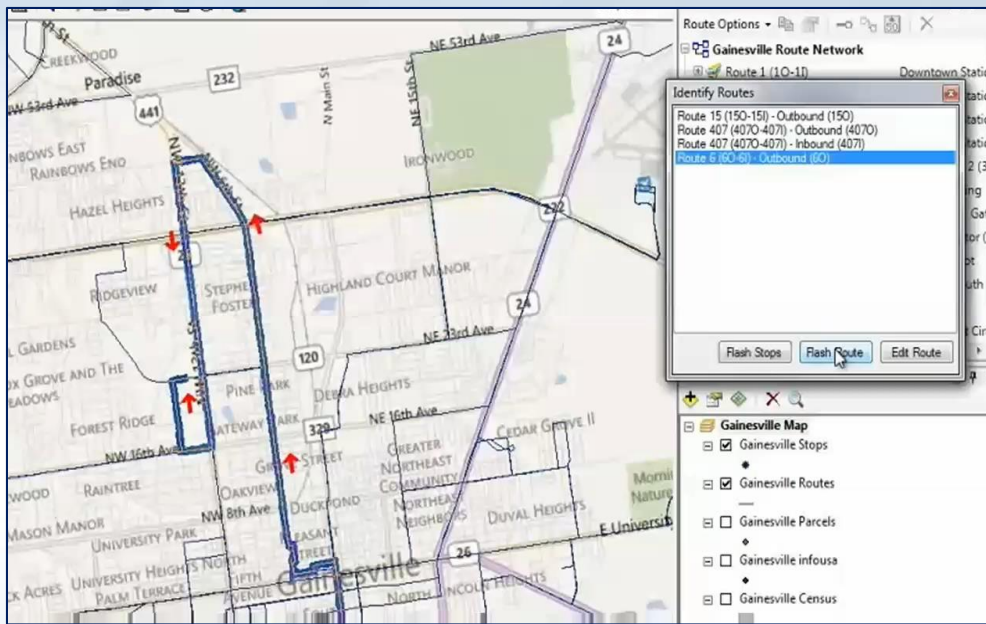
Multi-faceted GIS-based modeling, planning and analysis tool

Integrates socio-economic, land use, and transit network data into a unique platform for scenario-based transit ridership estimation and analysis

Other features parcel editing for long range planning, Title XI reports, Comprehensive Operational Analyses

GTFS input and data creator

FDOT also sponsors TBEST trainings for transit agencies

DISTRICT TRANSIT DATA WAREHOUSES

http://transport.cfgis.org/
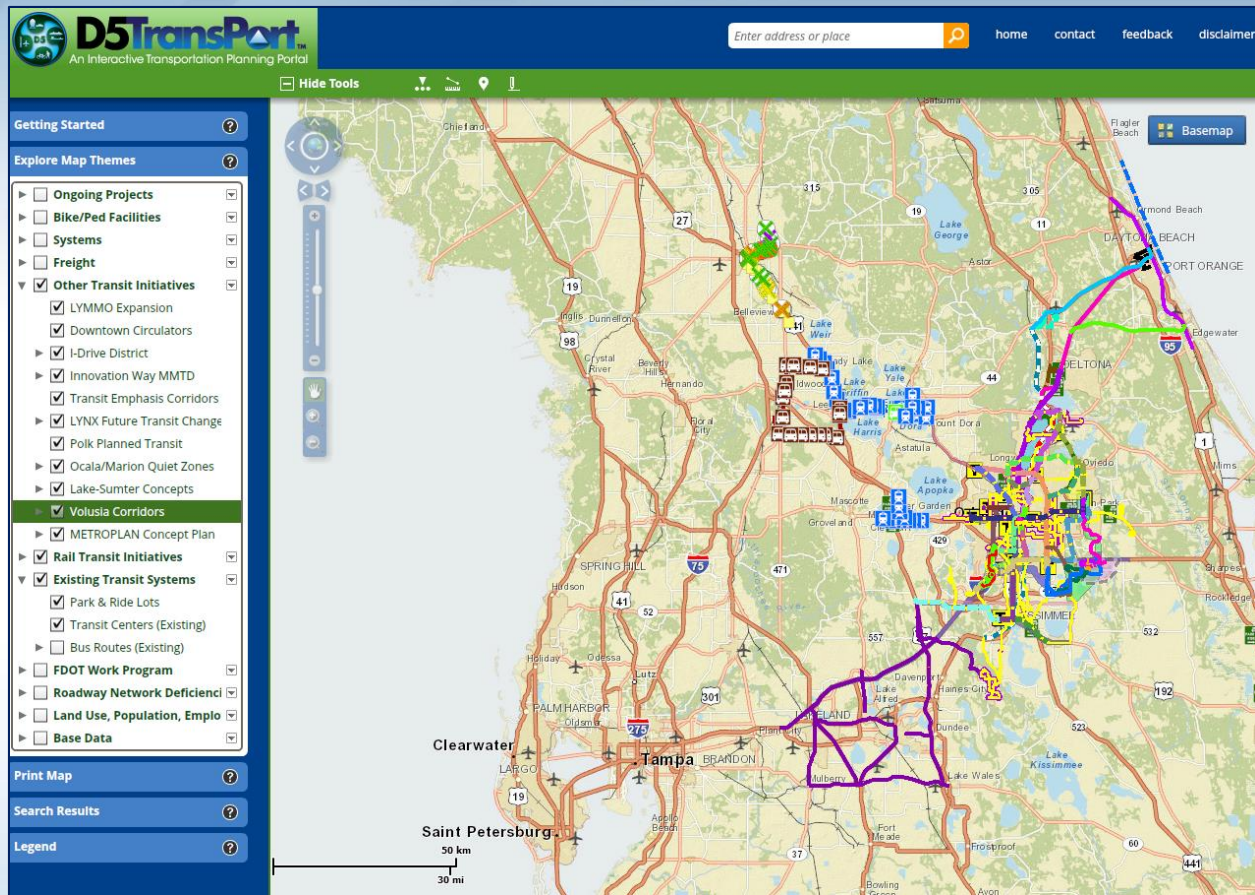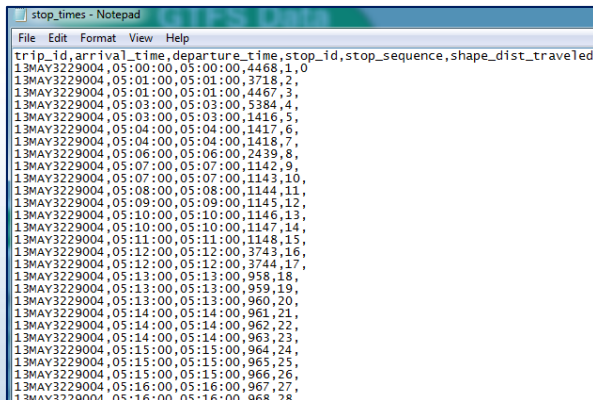
GENERAL TRANSIT FEED SPECIFICATION (GTFS) DATA

- Originally developed by Google

- Defines a common format for public transportation schedules and associated geographic information

- Typically generated by scheduling and other transit software

- GTFS "feeds" allow public transit agencies to publish their transit data – data exchange

- Used to develop real time applications and public uses

PRIVATE SECTOR APPLICATIONS

- **Online Interactive Route Finder**

  - Illustrates the routes and stops, including landmarks along a specific route

- **Real Time Transit Information**

  - Shows the exact locations of busses serving each route

  - Provides bus arrival/ departure information

- **Trip Planner**

  - Provides a step by step trip guide using transit

    - Google Maps: Transit agency's trip planning tool is powered by Google
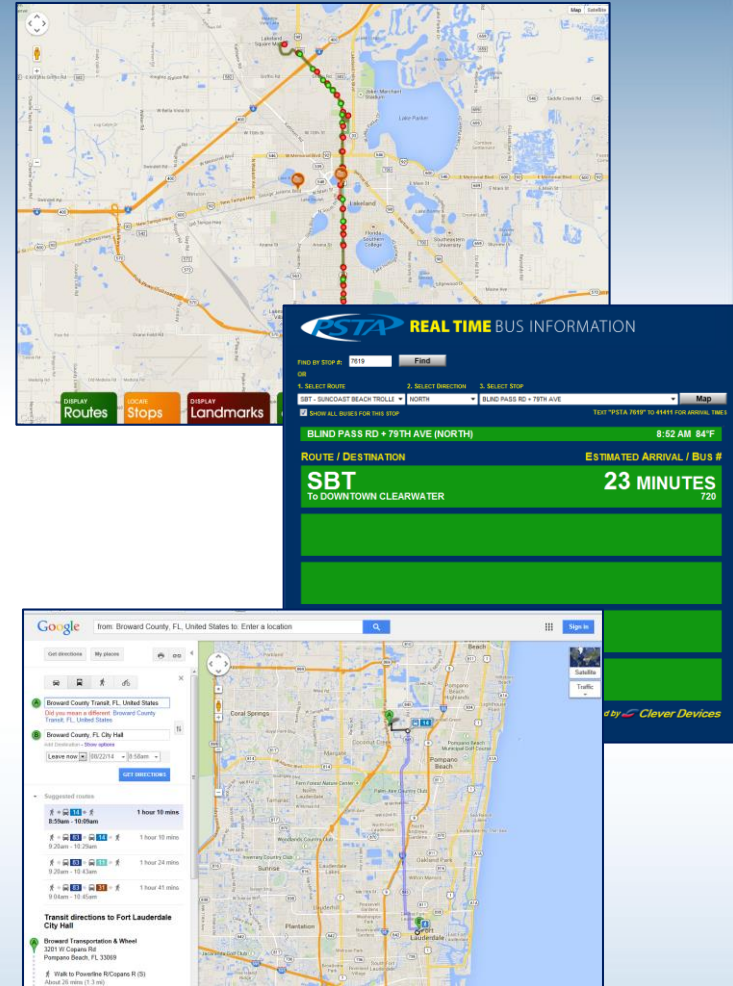
TRANSIT OFFICE GTFS PROJECT

To better assist Florida transit agencies in developing and publishing and understanding the applications of GTFS data, the FDOT Transit Office plans to:

- Investigate methods in creating GTFS data

- Publish GTFS Instructional Manual

- Conduct GTFS Development training

- Launch 3 pilot projects encompassing small, medium, and transit agencies who currently have no GTFS data

OFFICE OF FREIGHT, LOGISTICS & PASSENGER OPERATIONS

FUTURE TRANSIT TECHNOLOGIES AND DATA RESEARCH

- Autonomous Vehicles

- Connected Vehicles

- V2V, V2I and V2D
  - dynamic wireless exchange of data between nearby vehicles that offers the opportunity for significant safety improvements

- Real-Time Data Capture and Management

- Dynamic Mobility Applications