A Quick Overview of Ongoing FDOT Data Initiatives

SE Florida FSUTMS Users Group Meeting

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FDOT Ongoing Known Data Initiatives

- Central Data Warehouse System
- D4 Data Plan
- Regional Transit Database/Tools
- Mobility Performance Measures

Central Data Warehouse (CDW) Example Contents

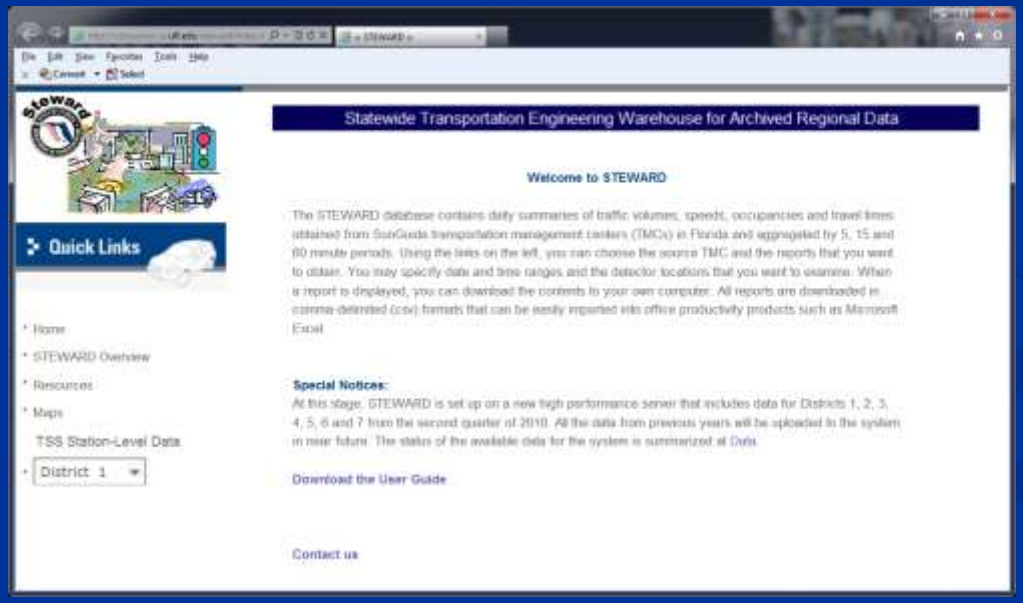
- Traffic Data
  - Point detectors (speed, volume and occupancy)
  - Probe detectors (speed such as INRIX)
- Transit Data
- Vehicle Infrastructure Integration (VII, previously known as IntelliDrive) Data

Central Data Warehouse (CDW) Systems

- 2003, Prototype: Statewide Transportation Warehouse for Archived Regional Data (STEWARD)
- 2012, Regional Integrated Transportation Information System (RITIS)
- 2012, ITS Data Capture and Performance Management (ITSDCAP)
- 2012, Integrated Regional Information and Decision Support System (IRISDS)

STEWARD

- Developed by University of Florida and available at http://cdwserver.ce.ufl.edu/steward/index.html
- Contains daily summaries of traffic volumes, speeds, occupancies and travel times obtained from SunGuide at 5, 15 and 60 minute intervals.



RITIS

- Developed by University of Maryland and available at https://www.ritis.org/login
- The Department's central data warehouse system to host the traffic and event data collected at transportation management centers (TMC) across the state.

ITSDCAP

- Developed by Florida International University
- Objectives
  - Utilization of data from ITS and other sources to support performance measurements of transportation systems
  - Provision of data from ITS and other sources to support transportation system modeling
  - Development of assessment capabilities within ITSDCAP to assess the benefits of ITS applications based on ITS data
  - Support the discovery of different relationships and associations of attributes, utilizing data mining and visualization methods
  - Demonstration of the use of the developed environment.

IRISDA

- Developed by Florida International University
- 1st phase as a proof of concept to estimate and measure
  - Incident Severity
    - Incident Duration
    - Average Incident Delay (min/veh)
  - Diversion Rate
    - Non-incident day volume
  - Travel Time via Transit AVL Data
- 2nd phase is expected to be carried out in the fiscal year of 13/14

D4 Data Framework

- Purpose: Assemble data needed for transit corridor and PD&E studies
- Background
  - Types of Data: As-builts, traffic counts, transit boards/alights, ROW maps, highway speeds, signal timing, HNETs/TNETs, ZDATA, parking, land use, engineering data, etc.
  - Data all over the place, varying quality, time consuming to access and download, difficulty accessing, insufficient metadata (data age, data accuracy, how to use data)
- Collaborative between PL&EM, Traffic Operations & Program Management in FDOT--D4
- Develop a data framework for assembling data from various sources and understand data limitations and workarounds

D4 Data Framework Pilot

Data		Planning	Operations
Categories	Elements		
Traffic Volumes	Turning Movement counts	c	c
	Traffic Counts - Portable	n	c
	Traffic Counts - Permanent	c	c
	Classification Counts	c	
	Traffic Counts - ITS	c	c
	Traffic Counts - Classification	c	c
	Bicycle and Ped Vol	c	n
	Bicycle and Ped Crossing	c	n
Speed	Spot Speed	n	c
	Posted Speed	c	c
	Link Average Speed	c	c
Travel Time	Link Travel Time	c	n
	Segment Travel Time	c	n
Signal	Cycle Length	n	c
	Offset	n	c
	Coordination	n	c
	Delay	n	c
	Timing	n	c
	Phasing	n	c

Regional Transit Database/Tools

- D5 TransPort
- D7 Regional Public Transportation GIS Architecture and Data Model
- D4 Regional Transit Database

D5 TransPort

- To host and disseminate transit related information and allow mapping and spatial analysis of transit systems to inform decision making.
- To support development of coordinated planning and implementation strategies with the regional transportation partners to ensure consistency of future plans of various transit agencies within the District.

Refer to TransPort Functionalities & Navigation Guide for info

D7 Transit Database

- Create a common data format for all transit agencies in a region
- Create software to automatically retrieve transit data from regional agencies and import into FDOT District 7 geodatabase
- Leverage existing General Transit Feed Specification (GTFS) data and process used by Google Transit
- Adding new fields to GTFS data

D4 Regional Transit Database

- Transit PD&E projects
- Data elements for successful transit planning
- Enhance the existing data acquisition, analysis and sharing system for transit planning in the region
- Kick-off on 7/1/2010 jointly by PL&EM & OMD

Coordination & Partnership

- Transit Agencies
- MPOs
- FDOT CO

Planned Transit Data Components

- Ridership
- Transit Route & Network Characteristics
- Service Area Characteristics
  - Socioeconomic and Land Use Characteristics
  - Geographic and Topographic Features
  - Community Policies
  - Energy Considerations
  - Safety and Security
- Operating Cost and Revenue Statistics

Transit Agency Visits

9-29-2010
MDT

10-14-2010
Palm Tran

10-5-2010
Tri-Rail

2-24-2011
BCT

Status & Progress

- Acquire Transit Ridership Data
- Develop Tool for Data Sharing
- Additional Coordination
  - 4/11/2012, PTAC
  - 5/17/2012, FDOT CO
  - 5/22/2012, Demo & Open for Comment
  - 1/23/2013, D7 on Regional Public Transportation GIS Architecture and Data Model
  - 2/25/2013, IRISDS
  - 2/26/2013, RITIS
  - 3/14/13, TransPort

Data Received (as of 05/03/2013)

	Ridership- Farebox[1]		APC	GIS		Data Resolution		
	Monthly	Daily	Daily	Facility & Amenity	Route/ Stops	Route	Bus[2]	Run[2]
BCT	●	●		●	●	●		
MDT	●		●	●	●	●	●	●
PalmTran	●		●	●	●	●		
Tri-Rail	●			●	●	●		

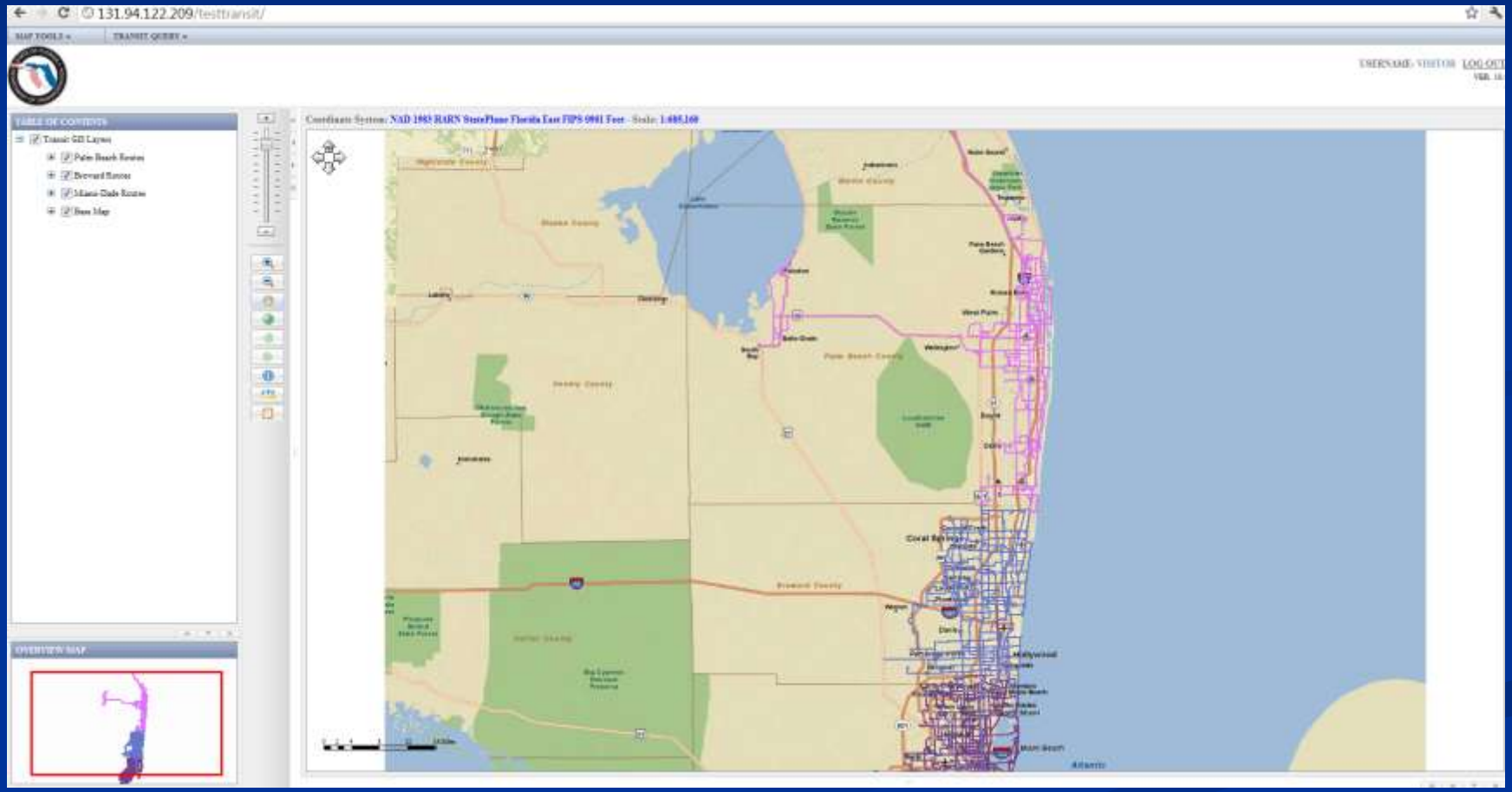
[1] Ridership includes Community Shuttle data from BCT and Shuttle Buses from Tri-Rail

[2] Bus and Run information comes from the APC system on a daily basis

Next Steps

- Short-Term
  - Continue to maintain/update database
  - Accommodate comments as resources allow
  - Coordinate with D5/D6/D7 and the respective transit agencies to develop/expand database to incorporate other transit data components
- Long-Term
  - Request and acquire funding support from other public agencies such as MPOs, RPCs, etc.
  - Develop funding mechanism to self-sustain the program

D4 Transit Database Tool



http://131.94.122.209/testtransit/

D4 Contact

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Performance Measures

- Per Moving Ahead for Progress in the 21st Century Act (MAP-21), performance measures will need to be established for
  - Interstate and NHS
  - Bridge Conditions
  - Injuries and Fatalities
  - Traffic Condition
  - On-road Mobile Emissions
  - Freight Movement on the Interstate
- States/MPOs set performance targets

CO TranStat

Statewide Mobility Performance Measures Team

Generally Acceptable Mobility Performance Measures for Metropolitan Planning Organizations

4/25/13

	MODE	QUANTITY	QUALITY	ACCESSIBILITY	UTILIZATION
People	Highway	**Vehicle miles traveled** Person miles traveled Vehicle miles traveled per driver Single occupant vehicle miles traveled 2+ occupant vehicle miles traveled	**% travel meeting LOS criteria** % miles meeting LOS criteria **Travel time reliability** Travel time variability **Delay** Average travel speed	% population within 30 min of jobs Commuter assistance	**% miles severely congested** % travel severely congested Hours severely congested Vehicles per lane mile
	Transit	Ridership Passenger trips Passenger miles traveled	Average headway	% population with transit service	
	Pedestrian		Level of Service (LOS)	% sidewalk coverage	
	Bicycle		Level of Service (LOS)	% bike lane/shoulder coverage	
Freight	Highway	Combination truck miles traveled **Truck miles traveled**	**Travel time reliability** Travel time variability **Truck delay** Truck average travel speed Truck LOS		**% miles severely congested** Vehicles per lane mile
	Aviation	Tonnage		Highway adequacy (LOS)	
	Rail	Tonnage		Highway adequacy (LOS)	
	Seaport	Tonnage Truck equivalent units		Highway adequacy (LOS)	

BOLD = FDOT Recommended MAP-21 Mobility Performance Measure

Q & A

Thank you.