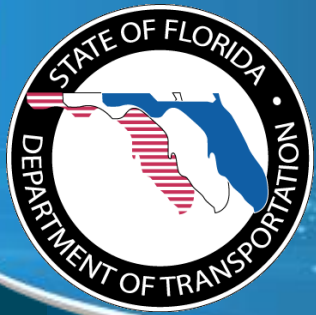


Change Management Board Meeting

Tuesday, March 5, 2013

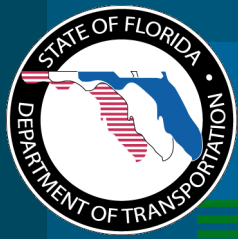
Video Conference: CO- Burns Video Bridge 3

Audio Only: 850 - 410 - 5666



Welcome and Call for Quorum

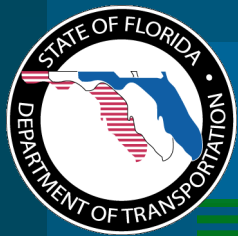
Javier Rodriguez, CMB Chairman



Agenda



Time	Item	Lead
1:30 – 1:35	Welcome and Call for Quorum	Javier Rodriguez
1:35 – 1:40	Previous Meeting Recap and Action Item Review	Javier Rodriguez
1:40 – 1:50	Intelligent Transportation Systems (ITS) Wide Area Network (WAN) Update	Randy Pierce and Frank Deasy
1:50 – 2:00	Release 6.0 Schedule	Arun Krishnamurthy & Robert Heller
2:00 – 2:20	Architecture Update/ D5	Jeremy Dilmore & Arun Krishnamurthy
2:20 – 2:40	SunGuide and Lonestar	Arun Krishnamurthy
2:40 – 3:00	Video on Desktop	Clay Packard
3:00 – 3:10	Break	



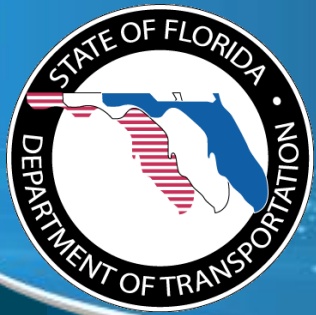
Agenda



Time	Item	Lead
3:10 – 3:30	Traffic Signals	Arun Krishnamurthy & Pete Vega
3:30 – 3:50	Wrong Way Detection	Arun Krishnamurthy
3:50 – 4:05	Construction Events in SunGuide and 511	Clay Packard
4:05 – 4:15	Priority Items by District	Arun Krishnamurthy
4:15 – 4:20	Review Action Items	Javier Rodriguez

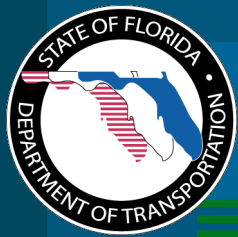
CMB agenda, slides, and attachments posted here:

http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/CMB.shtm



Previous Meetings Recap and Action Items Review

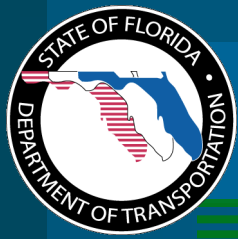
Javier Rodriguez, FDOT



November 2012 Action Items



1. CO to follow-up on HAR Vendor
2. CO to evaluate the 2,000 remaining alerts
3. CO to continue research on PostgreSQL and Cloud computing
4. Co to further investigate SunGuide installer improvement
5. Co to further develop the concept / solution to the multiple agency Road Ranger coordination
6. Co to provide list of functional report changes

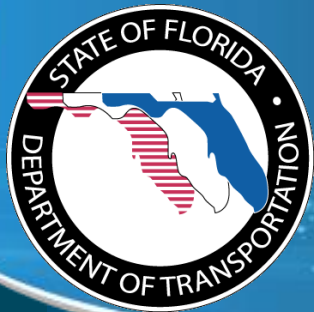


November 2012 Action Items

(contd)

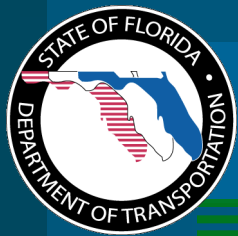


7. SwRI to help Districts send up historical event and gap detector data to RITIS
8. SwRI to look into hot fix for FP 1559 for 5.1.1
9. CO to provide Pete with 2 Blue TOAD plugins
10. CO to coordinate a concept discussion for low visibility warning system



ITS Telecommunications Update

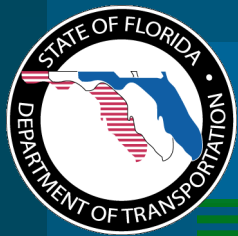
Randy Pierce, FDOT
and
Frank Deasy, Telvent



ITS Telecommunications Update



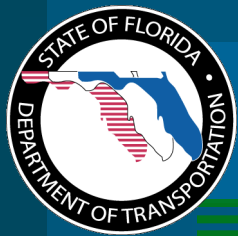
- Connecting D1 & D7
 - ITS WAN equipment operational
 - UniCast connectivity is operational
 - MultiCast connectivity in process
- Connecting D3 RTMCs Tallahassee
 - Tallahassee RTMC fiber connection in process
- **FTE RTMC Pompano**
 - FTE switch configuration and connection to ITS WAN still in process
 - Fiber outage on mainline being addressed by FTE
 - Need date for completion from FTE



ITS Telecommunications Update



- **FHP CAD**
 - Available to Districts connected to ITS WAN
- **MultiCast Re-Addressing**
 - Districts should re-address their multicast devices now to resolve any overlapping addresses
 - D4 completed their multicast addressing
 - D5 & D6 have committed to multicast readdressing and are in process
 - What is the status of this effort in D1, D2, D3, D7, FTE and MDX?
 - VAS can then receive MultiCast video without the need for further re-addressing
- **FL-ATIS & VAS**
 - Replacing dedicated circuits with ITS WAN connectivity

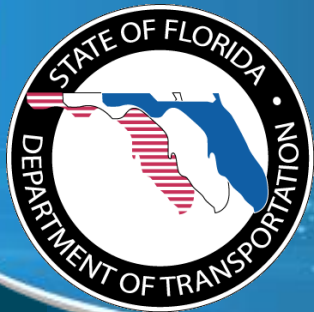


ITS Telecommunications Update



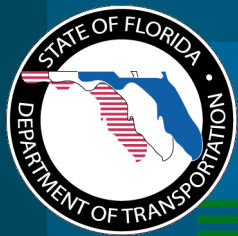
- **QUESTIONS?**

- **Randy Pierce & Frank Deasy**
- **Randy.Pierce@dot.state.fl.us**
- **Frank.Deasy@dot.state.fl.us**



SunGuide Release 6.0 Schedule

Arun Krishnamurthy, FDOT
and
Robert Heller, SwRi

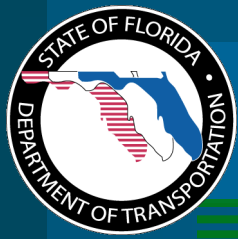


SunGuide Release 6.0 Scope



- SQL Server Database Compatibility & Database ID Modification
- Color DMS
- Scheduling Feature in SunGuide for travel times & camera
- Multiple Footprints

<http://www.sunguidesoftware.com/releases/future-modifications>



Schedule

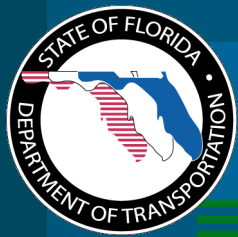


**Release 6.0 media shipped end of June
(6/25)**

**Software Development and Dry Run
Completed – 4/19**

Software Testing

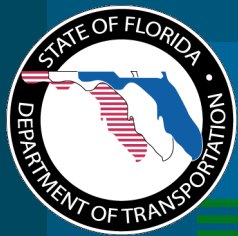
- Factory Acceptance Testing: 4/22 to 4/25
- Independent Verification & Validation (Multiple Iterations): 5/13 to 6/21



Environment Preparation

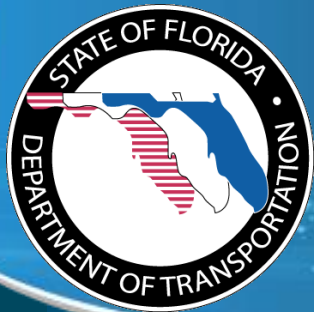


- **Database Purchase**
 - If you choose to purchase SQL Server, please plan to purchase prior to end of June.
 - We need advance notice if you plan to not use Oracle so we can transition those licenses to OIS or other Departments.
- **Any concerns about SQL Server capability?**
 - Demo on March 19.
- **Any interest in PostgreSQL?**
 - Analysis underway, preliminary analysis indicates no or little changes needed to make it compatible.



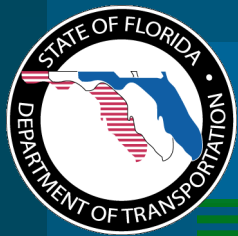
QUESTIONS?





Architecture Update / D5

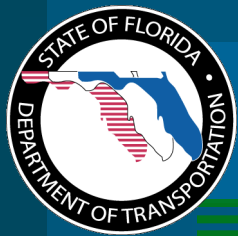
Jeremy Dilmore, FDOT
and
Arun Krishnamurthy, FDOT



Reasons for the Review



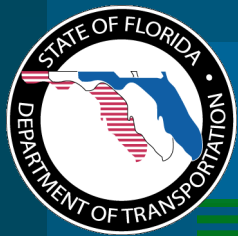
- **New to the job**
- **Several major projects involving ITS**
- **Renewed emphasis in Systems Engineering from FHWA**
- **Several ITS Local Area Projects**



Methodology



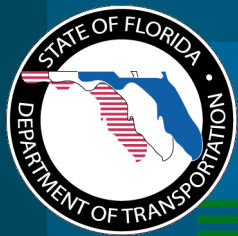
- Reviewed stakeholder inventory-underway
- Review with Local Agencies
- Used consultant resources to refine data flows
- Require architecture updates with each project



Findings



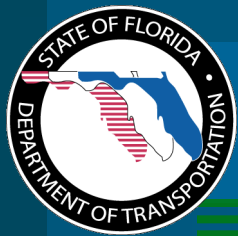
- **Older projects with retiring subsystems still included**
 - iFlorida
- **Connections to Local Agencies made outside of projects missing**
 - Flagler County/City of Palm Coast
- **More recent projects missing**
 - I-4 Ultimate/I-4 Ultimate Extensions
- **Data duplicated**
 - Lynx, FDOT/Lynx
- **Project responsibilities shifted**
 - Sunrail



Findings (cont.)



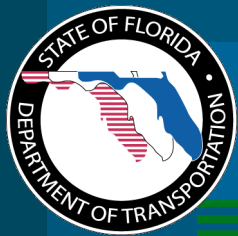
- **Many unknown connections shown**
 - Checking firewalls/fiber documentation to determine if connections are in place
- **Identified a need for training**
 - Project Managers not familiar with D5 Architecture and how to utilize it
 - Local Agencies depending on our PMs for guidance



Detailed proposed changes



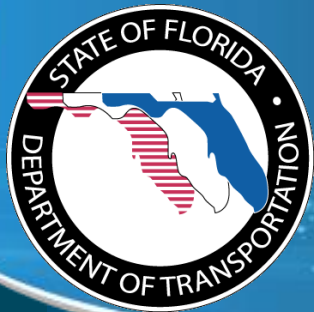
- PDF of changes to stakeholder inventory shows details
- Includes change to D5 and local agencies
 - Still to review with local agencies



Conclusion

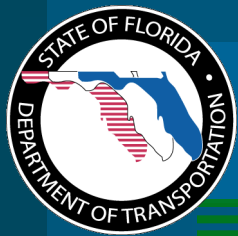


- **Several changes being proposed**
- **Does not represent new deployments of technology**
- **Effort is updating current configurations and those in PD&E**
- **More to come in terms of details as work with Local Agencies and work on data flows continues**
- **Recognize the need to create a process for project deployment (LAP and DOT) as well as in-house work to update the architecture regularly**



Integration of TxDOT and FDOT ATMS Software

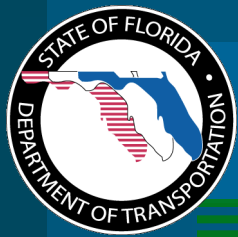
Arun Krishnamurthy, FDOT



What?



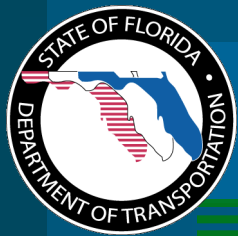
- **Make the FDOT and TxDOT ATMS software identical.**
- **Sharing the same software is common in the industry.**



Why?



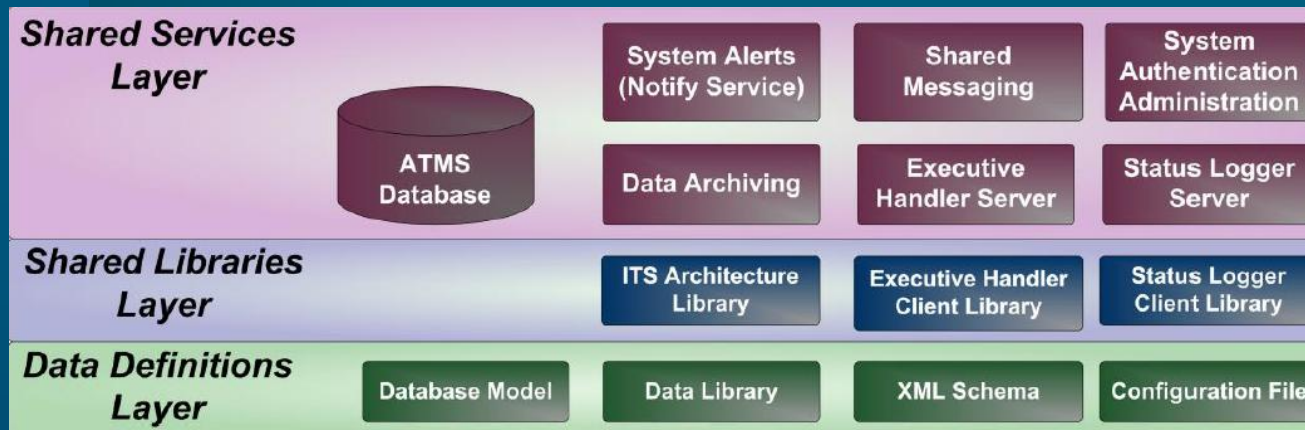
- **Reduced Development Cost - Makes modifications by one agency available to the other at NO COST.**
- **Reduced Support Cost – Makes defects fixed in one software easily transferrable to the other.**
- **Example:**
 - We are spending \$125k to use TxDOT's version of enhanced user permissions (we also added new features).
 - We spent \$300k for SQL Server that TxDOT already had.
 - We plan to spend \$500k to move Admin Editor into SunGuide as TxDOT has.



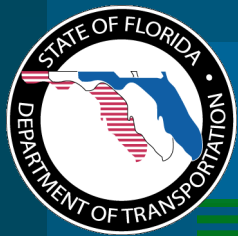
How?



- Harmonize low level software.



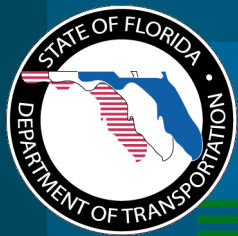
- Then tackle one or more subsystem at a time ... DMS, CCTV, TSS.



Schedule ?



- FDOT and TxDOT reviewing each others software to gain better understanding.
- We can start the shared services first if approved by CMB.

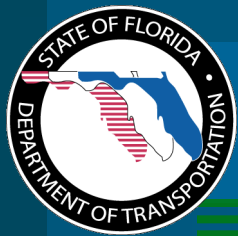


Impact to the state



- **None**

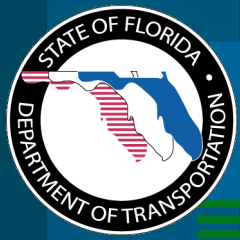
- All enhancements go through the CMB and the features that we agree at the state-level will be available in SunGuide.
- As the code base is the same, all unwanted features will be in the software but configurable.
- We could also make a custom installer that does not include these unwanted features.



Benefit from this effort

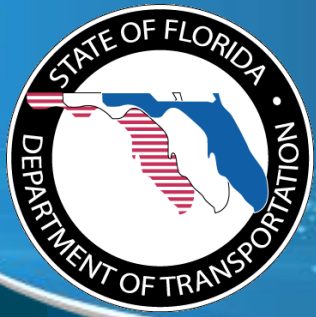


- FDOT's annual software expense ~ \$ 0.8 Million in development.
- TxDOT's annual software expense ~ \$ 1 Million in development
- So even if we spend money to integrate, it will make for a good benefit cost ratio.



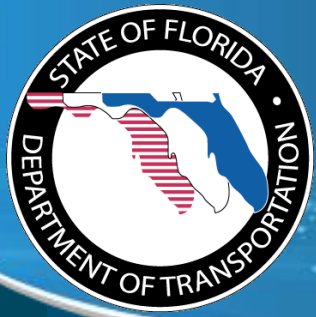
Questions?

APPROVED ?

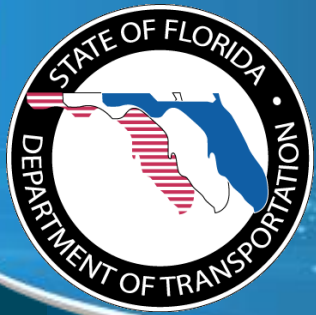


Video on Desktop

Clay Packard, Atkins

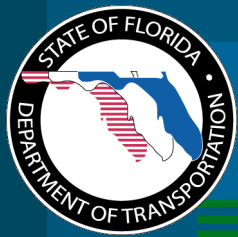


Break



Traffic Signal Interface

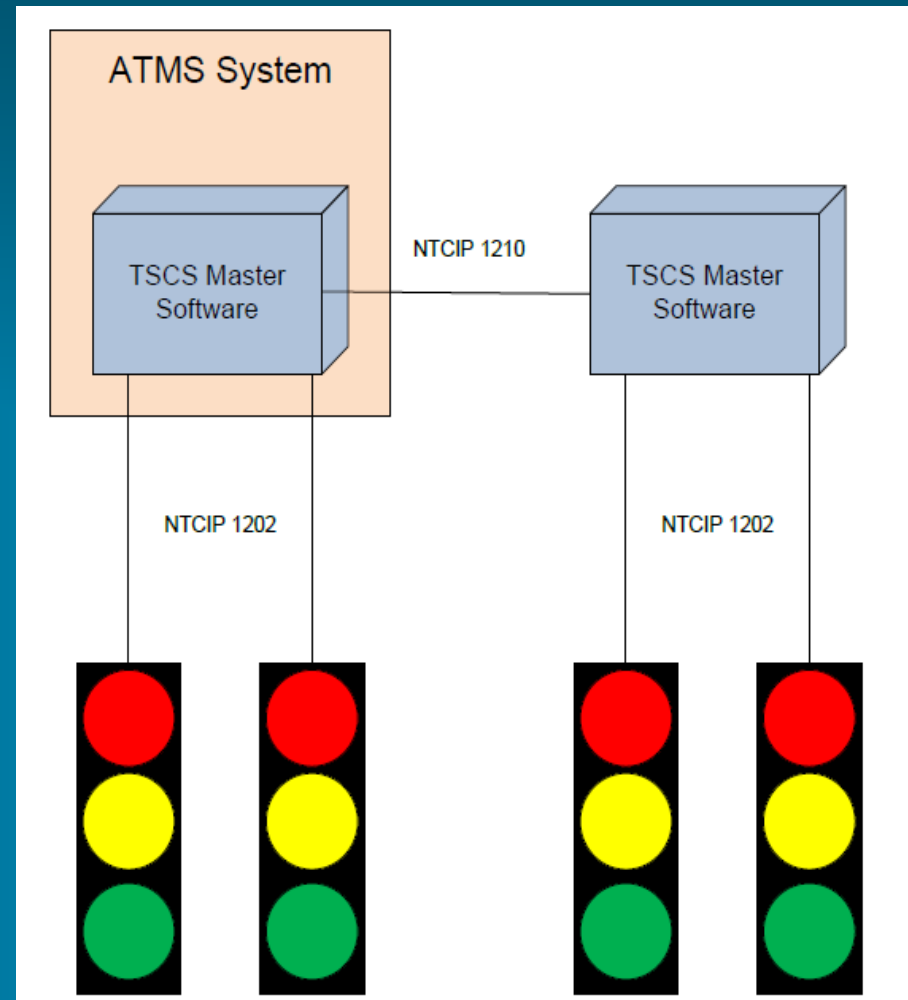
Arun Krishnamurthy, FDOT
and
Pete Vega, FDOT

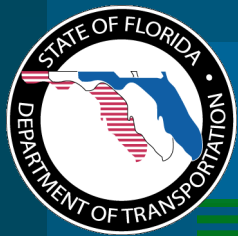


Existing Traffic Control Systems



- Current ATMS systems have the traffic signal control built into the ATMS
- NTCIP
 - 1202 - master to signal
 - 1210 - master to master
- Communicate to traffic signal controllers via NTCIP
- Expensive to implement

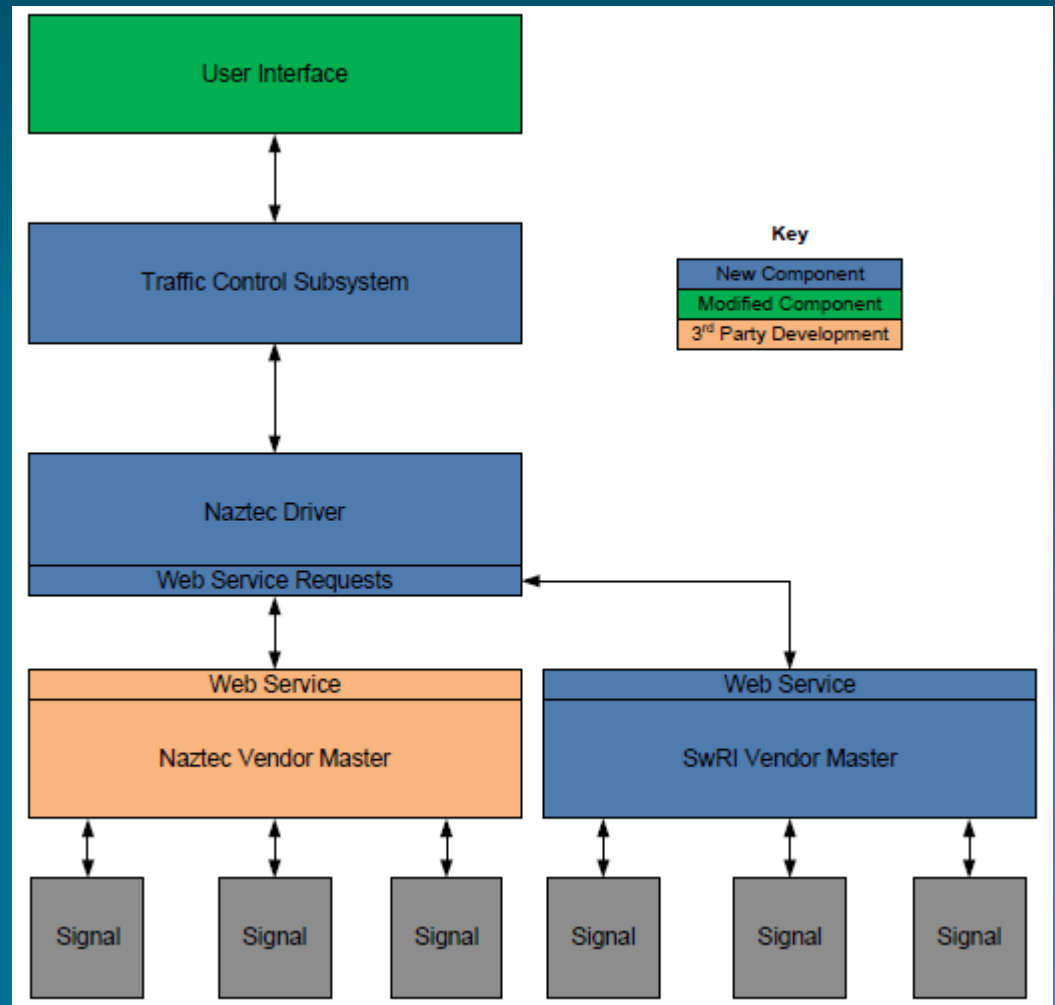


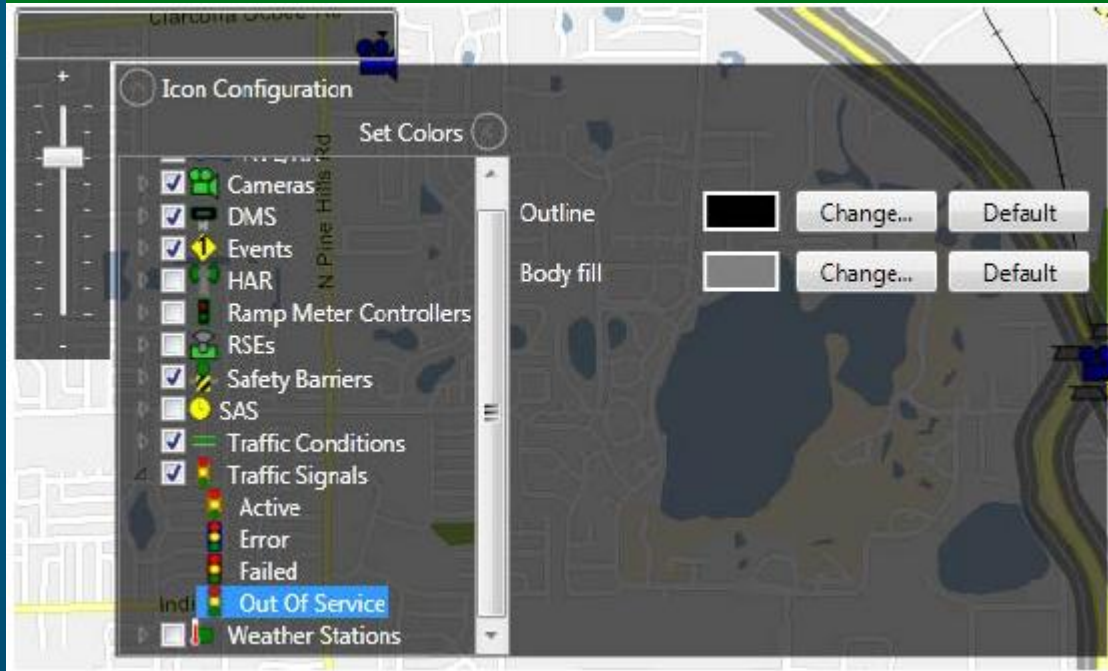


SwRI Internal Research

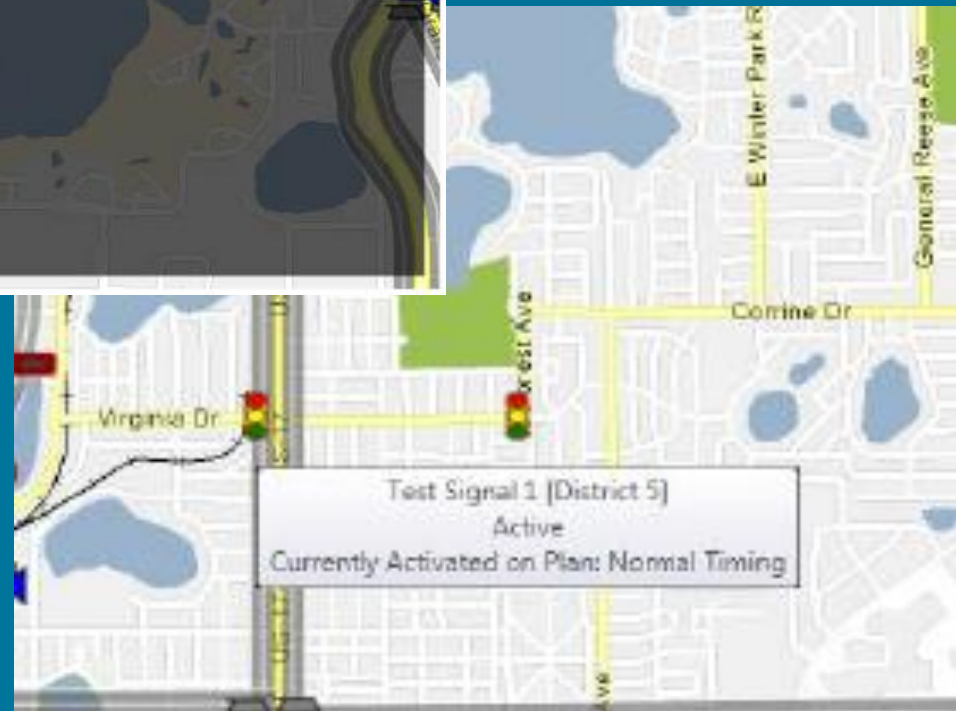


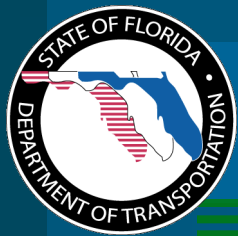
- New Traffic Control Subsystem
- Leverage existing Vendor Master packages





- Standard User Configuration
- Icons with status and current active plan

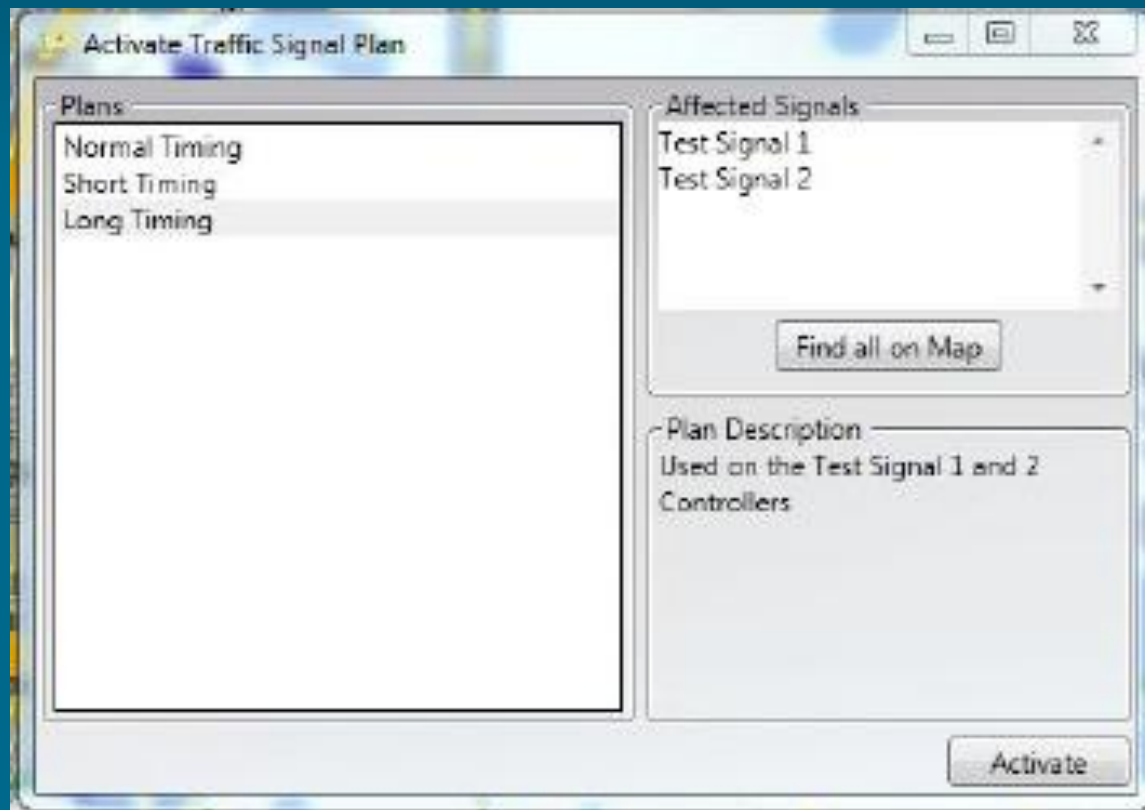


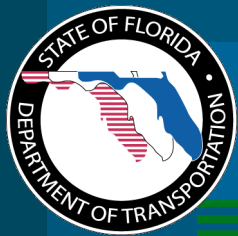


New Timing Plan Activation

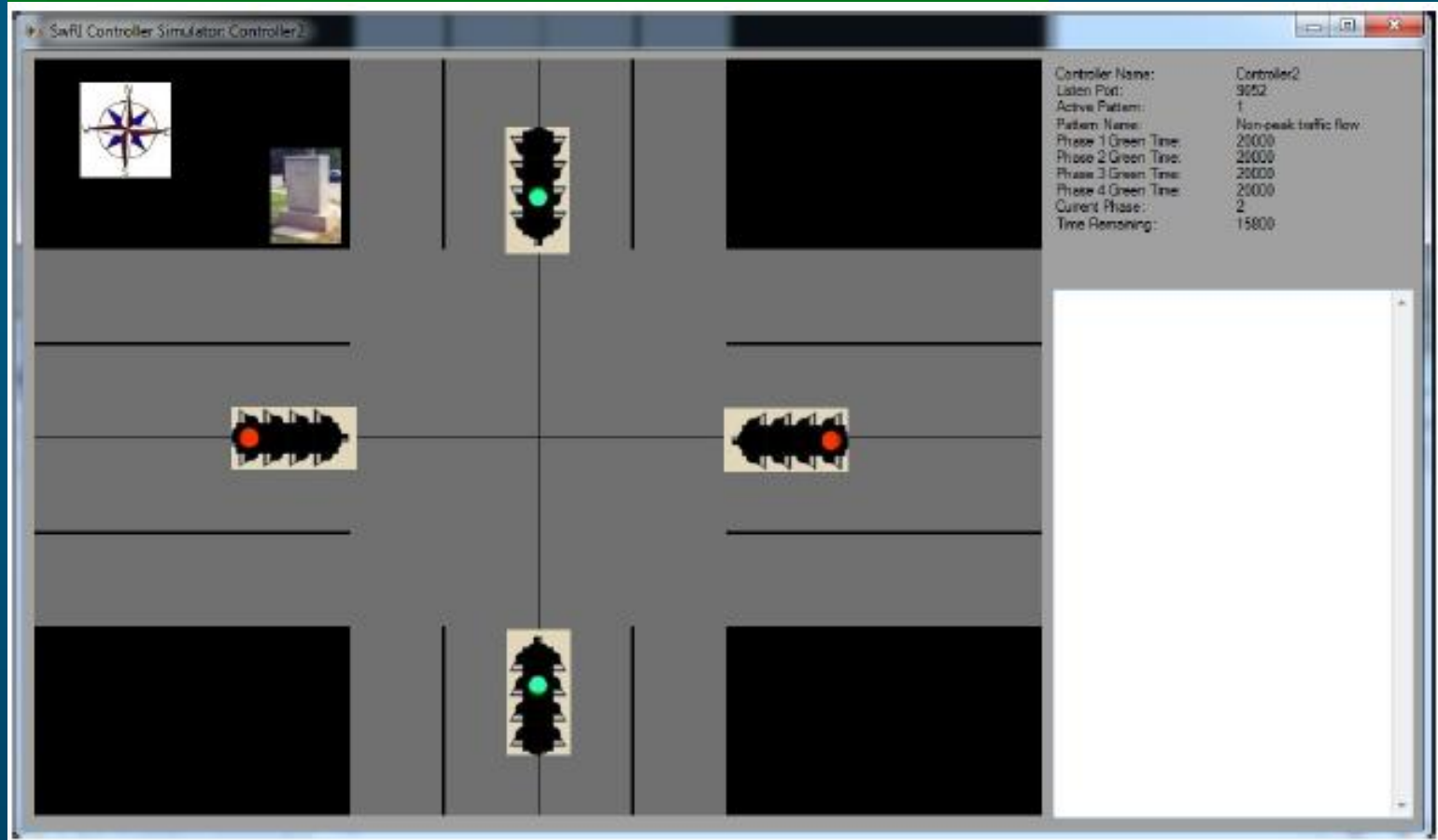


- List of available plans
 - Affected controllers
 - Plan descriptions
- Activation of a new plan requires explicit permission

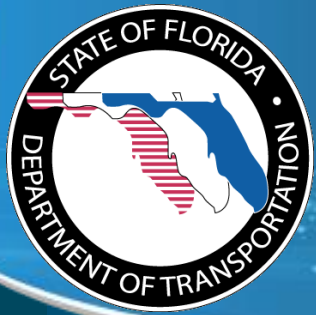




SwRI POC Vendor Master

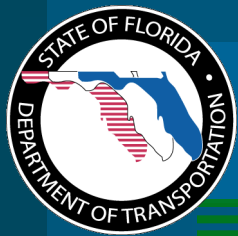


- SwRI custom software that shows POC for doing NTCIP directly to the controller, bypassing the Vendor Master



Wrong Way Driving Countermeasures

Arun Krishnamurthy, FDOT



Wrong Way Driving (WWD)

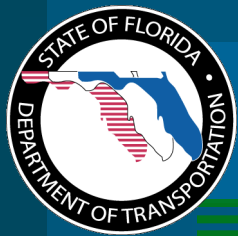


- **Central Office formed a task team, per request from Secretary Prasad, to determine actions that state would take to counter WWD events.**
- **Scope of this effort**
 - Conducting Literature Review of existing WWD Studies in the nation
 - Evaluating WWD vendor products
 - Reviewing FDOT Plans Package and improving the WWD plans in it for future projects
 - Enhancing SunGuide to include response for WWD events
 - Conducting field test with Turnpike

Background

- Fatalities few but fatality rate 12 times more than other crashes due to head-on collisions.
- Typical characteristics: impairment and **driving.**





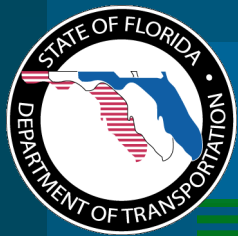
FDOT's Wrong Way Driving Statistics for 2009 - 2011



Roadway Facility	# of Crashes	# of Fatalities	# of Injuries
Urban Interstate	66	13	76
Rural Interstate	15	5	20
Urban Toll Roads	24	2	30
Rural Toll Roads	3	1	6
Urban Other Limited Access	19	0	25
Urban Ramps	8	0	6
Rural Ramps	38	0	32
TOTAL	173	21	195

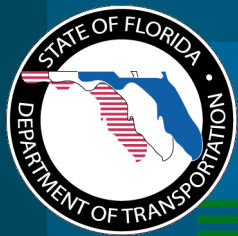
Note:

1. Each crash could result in one or more fatalities or injuries.
2. This data is cumulative for three years from 2009 to 2011.



Pensacola Wrong Way System

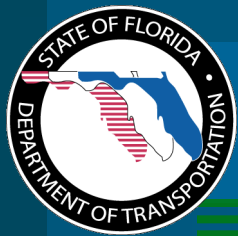




Literature Review



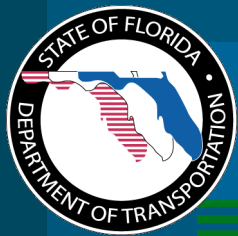
- NTSB recently published a WWD report
- Texas is active in WWD detection with ITS technologies
- OOCEA is currently conducting research with UCF
 - Contact Corey for more details



Vendor Evaluation by TERL



- **Freeway product (Can detect wrong way vehicle with Click 512 module)**
 - Wavetronix HD
- **Ramp offering (Blank our sign or static sign with event driven beacon actuation)**
 - Tapco
 - Information Display
 - Unipart Dorman

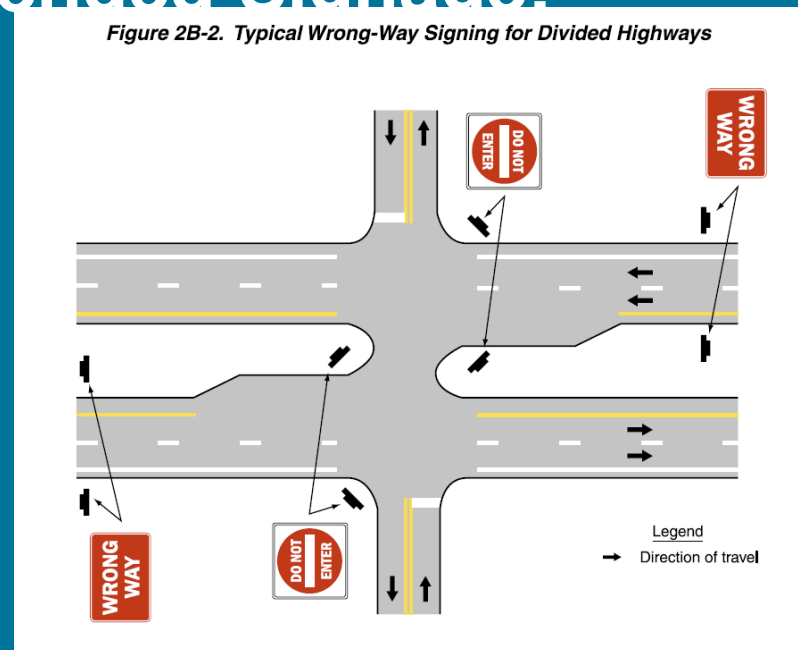


WWD Plans in FDOT's Standard Plans



Traditional and innovative signing and pavement marking techniques

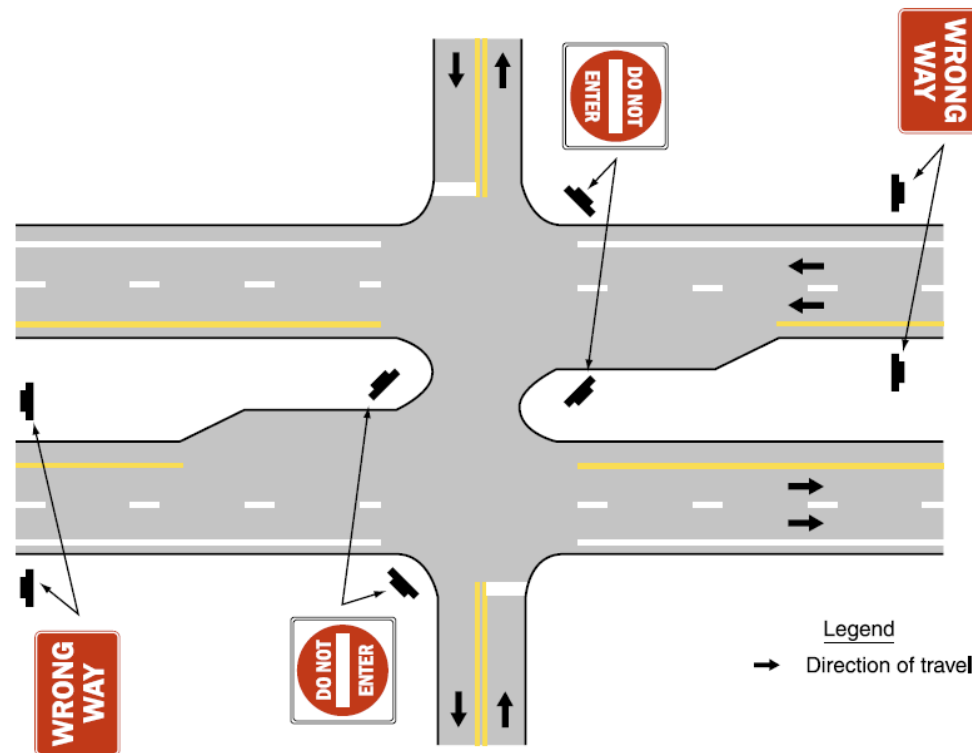
- MUTCD Recommended Signage:

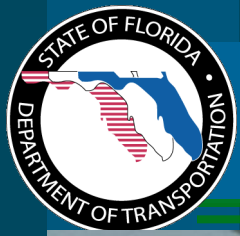


- MUTCD Recommended Signage:



Figure 2B-2. Typical Wrong-Way Signing for Divided Highways





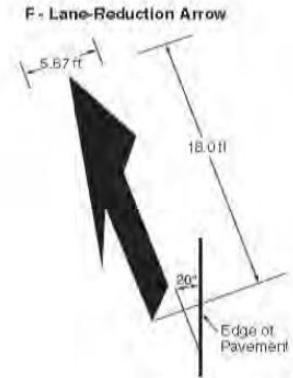
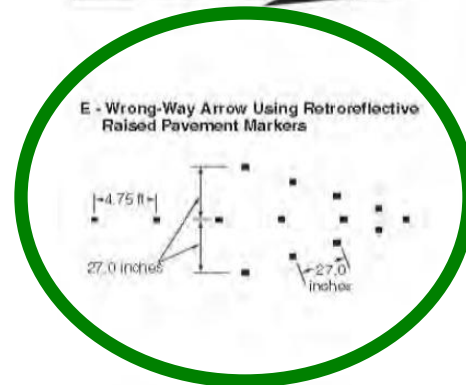
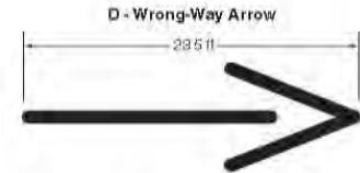
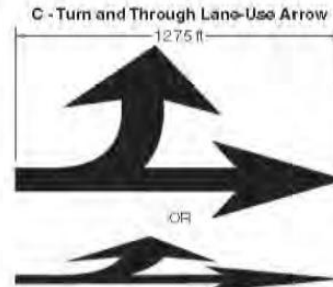
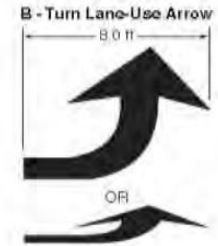
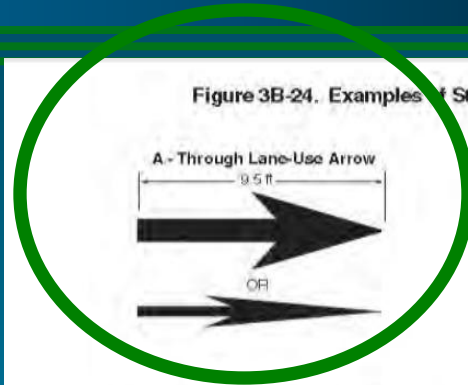
Innovative Signage

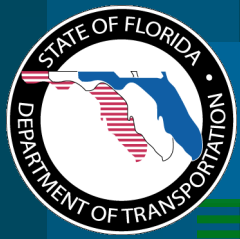


Pavement Markings

- Through Lane Use Arrow
- Wrong Way Arrow using Retroreflective Raised Pavement Markers
- Use of Stop Bar where possible

Figure 3B-24. Examples of Standard Arrows for Pavement Markings

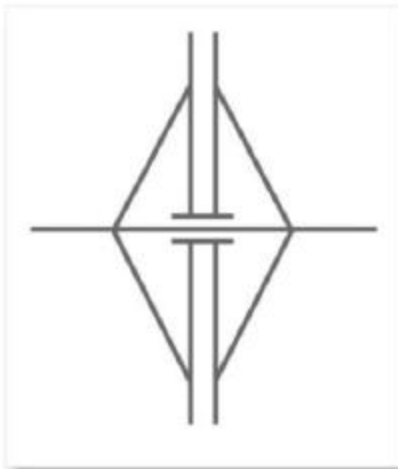




Interchange Types and WWD



- Full cloverleaf has least WWD events.
- Partial interchanges have twice the possibility of WWD events.



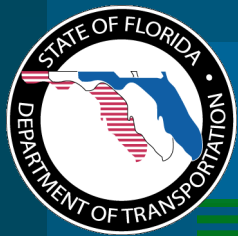
Full Diamond



Full Cloverleaf



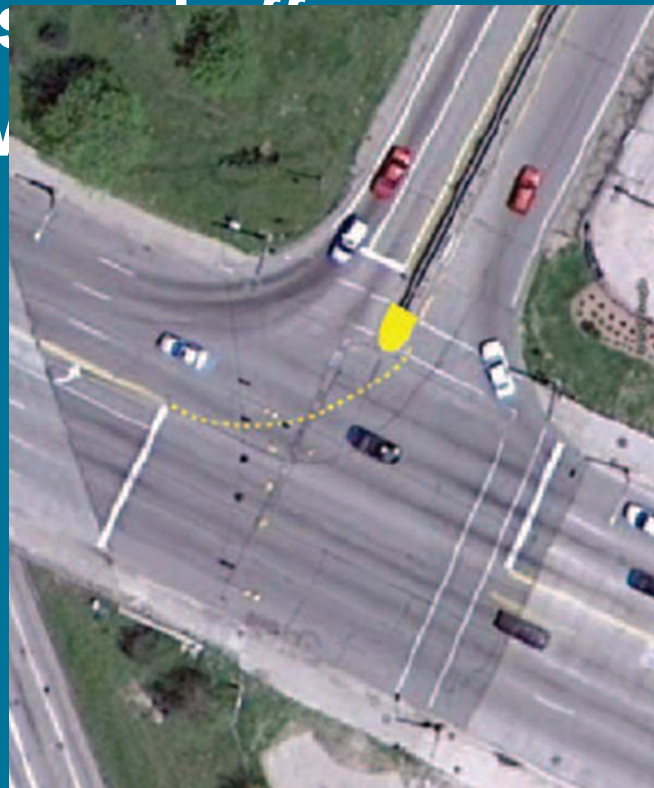
Partial Cloverleaf
(Parclo)

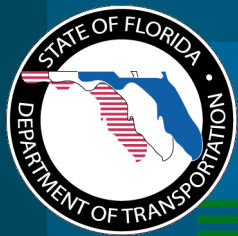


Geometric Modifications



- Raised curb medians for partial interchanges
- use channelized medians or islands
- Separate on ramps
- Use straight arrows on traffic signals.



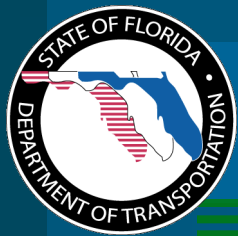


Innovative Signing on Ramps



- **Static Signs with Flashing Beacons (flash all the time or during nights)**
- **Static Signs with Flashing Beacons that are triggered by a WWD event.**
- **Blank-out sign with Flashing Beacon that is triggered by a WWD event**

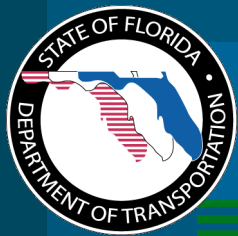




ITS Solutions



- **Use Wavetronix HD detectors to detect wrong way events on freeway.**
 - Automatically post wrong way events on Dynamic Message Signs.
 - Notify law enforcement of wrong way events.
- **Identify other cost effective solutions for deployment on freeways.**
- **Deploy ITS on ramps to detect and notify TMC and Law enforcement officers.**

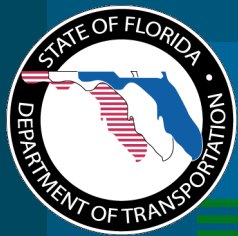


Future Incorporation in SunGuide Software



Possibilities:

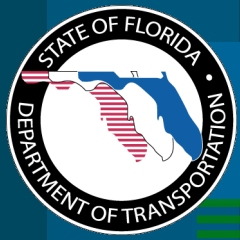
- Modification to receive WWD events from device.
- Automated response on DMSs
- Automated notification to law enforcement
- Automated email dissemination to preconfigured list
- Automatically launch the video on the computer screen
- Integration with Connected Vehicle technology



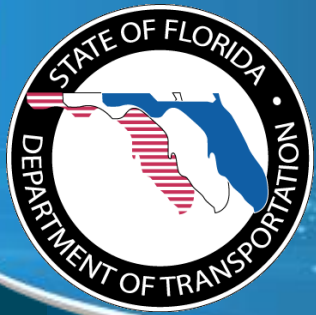
Field Demo / Testing at FTE



- Work with John to determine locations for this WWD field testing
- Work with Safety office to map WWD prone areas in Turnpike

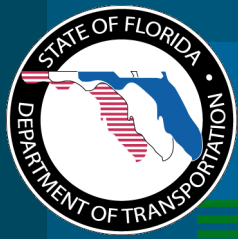


Questions?



Construction Events in SunGuide and 511

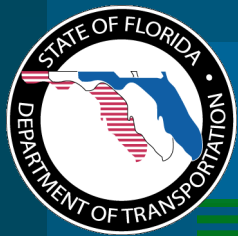
Clay Packard, Atkins



Construction Events



- **Need a way to send construction event to 511**
 - ...with an affected area, not a single point location**
- **Also applies to Special Event, Bridge Work, Visibility, Weather or Flooding**



Existing Event Congestion Fields



Impact on Roadways
Save

▼ Event Location / Congestion
Leon on I-10 Eastbound, Before MM 202
No Congestion

Event Location

County: Leon

Road: I-10

Direction: Eastbound

Reference Point: SR-61 Thomasville Rd.

Relationship To Exit: before: MM 202

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Mile Marker:

Congestion

Alternate Roads: None

None
 Primary: US-90
 Secondary: SR-27

Save Location / Congestion

Congestion Head

County: Leon

Road: I-10

Direction: Eastbound

Reference Point: SR-61 Thomasville Rd.

Relationship To Exit: before: MM 202

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Mile Marker:

Congestion Tail

County: Leon

Road: I-10

Direction: Eastbound

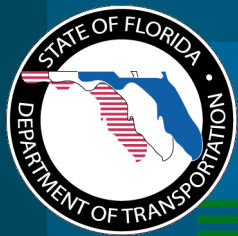
Reference Point: --Between--

Relationship To Exit: at: Location A

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

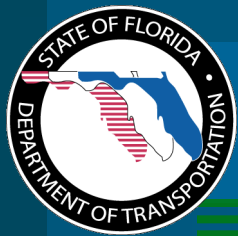
Mile Marker:



Affected Area Solution



- Small change to user interface
- Labels only change
 - no change to user controls
- “Congestion” changes to “Affected Area”
- Change applied to following event types:
 - Construction
 - Special Event
 - Bridge Work
 - Visibility
 - Weather
 - Flooding



Changes to User Interface



Impact on Roadways Save

▼ **Event Location / Congestion** Leon on I-10 Eastbound, Before MM 202 No Congestion

Event Location

County: Leon

Road: I-10

Direction: Eastbound

Reference Point: SR-61 Thomasville Rd.

Relationship To Exit: before: MM 202

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Mile Marker:

Congestion

Alternate Roads: None

None
 Primary: US-90
 Secondary: SR-27

Save Location / Congestion

Congestion Head

County: Leon

Road: I-10

Direction: Eastbound

Reference Point: SR-61 Thomasville Rd.

Relationship To Exit: before: MM 202

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

Mile Marker:

Congestion Tail

County: Leon

Road: I-10

Direction: Eastbound

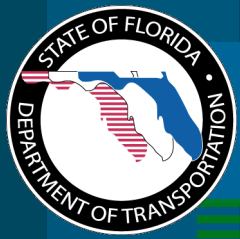
Reference Point: --Between--

Relationship To Exit: at: Location A

Distance From Exit (ft): 0

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

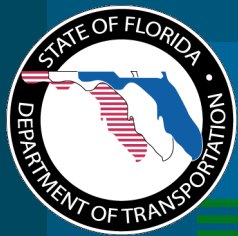
Mile Marker:



Impacts



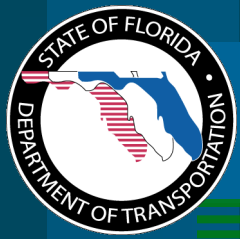
- No change to protocols or schemas
- Currently, the event's Event Location is sent as the primary location in C2C data
- This enhancement will use the affected area's head as the primary location in C2C
- The tail will continue to be used as the secondary location
- Operators will need to be aware of the change and set the head and tail of the affected area accordingly for these event types and publish them to FL-ATIS



Construction Events Requirements



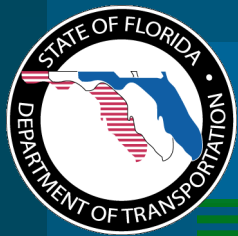
- **GUI:**
When a Construction, Special Event, Bridge Work, Visibility, Weather or Flooding event is created, the user shall have the ability to set the head and tail of the affected area.



Construction Events Requirements



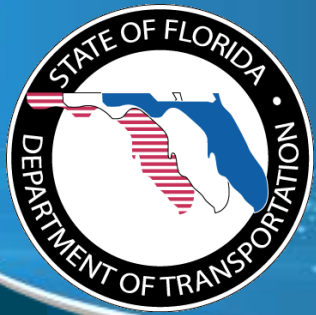
- **C2C:**
When an “affected area” event is selected and the user has set the head and tail of the event, the head of the event shall be sent as the primary event location and the tail of the event shall be sent as the secondary event location



QUESTIONS?

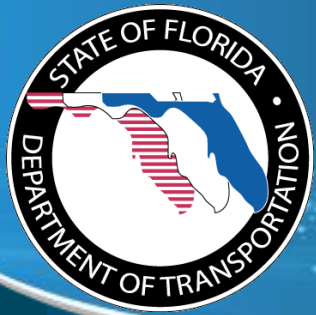
Clay Packard, Atkins

clay.packard@dot.state.fl.us



Priority Items by District

Arun Krishnamurthy, FDOT



Review Action Items

Javier Rodriguez, FDOT