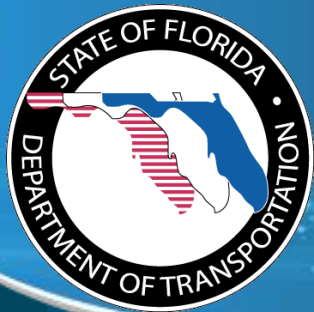


# Change Management Board Meeting

*Tuesday, November 27, 2012*

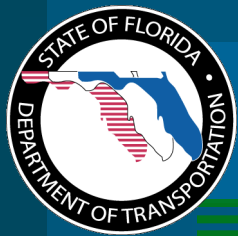
**Video Conference: CO- Burns Video Bridge 3**

**Audio Only: 850 - 414 - 4973**



# Welcome and Call for Quorum

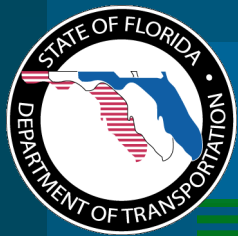
Javier Rodriguez, CMB Chairman



# 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 or Frank Deasy
1:50 – 2:00	SunGuide® Software User Group (SSUG) Update	John Hope
2:00 – 2:20	PostgreSQL and SunGuide Software Cloud Computing	Steve Novosad
2:20 – 2:40	SunGuide Software Permissions <i>(vote)</i>	Tucker Brown
2:40 – 3:00	SunGuide Software Installer Improvement	Clay Packard
3:00 – 3:10	Break	



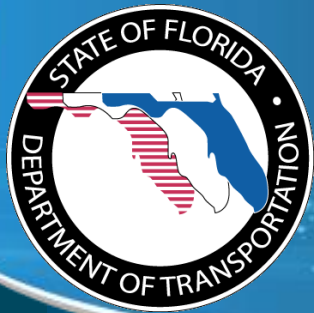
# Agenda



Time	Item	Lead
3:10 – 3:30	Road Ranger Multiple Agency Coordinator Enhancement	John Hope
3:30 – 3:45	SunGuide Software Reporting Update	Brian Ritchson
3:45 – 4:05	Regional Integrated Transportation Information System (RITIS) Update	Arun Krishnamurthy
4:05 – 4:20	SunGuide Software Top Priority Items	Arun Krishnamurthy
4:20 – 4:30	Action Item Review	Javier Rodriguez

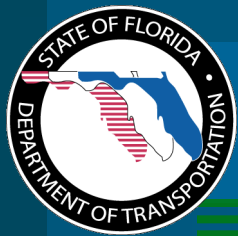
**CMB agenda, slides, and attachments posted here:**

**[http://www.dot.state.fl.us/trafficoperations/ITS/Projects\\_Deploy/CMB.shtm](http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/CMB.shtm)**



# Previous Meetings Recap and Action Items Review

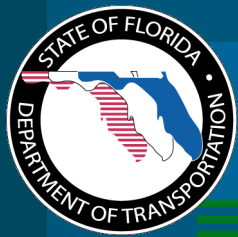
Javier Rodriguez



# August 2012 Action Items



- 1. Central Office (CO) to conduct stress test of ITS WAN and provide white paper**
- 2. SSUG to review SunGuide software permission options and provide recommendation for voting at next meeting**
- 3. CO and District to follow up with highway advisory radio vendor to see if a driver can be developed and follow-up with SwRI for cost estimate for the graphic user interface (GUI) and subsystem enhancements**

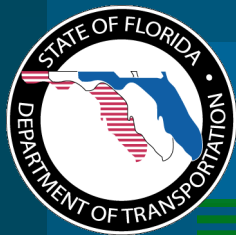


# August 2012 Action Items

(contd)



4. CO to evaluate if the 2,030 alerts from D5 were actual or false alarms
5. CO to review the possibility of providing a comprehensive vehicle make and model to be included in the SunGuide software so transportation management centers (TMC) do not have to manually type it in



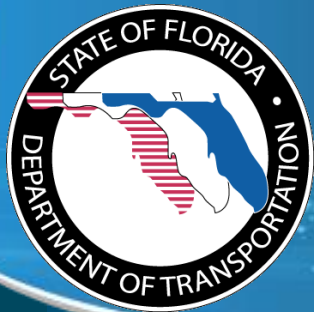
# August 2012 Action Items

(contd)



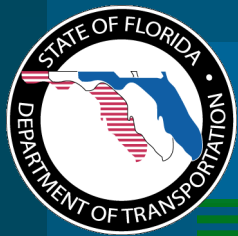
6. Districts to provide any Florida Highway Patrol (FHP) computer-aided dispatch (CAD) issues and suggestions to CO so they can address them
7. CO to provide a plan for working out RITIS and Statewide Transportation Engineering Warehouse for Archived Regional Data (STEWARD) transition





# ITS WAN Update

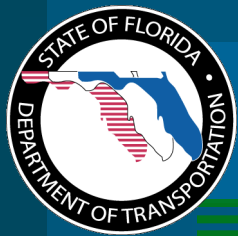
Randy Pierce, FDOT  
and  
Frank Deasy, Telvent



# ITS WAN Update



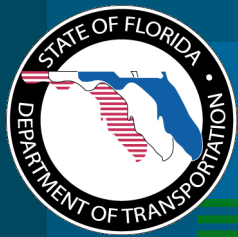
- **Connecting D1 & D7**
  - ITS WAN equipment operational
  - UniCast connectivity operational
  - Static routes being verified for any overlapping address space that must be resolved
  - MultiCast connectivity will be implemented after addresses are resolved
- **Connecting D3 Regional TMCs (RTMC) Tallahassee**
  - Tallahassee RTMC fiber connection in process



# ITS WAN Update



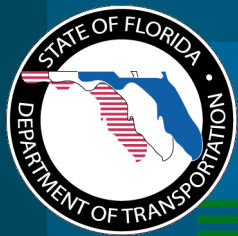
- **Florida's Turnpike Enterprise (FTE) RTMC Pompano**
  - FTE switch configuration and connection to ITS WAN still in process
  - Fiber outage on mainline being addressed by FTE
  - Need date for completion from FTE
- **FHP CAD**
  - Available to Districts connected to ITS WAN



# ITS WAN Update



- **MultiCast Re-Addressing**
  - Districts should re-address their multicast devices now to resolve any overlapping addresses
  - D4 in process to re-address their multicast devices
  - What is the status of this effort in D3, D5, D6 and MDX?
  - VAS can then receive MultiCast video without the need for further re-addressing
- **Florida Advanced Traveler Information System & VAS**
  - Replacing dedicated circuits with ITS WAN connectivity

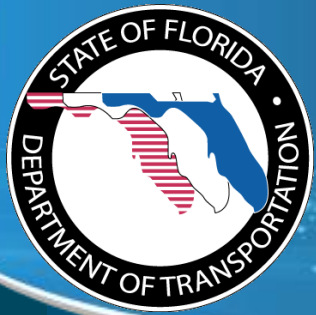


# Questions?



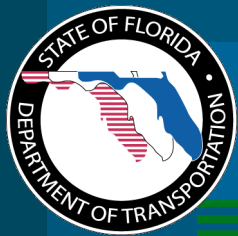
**Randy Pierce, FDOT**

**Randy.Pierce@dot.state.fl.us**



# SSUG Update

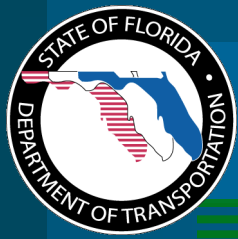
John Hope, Atkins



# SSUG Update



- **Center-to-Center (C2C) Reliability**
- **Expanded User/Device Permissions Options**
  - Four Districts/Agencies in favor of Option 1: *Single permission set per user*
  - Three Districts/Agencies in favor of Option 2: *Multiple permission sets per user*
  - Three Districts/Agencies no preference
- **Locking/Unlocking Presets**
- **Miles Ahead Calculation Issue**
  - Hotfix and sequencing configuration fix
- **Proximity Issue with Mile Marks, FP 1616**

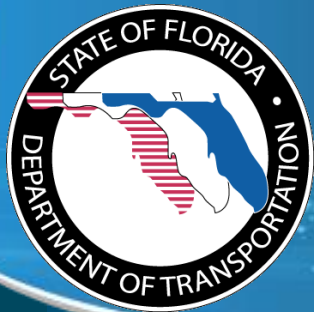


# QUESTIONS?



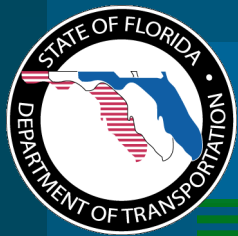
**John Hope, Atkins**  
**John.Hope@atkinsglobal.com**





# PostgreSQL Database for SunGuide Software

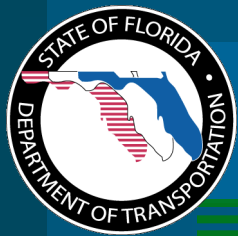
Steve Novosad, Atkins



# PostgreSQL



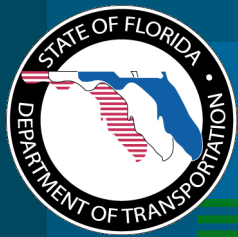
- **Benefits**
- **License and Cost**
- **Specifications**
- **Programmatic Interfaces**
- **Support**
- **Features**
- **Maintenance**



# Benefits



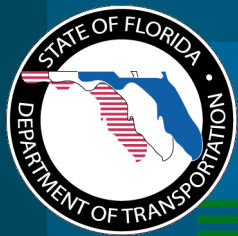
- **Increased Interest by Local Agencies**
- **Improved Relationship with Local Agencies**
- **Utilize Backup Database for Reporting**
- **Increased Interest by Other States**
- **Additional Alternative for Current Deployments**



# License and Cost



- **License Required for PostgreSQL**
  - Database management system
  - JAVA interface
  - C# Sharp interface
- **MIT-Style License**
- **Issued thru OSI**
- **Modifications Permitted**
- **No Cost to License or Distribute the Product**



# Specifications

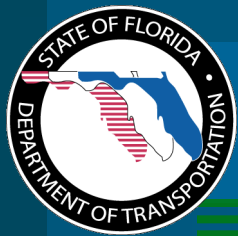


## ● Server

- Supports both Windows and Unix/Linux
- Requires 64 bit CPU
- Requires 64 bit OS
- Dual Core/CPU
- RAID 1

## ● Database Limitations

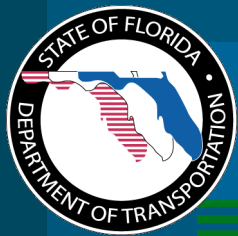
Maximum Database Size	Unlimited
Maximum Table Size	32 TB
Maximum Row Size	1.6 TB
Maximum Field Size	1 GB
Maximum Rows Per Table	Unlimited



# Programmatic Interfaces



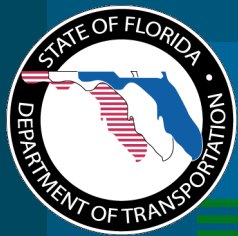
- Includes C and Embedded C Interfaces
- C# Interface Available as a Separate Download
- Java Interface Available as a Separate Download



# Support



- **Developer Mailing Lists**
- **User Community**
- **Bug/Issue Submission**
- **Professional Companies**

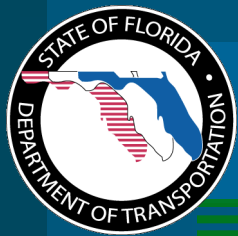


# Features



- **Extended Subset of ANSI SQL:2008**
- **Standard Features of Other Proprietary Database Management Systems (DBMS)**
  - Transactions
  - Subselects
  - Triggers
  - Views
  - Foreign key referential integrity
  - Sophisticated locking
- **Auto-Increment Through Sequences**
- **Fully ACID Compliant**





# Features

(contd)



- **Additional Features**

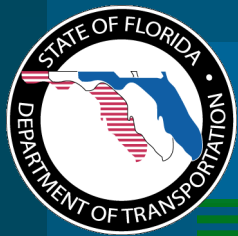
- User-defined types
- Inheritance
- Rules
- Multi-version concurrency control

- **Security**

- Allows connections from only the local machine
- Access for other machine provided in configuration file

- **Performance**

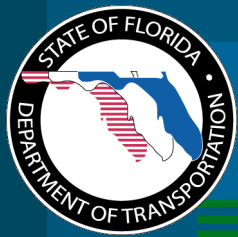
- Advertised to be equivalent to proprietary DBMSs



# Availability and Recovery



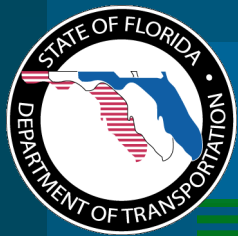
- **High Availability**
  - Server node failover provided by third party tools
  - Uses same data store
- **Disaster Recovery**
  - Offsite, log-shipping / streaming replication / synchronous replication / cascading replication
  - Uses separate data store
  - Complete redundancy for catastrophic failure
  - Standby read-only mirror database usable for reporting



# Maintenance



- **15 Years of Active Development**
- **Releases**
  - Committee of 5 to 7 senior contributors set release dates
  - Encourage installing any minor releases of major release implemented
  - Goal to support major releases for five years
  - Goal of one major release a year
  - Current release is 9.2.1
- **GUI Tools**

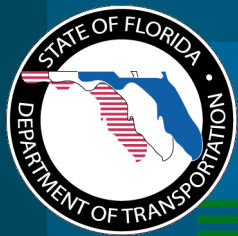


# Maintenance

(contd)



- **Debugging Tools**
- **Compatibility**
  - Previous versions do not support new operating system (OS) releases
  - New version will support latest OS release
- **Reliability**
  - Beta testing minimum of one month for major releases

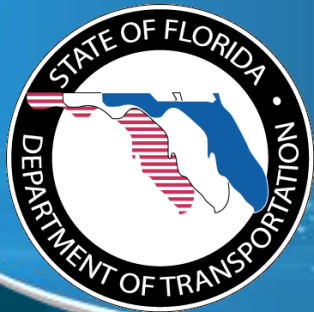


# QUESTIONS?



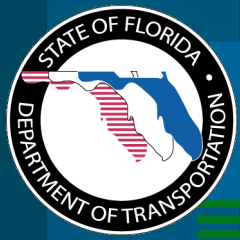
**Steve Novosad, Atkins**

**Steven.Novosad@atkinsglobal.com**



# Cloud Computing for SunGuide Software

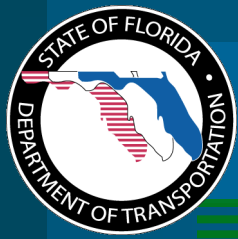
Steve Novosad, Atkins



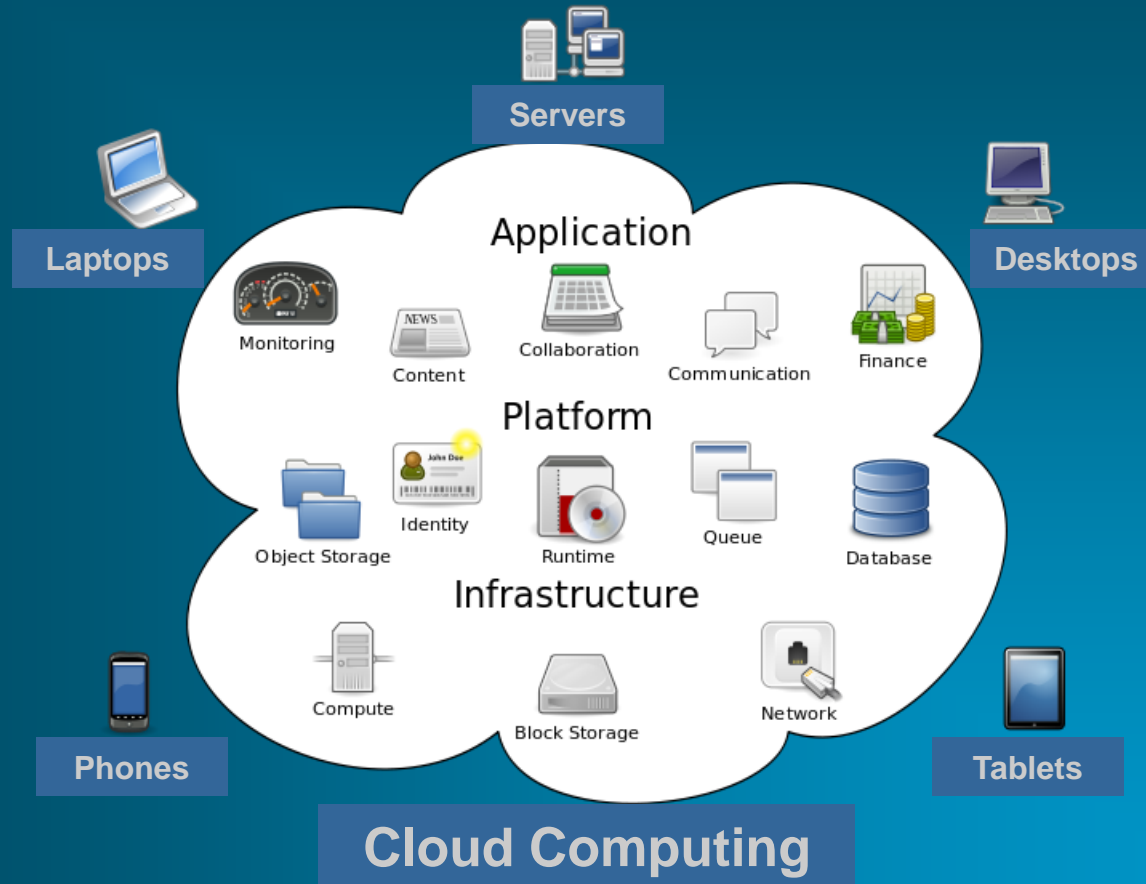
# What is Cloud Computing



- **The Use of Computing Resources Delivered as a Service Over a Network**
- **What do You Want it to Mean?**

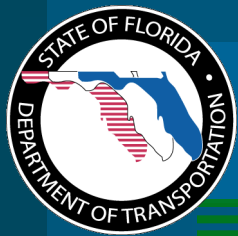


# Cloud Computing



Courtesy of Wikipedia

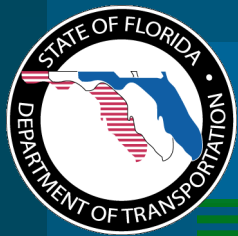




# Benefits



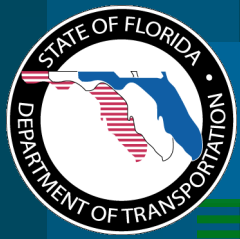
- **Provides Opportunities to**
  - Add small agency deployments
  - Stretch deployment funds
  - Stretch maintenance funds
  - Simplify software deployments
  - Add storage capability
  - Add backup capability



# Cloud Services



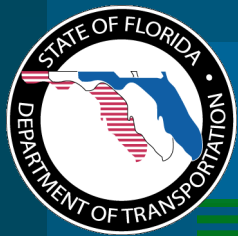
- **Multiple Services Available**
  - Software as a Service (SaaS)
  - Infrastructure as a Service (IaaS)
  - Platform as a Service (PaaS)
  - Storage as a Service (STaaS)
  - Security as a Service (SECaaS)
  - Data as a Service (DaaS)
  - Test environment as a Service (TEaaS)
  - Others



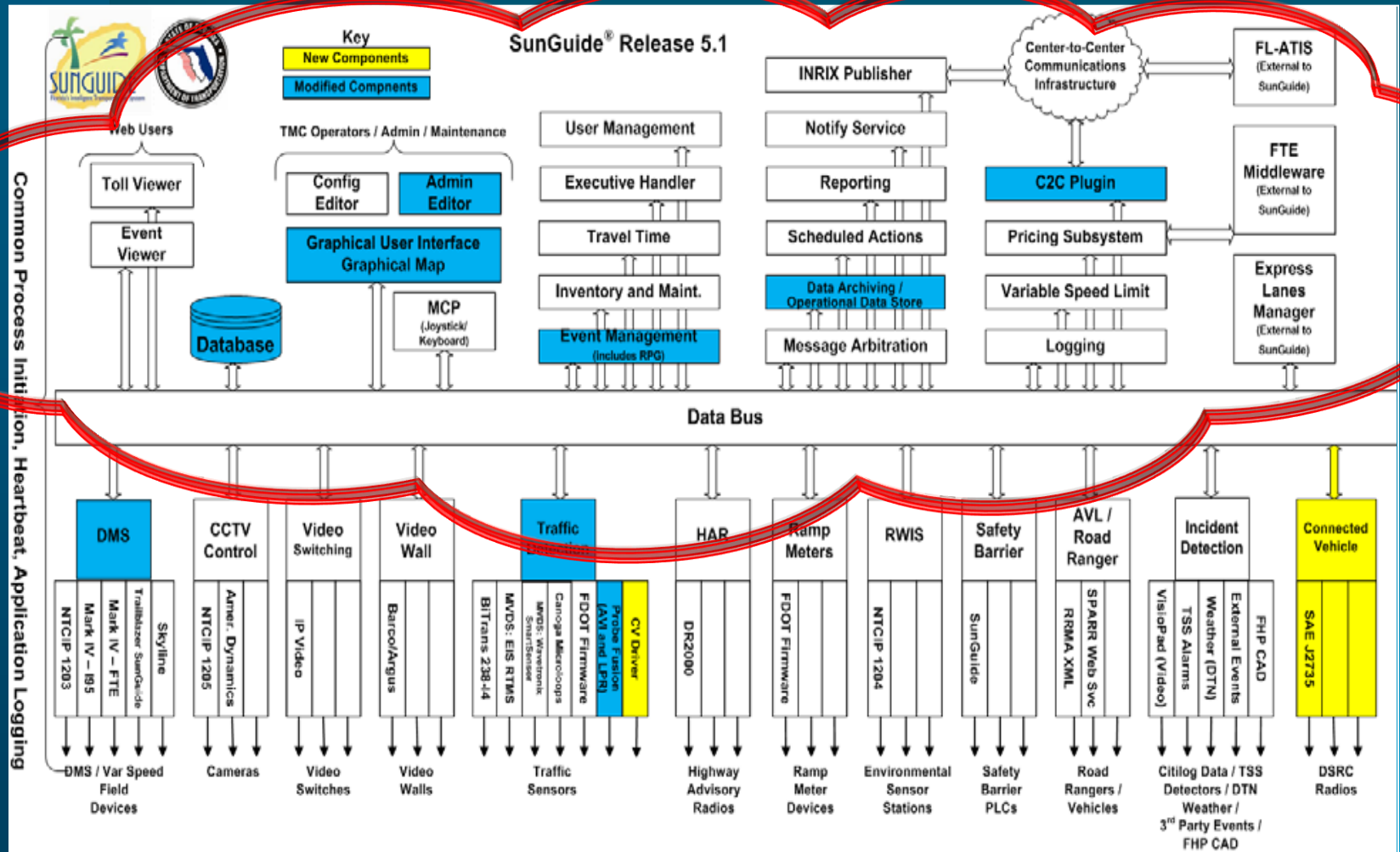
# Deployment

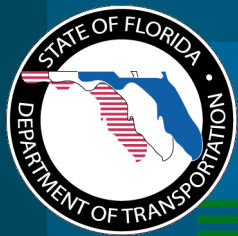


- **Where to Host – Public, Private, or Hybrid Cloud**
- **Connect to Cloud thru ITS WAN or Internet**
- **User Interface**
  - Most cloud applications are typically browser-based user interfaces
  - Do not anticipate significant changes to SunGuide software operator interface
- **Device Drivers**
  - Field device communications latency



# Cloud Versus Local Deployment SunGuide Architecture

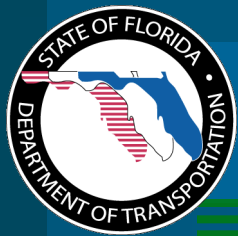




# Next Steps



- **Establish Business/Service Model**
  - Primary system
  - Backup system
  - Small TMC system
  - Region TMC system
  - Backup
  - Data storage
- **What Would You Want the Cloud to do for You?**

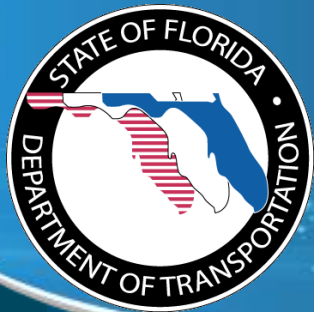


# Questions?



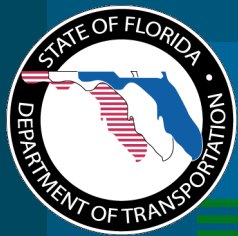
**Steve Novosad, Atkins**

**Steven.Novosad@atkinsglobal.com**



# SunGuide Permissions Model Changes

Robert Heller / Tucker Brown, SwRI



# Context

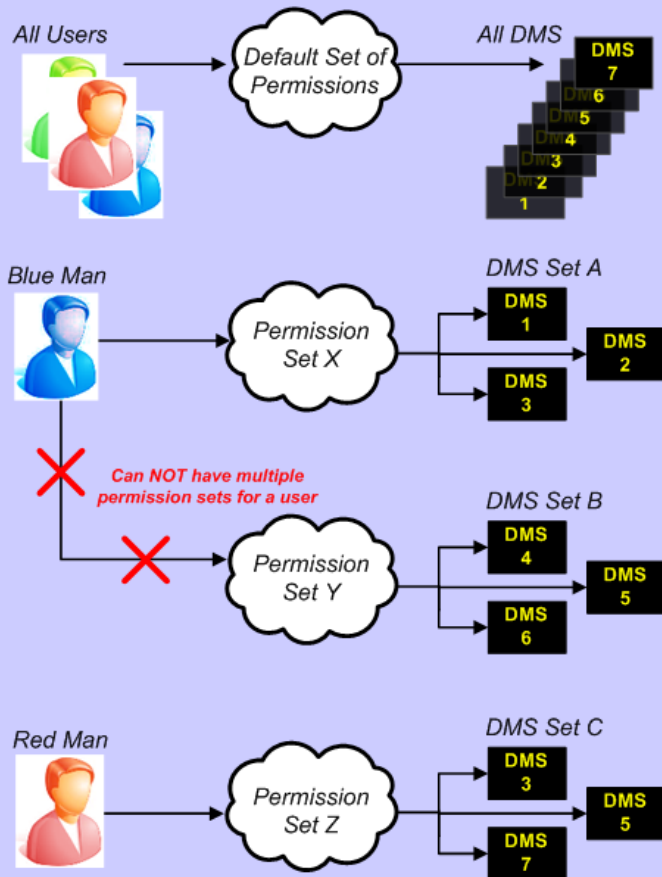


- **SunGuide permission model is simplistic**
  - User has set of permissions, though highly granular
  - E.g. if a user can control a DMS, then can control all DMS
- **Request to subset devices has been raised more than once**
  - Grant user permission to control subset of devices
  - District 2 most recently



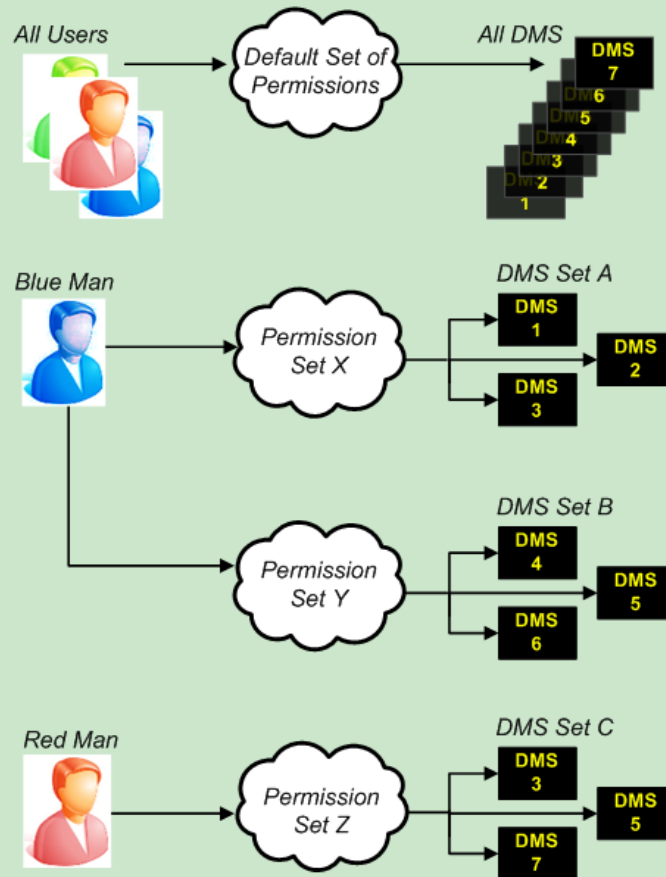
### Option 1

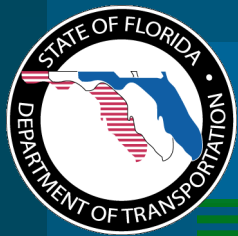
All users have a default set of permissions for all devices.  
A user can also have a single custom set of permissions assigned to a subset of devices.



### Option 2

All users have a default set of permissions for all devices.  
A user can also have multiple different custom sets of permissions assigned to different subsets of devices.

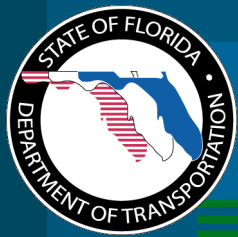




# Proposed Changes



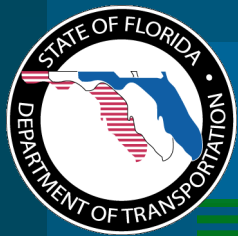
- **Two operations at issue:**
  - User authentication
  - Command authorization
- **Move all authentication and authorization to new subsystem**
  - Currently performed in “generic”
  - Moved to “SAA”
  - Centralized, ease of maintenance, enhancement, (like TxDOT Lonestar)



# Proposed Changes (continued)



- For a device type define a default set of permissions inherited by all users
- For a user
  - For a device type (DMS), define user permissions
  - Assign those permissions to a device subset
  - Different users may have different device subsets
  - Device may appear in multiple device subsets

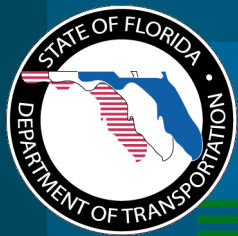


# Example



## ● Example 1

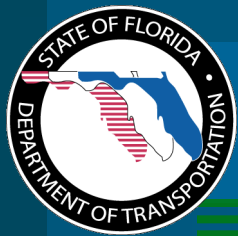
- Default all users to “see” all DMS and current message on DMS configured in system
- If “User A” has only default configuration, then can see DMS but not change them
- Allow “User B” to have full control of DMS on I-95 through Broward County
- Allow “User C” to have full control of DMS on I-95 through Broward County and I-75 through Broward County
- Allow “User D” to have full control of all DMS configuration in the system



# CONOPS



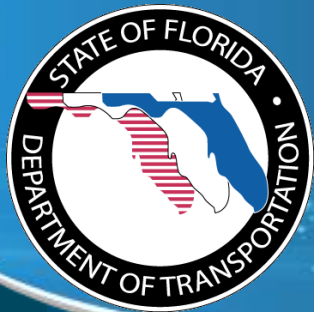
- **Option 1 proposal**
  - Based on further discussions
  - SSUG
  - SunGuideSoftware website
  
- **Estimated cost: \$125,000**



# QUESTIONS?

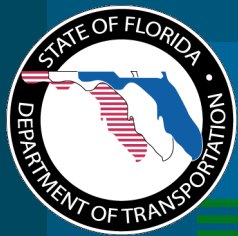
Robert Heller, SwRI, [robert.heller@swri.org](mailto:robert.heller@swri.org)

Tucker Brown, SwRI, [tucker.brown@swri.org](mailto:tucker.brown@swri.org)



# SunGuide Software Installer Improvement

Clay Packard, Atkins



# Overview

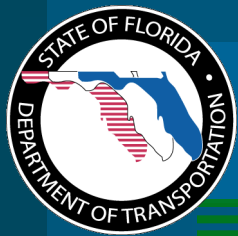


- **Installation Process is a Very Manual, Complex Process:**

- Installation Notes:

[http://sunguidesoftware.com/sunguidesoftware/documentlibrary/ReadingRoom/ProjectDocuments/transmittals/SunGuide-IN-5.1.1\(Draft\).pdf](http://sunguidesoftware.com/sunguidesoftware/documentlibrary/ReadingRoom/ProjectDocuments/transmittals/SunGuide-IN-5.1.1(Draft).pdf)



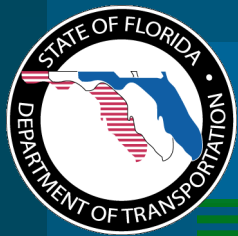


# Overview

(contd)



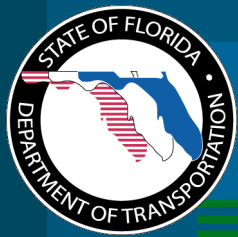
- **As Districts Perform Their Own Installs/Upgrade**
  - Moving from on-site support to remote support to as-needed support
  - Install/upgrade support will facilitate system understanding by local staff
  - Allows support to focus on defect removal and enhancement rather than maintenance



# Objectives



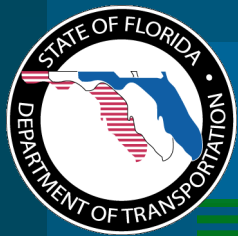
- **Need to Separate Software Issues From Installation Issues**
  - Latent – revealed only when features are used
  - Sticky – requires SunGuide software engineer to diagnose and correct, especially database issues
  - Hazardous – many manual verification and configuration steps provide opportunity for human error



# Installer Objectives



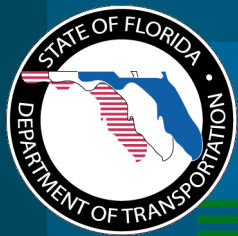
- **Automation – Dependency Verification**
  - .NET 4.0, .NET 2.0, Visual C 2012 runtime, IIS & ASP.NET, admin privileges, database connectivity, verify available ports, verify Crystal runtime 11.5
  - Copy new XML schema files, verify Navteq map data, verify map tiles exist and auto-download
- **Clear, Specific Error Messages for Failure**
  - Makes diagnosis and resolution much easier



# Configuration Consolidation



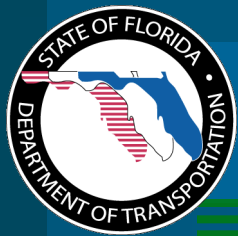
- **All Configuration Moved into Database**
  - config.xml,
  - ipvideodevices.xml,
  - SnapshotDevices.xml,
  - OMInterface.dll.config,
  - schedules.xml,
  - sequences.xml,
  - FL-ATIS\_FloodGate\_Data.xml
- **Automatic Update of Configuration**
  - User prompted for some parameters with defaults provided



# Database Tools



- **User-Friendly Suite of Database Tools**
  - Version-specific validation of physical and logical database (schema/users, tablespaces, synonyms, etc.)
  - Export (backup), import
  - Maintenance
    - Recreate synonyms
    - Rebuild indexes
    - Synchronize sequences
    - Etc.
    - Other maintenance needed ?

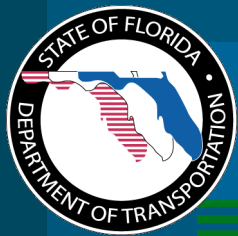


# Database Tools

(contd)



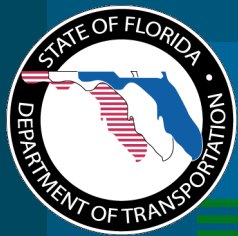
- **Clear, Specific Error Messages for Failures**
  - Makes diagnosis and resolution much easier
  - Removes benign error messages
  - Progress bar / percent complete



# Database Upgrade



- **Database Physical and Logical Verification**
  - Validate version X before upgrade
  - Validate version Y after upgrade
    - Running scripts multiple times should not corrupt the database
- **Upgrade and Validate Within Single Transaction;**
  - or else, Roll-Back to Valid Version X**
  - Progress bar / percent complete



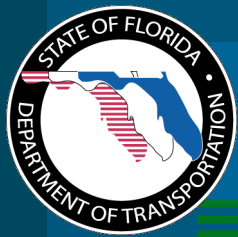
# Database Upgrade

(contd)



- **Clear, Specific Error Messages for Failures**
  - Specify database tables and/or subsystem in error
  - Makes diagnosis and resolution much easier
  - Removes benign error messages

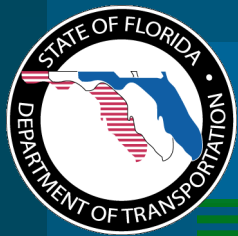




# Report Templates Mgmt



- **“Out-of-the Box” Templates**
  - Centrally managed and versioned
  - Deployed as a new set with each installer
  - Eliminates versioning issues from adding/removing (without any verification)
- **Custom User Templates**
  - Flagged as “custom”
    - Stored in separate folder
    - Backup folder for prior version  
(automatically, and once – if it doesn't exist)
  - Not affected by installation process



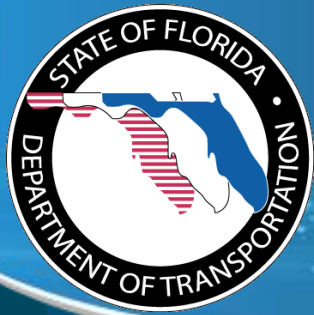
# Questions / Discussion



- Questions?
- Other Ideas to Include?
- Next Steps:
  - Gather additional ideas from SSUG
    - <http://sunguidesoftware.com/component/kunena/6-general-discussion/78-installation-and-upgrade-process-improvements?Itemid=0#80>
  - Requirements, cost estimate, and vote at next Change Management Board meeting?

**Clay Packard, Atkins**

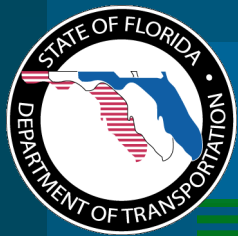
**Clay.Packard@dot.state.fl.us**



# Road Ranger Multiple Agency Coordinator Enhancement

OOCEA / FDOT D5 / FTE

John Hope, Atkins



# Current Road Ranger Management



- Currently, Road Ranger Applications Connect and Share Event/Dispatching Information with One SunGuide Software System

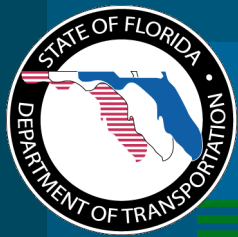


← Dispatched /  
Event Info

→ Dispatched /  
Event Updates

District X  
SunGuide





# Current Road Ranger Management



- If Road Ranger is Patrolling Roadways for Multiple Agencies, There's no "Easy" Way to Share Data with Multiple Agencies

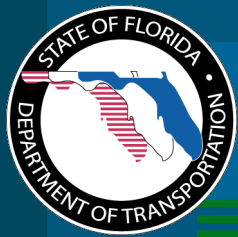


District X  
SunGuide



District Y  
SunGuide

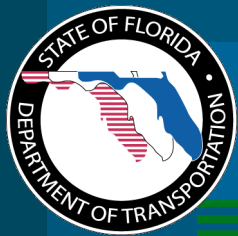




# Current Road Ranger Management



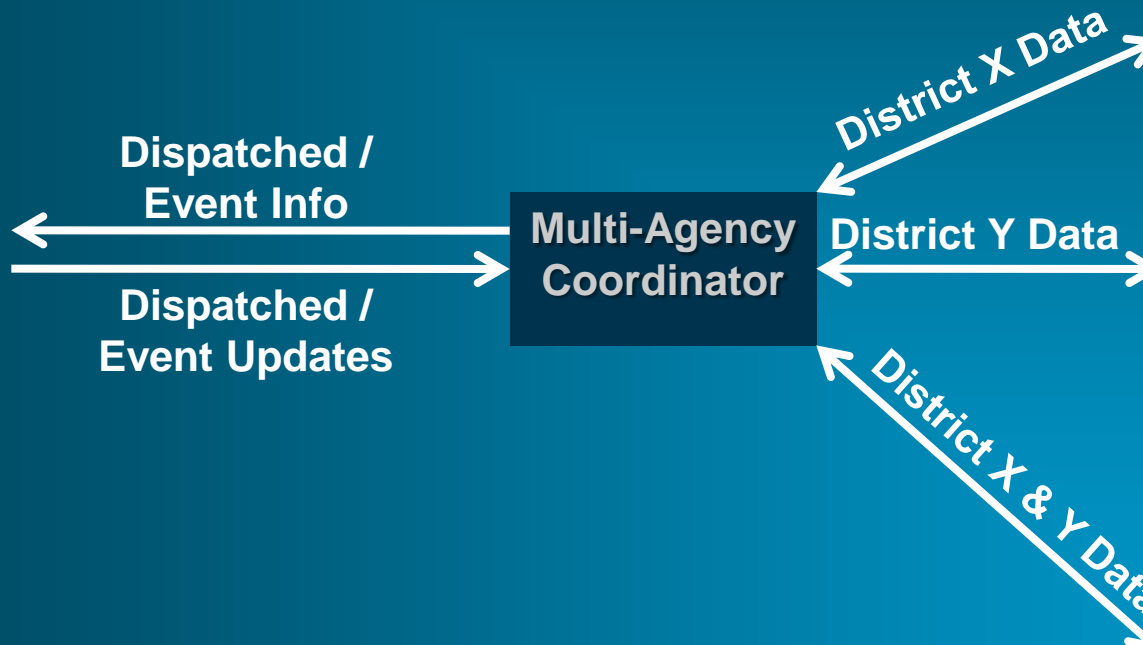
- **If Road Ranger Only Connects with District X SunGuide Software**
  - District Y may be able to see District X events via C2C
  - District X operators would see all events reported by Road Rangers
    - District X operators would have to ignore events that Road Ranger handles on District Y roadways
    - If District Y creates events in their system for events reported to District X, the 511 system may report the event twice
  - Only District X operators would be able to dispatch Road Rangers



# Multi-Agency Coordinator



- Proposed Concept



District X SunGuide

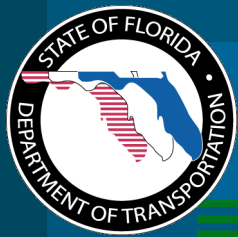


District Y SunGuide



District Z SunGuide



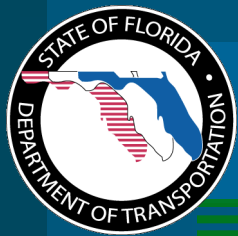


# Multi-Agency Coordinator



- **Where Would the Multi-Agency Coordinator Function?**
  - Within the Road Rangers application
    - Pros: No changes to SunGuide software
    - Cons: Changes to several vendors' applications; some vendors may not be compatible
  - Within SunGuide software
    - Pros: No changes to vendor software; FDOT would have direct control over functionality and configuration
    - Cons: Cost and possible complexity of design
  - External Application
    - Pros: No vendor or SunGuide software changes needed
    - Cons: Complicates connections with SunGuide software and adds dependency that may make operations and maintenance difficult

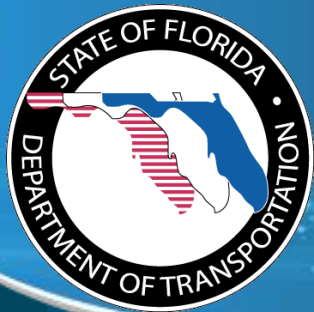




# Questions?

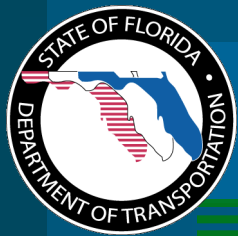


**John Hope, Atkins**  
**John.Hope@atkinsglobal.com**



# SunGuide Software Reporting Update

Brian Ritchson, MCG

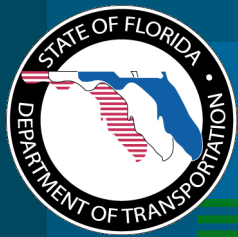


# SunGuide Reporting Update



## ● Overview

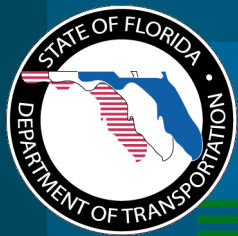
- Report reformatting
  - A comprehensive pass through all reports correcting differences in formatting and fixing minor errors
- Newly available reports
- Updated reports
- Proposed new features
- SunGuide software web site
  - The new hub for obtaining current, updated, and new reports



# Report Reformatting



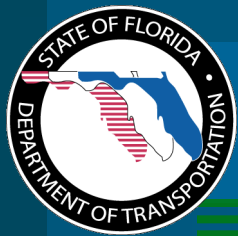
- **Purpose of Reformatting**
  - Create a consistent, professional look and feel to all reports
  - Uncover and fix minor errors that may otherwise never be discovered
- **Reformatting Progress**
  - ~50% completed
  - Will be completed by the release of SunGuide 6.0



# New Reports



- **Ramp Event List**
  - Functions identically to the event list report except that only events that include “Ramp From” or “Ramp To” in the location are included
- **DMS Filtered Messages for Travel Time Subsystem**
  - Returns message text and other data related to travel times on DMSs
- **Traffic Sensor Links**
  - Returns all database information for every traffic sensor link



# New Reports

(contd)

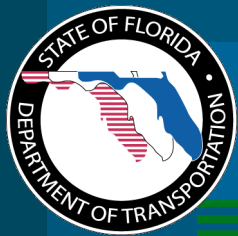


- **Device Locations**

- Presents location information for all ITS devices configured in SunGuide software, separated by device type

- **Detector Data Quality**

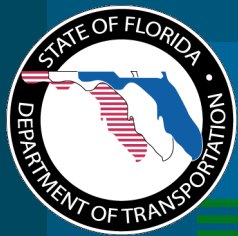
- Calculates the percentage of “good” detector data for each detector
- The thresholds for what is “good” are derived from a previous detector data study conducted by the Federal Highway Administration



# Updated Reports



- **Traffic Detection Rollup Data Tabular and Detector Data Detail**
  - Now can be optionally filtered by choosing a travel time link
  - If a travel time link is selected, then only detectors within this link will be included
- **Regional Floodgate Messages**
  - SunGuide 5.1.1 changes the way floodgate data is stored in the database; this report now benefits from these changes by including location information, related event id, and comment text

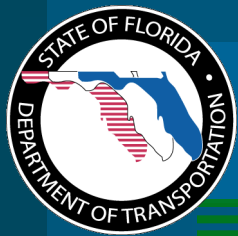


# Updated Reports



- Many reports received bug fixes
- These include:
  - DMS Filtered Messages for Safety
  - Weekly Performance Measures
  - Monthly Performance Measures
  - Quarterly Performance Measures
  - Annual Performance Measures
  - Incident Duration Full Detail
  - Incident Duration Flagged
  - Road Ranger Response Time QA
  - Detector Data Quality
  - CCTV Report
  - Traffic Flow Report
  - Detector Volume Tabular
  - Detector Speed Tabular
  - Basic Safety Messages
  - DMS Report
  - TSS Report
  - Regional Floodgate Messages
  - Probe Vehicle Database Messages

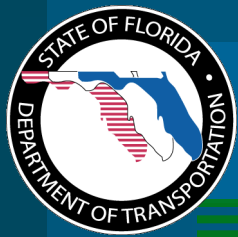




# Proposed New Features



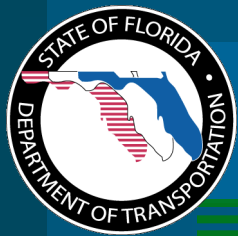
- **Ideas for Enhancements to Reporting Subsystem**
  - Being discussed by SSUG via the SunGuide software project web site forum
  - Installer management of report configuration
  - Scheduled action to generate and email report
  - Progress bar or estimated time remaining for report generation
  - Ability to cancel report generation
  - Add help dialogs that explain what reports do and what the output should look like
  - More clarity in error messages



# SunGuide Software Web Site



- [www.sunguidesoftware.com/Report-Repository](http://www.sunguidesoftware.com/Report-Repository)
- A Zip File Containing all Reports can be Downloaded from the SunGuide Software Web Site
- Individual Reports can be Searched by Name or Category
- New and Updated Reports can be Obtained Between Major SunGuide Software Releases

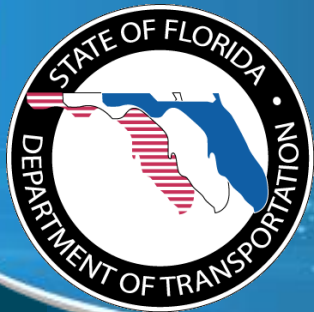


# Questions?



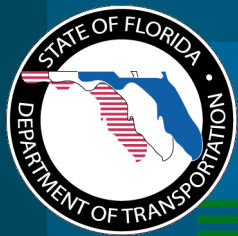
**Brian Ritchson, MCG**

**Brian.Ritchson@dot.state.fl.us.com**



# RITIS Update

Arun Krishnamurthy, FDOT

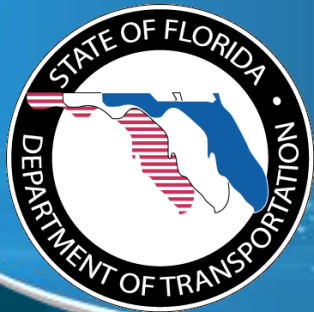


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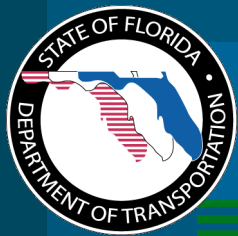
**Arun Krishnamurthy, FDOT**

**[Arun.Krishnamurthy@dot.state.fl.us.com](mailto:Arun.Krishnamurthy@dot.state.fl.us.com)**



# SunGuide Software Top Priority Items

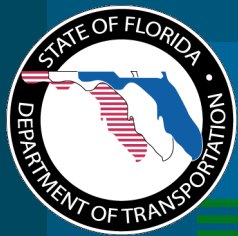
Arun Krishnamurthy, FDOT



# Top Priority Item



- **D1 Issue of Floodgate Text-to-Speech Still Being Investigated**
- **D2 Wanted BlueToad Integration in SunGuide; we Hope this will be in R5.1.1 or Soon After**
- **D4 Asked About SunGuide Permission Issue, Discussed at CMB Meeting**
- **FTE Miles Ahead Issue has Been Fixed**
- **D6 Requested a Listing of Hot Fixes on the SunGuide Web Site; This has Been Done**



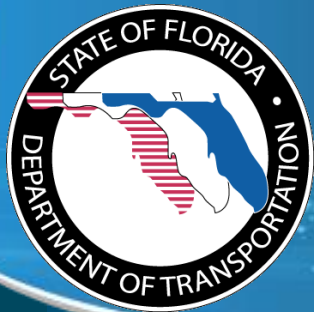
# Questions?



**Arun Krishnamurthy, FDOT**

**[Arun.Krishnamurthy@dot.state.fl.us.com](mailto:Arun.Krishnamurthy@dot.state.fl.us.com)**





# Action Items Review

Javier Rodriguez, CMB Chairman