Change Management Board Meeting

Thursday, September 17, 2015

Video Conference: CO-Burns Video Bridge 1

Audio Only: 850-414-3101

Do NOT Put On Hold **Call is Being Recorded**

GoToMeeting:
https://www2.gotomeeting.com/join/371021466

Welcome and Call for Quorum

Derek Vollmer, P.E., CMB Chairman

Announcements

- Introduction of Fred Heery, as State TSM&O Program Engineer
- CMB Meeting Invitees List

Agenda

Time	Item	Lead
1:30 – 1:40	Welcome and Call for Quorum	Derek Vollmer
1:40 – 1:45	Previous Meeting Recap & Action Item Review	Derek Vollmer
1:45 – 1:55	ITS WAN Update	Randy Pierce & Frank Deasy
1:55 – 2:10	SunGuide Software Update	Derek Vollmer
2:10 – 2:15	RITIS Update	Derek Vollmer
2:15 – 2:35	Ramp Metering System	Tucker Brown
2:35 – 3:05	Signals in SunGuide *(vote)*	Peter Vega

Agenda

Time	Item	Lead
3:05 – 3:15	Break (Tentative)	
3:15 – 3:30	Statewide ITS Architecture and Systems Engineering Update	Derek Vollmer
3:30 – 3:45	Open Discussion	Derek Vollmer
3:45 – 3:50	Review Action Items	Derek Vollmer

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

Derek Vollmer, P.E., CMB Chairman

Previous Meeting Action Items

1. CO to look into getting C2C connection data into RITIS. (Open Action Item)
2. CO to follow-up on Google Traffic data possibilities. (Open Action Item)
3. ITS WAN to send IP Allocation Plan to all the Districts by the next CMB meeting. (Open Action Item)
4. CO to look into operators not having to determine if the Waze event is a duplicate. (Open Action Item)

ITS Telecommunications Update

Randy Pierce & Frank Deasy, P.E.

ITS WAN Update

- ITS WAN – District IP Re-allocation Effort
  - All Districts have been notified of their assigned CIDR blocks for the Next Generation Statewide Network
  - District 5 is actively migrating to assigned CIDR blocks and this step must be completed prior to statewide adoption
  - District 6 and MDX are using new CIDR blocks for new deployments
- Multicast Re-Addressing
  - Districts should re-address their multicast devices now to resolve any overlapping addresses
  - D3, D4 & D6 completed their multicast addressing
  - D1, D5, D7 & MDX are in process
  - D2 and FTE not implemented at Layer 3 at this time
  - Multicast video can then be shared statewide

ITS WAN Update

- Tallahassee Fiber Ring
  - Configuration documentation developed and delivered to contracted vendor
  - Installation re-scheduled to Q3 2015, exact date to be determined
- Leased Services
  - District 6 to TERL circuit re-provisioned in June
  - Circuit now goes through District 7 to the TERL
  - Provides tertiary redundancy for District 7 to mitigate downtime due to I-4 Ultimate construction projects

ITS WAN Update

- FTE Fiber Use – Memorandum of Understanding Projects
  - Southeast Florida Fiber Re-route Project (D4/D6/Andytown/FTE Pompano/McArthur Sunrise) – splicing required at key FTE locations
  - Everglades Academy – now planning for RF links at the end of the HEFT rather than fiber optics – tie into existing FTE fiber at end of HEFT
  - District 5, Turkey Lake Redundancy Project – planning ongoing, dependent upon funding
- D5 to Turkey Lake – Redundancy connection
  - D5 work is completed
  - FTE fiber allocation along SR-528 is Green Buffer 33, 34, 35, and 36

ITS WAN Update

- ITS WAN – D5 to D7 Backbone Upgrade
  - Could be rolled into the D5 – Turkey Lake Redundancy Project
  - Upgrade optical path from OC-48 SONET to 10Gig DWDM
  - Reallocate existing equipment to spares inventory
- FTE Tolls Middleware Application
  - FTE Tolls has requested a consolidated connection over the ITS WAN for all Districts
    - D4 still on separate Layer 2 Connection via separate FDOT fiber
  - FTE Tolls connection to the ITS WAN being upgraded to a Layer 3 connection with routing to support the 95Express project and future Managed Lanes projects
    - Southeast Fiber Re-Routing
      - D4 work is completed
      - Waiting for FTE approval to access splice enclosures

QUESTIONS?

Randy Pierce & Frank Deasy, P.E.

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Frank.Deasy@dot.state.fl.us

SunGuide Software Update

Derek Vollmer, P.E., FDOT

Release 6.1 Major Features

- Configuration file editor
- Improved installation process
- Beacon Management Subsystem
- Software Administration Application (permissions)
- RWIS alerts and automatic responses

Release 6.1 Minor Features

- Report queue
- Video on desktop camera list
- CCTV ONVIF support
- Remote CCTV streams
- Terminate response plan button

- Compatible with .NET 4.5.2
- Video on desktop digital zoom
- New map tiles
- http://sunguidesoftware.com/releases/release-6-1-current

Release 6.1 Patch 1 Fixes

- Desktop video layouts not populating (FP 3275)
- Beacons not added to response plans (FP 3297)
- Inaccurate travel times at night (FP 3189)
- Camera blocking not working (FP 3162)
- http://sunguidesoftware.com/releases/release-6-1-p1

Release 6.2

- Map out of Internet Explorer
- Waze Phase 2
- WWD automatic responses
- Dismiss redundant TSS alerts
- Response plan improvements
- http://sunguidesoftware.com/releases/release-6-2-future

SunGuide - In the Pipe

- FP 3146 – Configure main video wall as default
- FP 2507 – Display coordinate vs actual coordinates
- FP 1886 – Merge message for C2C DMS
- FP 2303 – Camera preset permissions
- FP 2569 – Allow Camera PTZ in a tour
- FP 3195 – Blockage description when unconfirmed
- FP 3203 – Bridge wind sensors via GOES
- FP 3228 – NOAA weather data feed
- IE to WPF conversion effort

Status of Upgrades

- D3 Chipley – 6.1 installed week of July 20th
- District 2 Upgraded to Release 6.1 on August 11th
- City of Tallahassee Upgraded to Release 6.1 on August 31st
- CFX upgraded to Release 6.1 week of August 31st
- FTE scheduled for 6.1 upgrade week of October 5th
- D4 Arterials scheduled for 6.1 upgrade week of October 19th
- D4 anticipated upgrade to 6.1 end of October

QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us

RITIS Update

Derek Vollmer, P.E., FDOT

Open RITIS Issues

- Null Data / Poor Detector Health

  Causes:

  - No traffic
  - Detectors being deleted from system
  - Detector maintenance or malfunction
  - Firewall Issues
  - DAR not enabled

- Sum of Volume for Lanes and Zones Not Matching

  Cause:

  - Zone aggregation was ignoring some existing lanes

  Status:

  - All data from 09/11/2015 at 10:20am is correct
  - Zone historical data is being re-calculated and will be pushed to production
  - CO to start verifying fix on 9/22/2015

Future Plans for RITIS

- Develop a Webinar Training on RITIS
- Monthly Email Outreach to Update RITIS Users
  - Status of Open Issues
  - Resolution of Closed Issues
- Continue updating Change Management Board on RITIS issues

RITIS Issues

- Please send RITIS issues with detailed information to: Derek.Vollmer@dot.state.fl.us, Clay.Packard@dot.state.fl.us, and Kelli.Moser@dot.state.fl.us

QUESTIONS?

Derek Vollmer, P.E., FDOT

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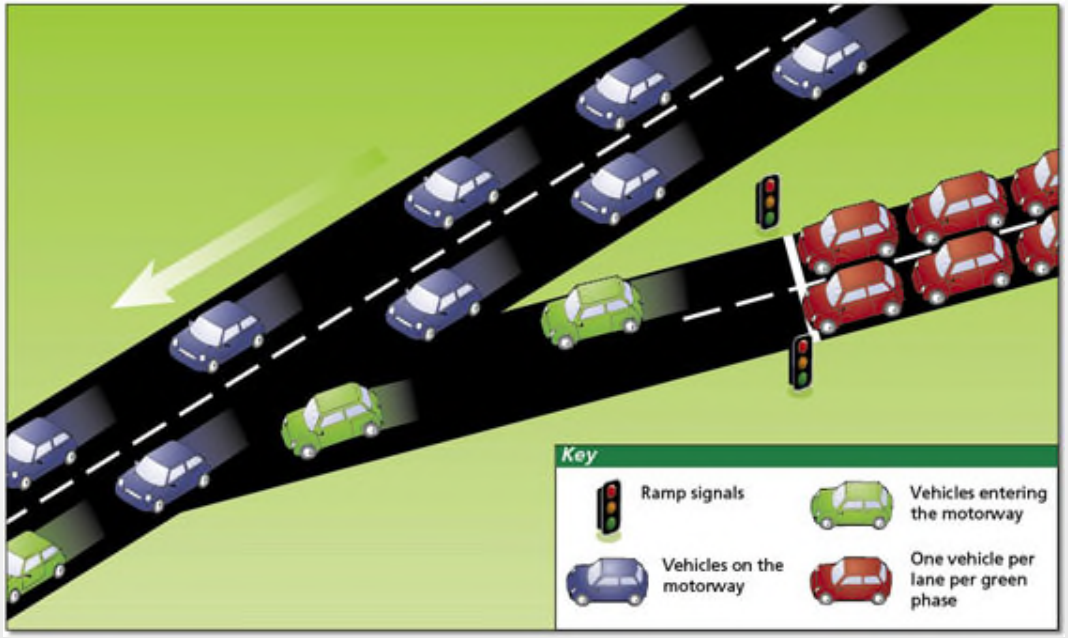
Ramp Metering System

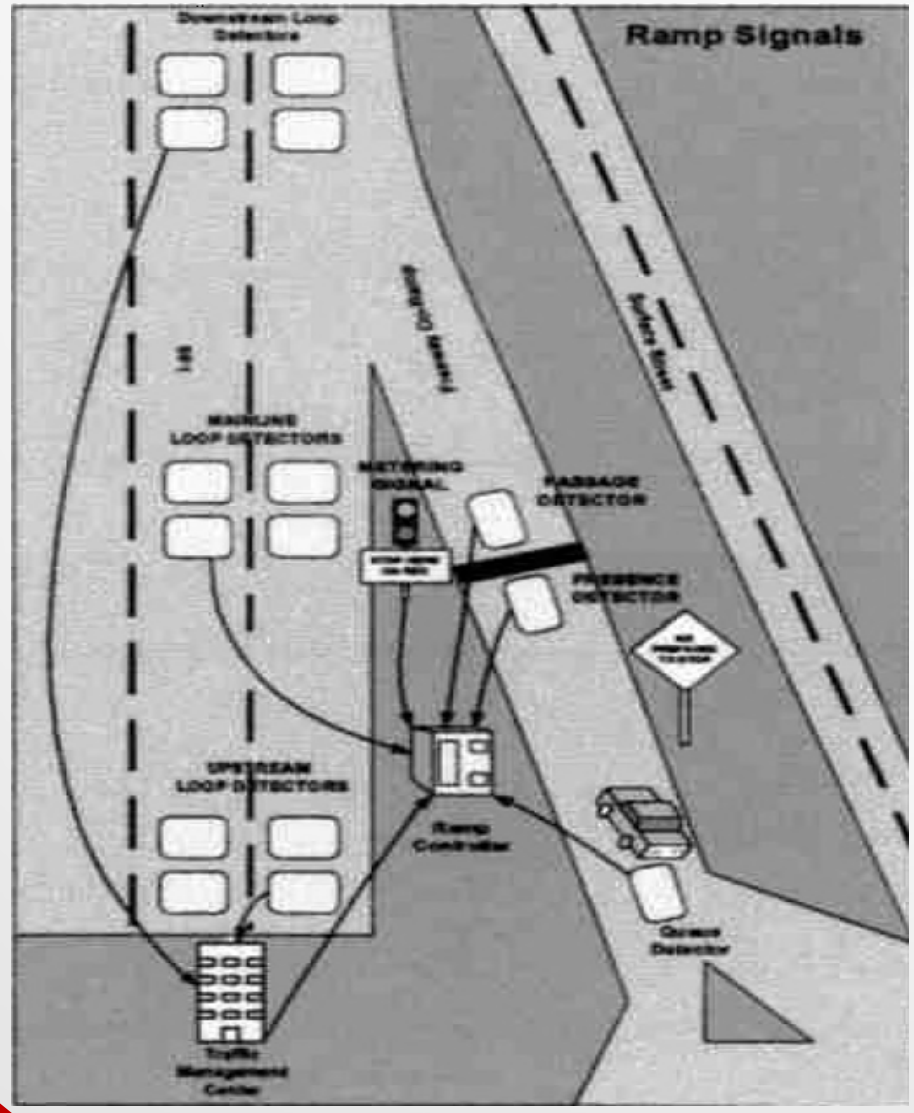
Tucker Brown, SwRI

Ramp Metering

- Ramping Metering uses a Ramp Meter Controller (RMC) at ramps to regulate the flow of traffic entering limited access roads according to current traffic conditions
- SunGuide can monitor these RMC's and set the algorithm that the controller should use



Setup

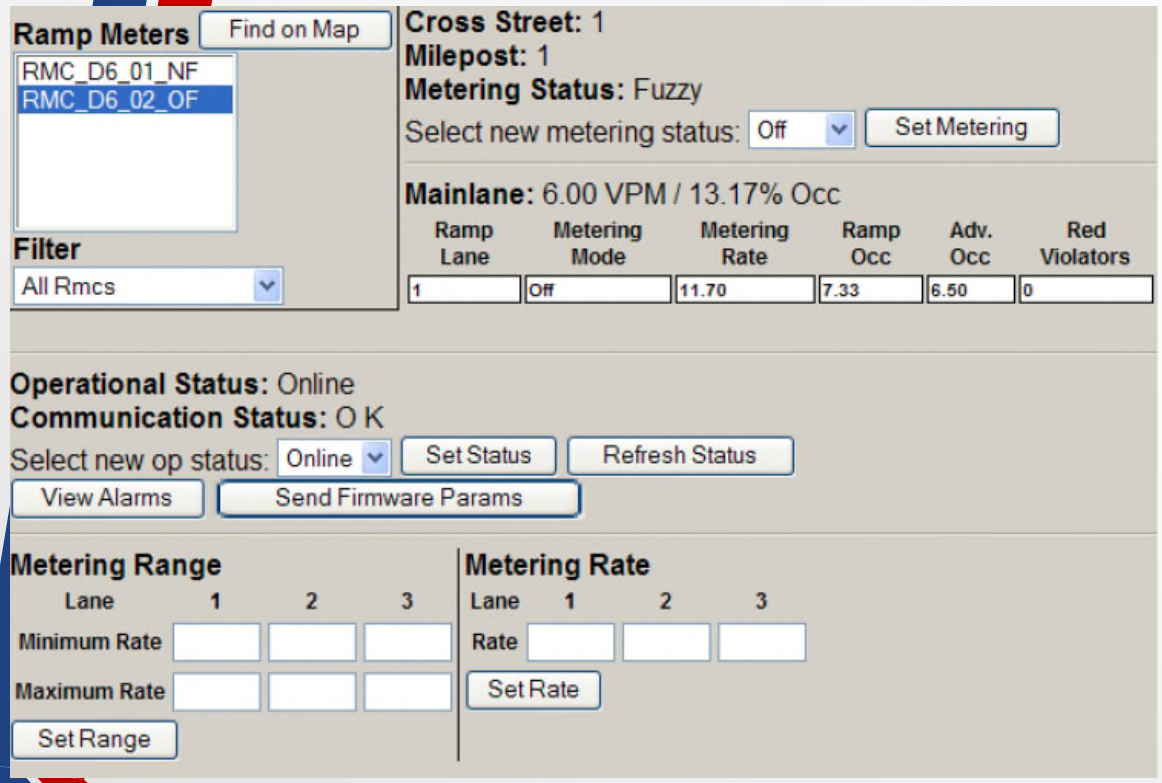


- Field Components
  - Detectors
    - Downstream
    - Upstream
    - Demand
    - Passage
    - Queue
  - Controller

Modes of Operation

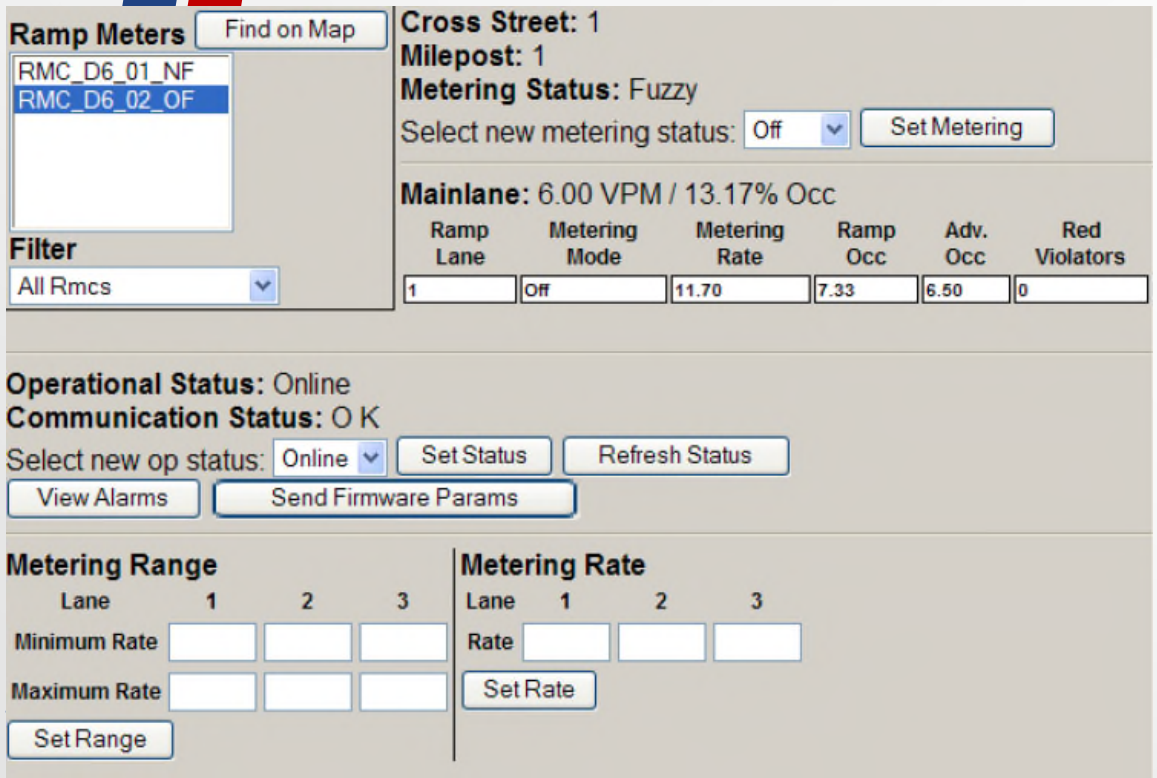
- Fuzzy Logic – SunGuide users a mix of inputs from mainline detectors and configurable firmware parameters determine the metering rate
- Local Metering Algorithm – Controller determines the rate based on firmware algorithm
- Off – No metering should occur

Device Status – Control Window



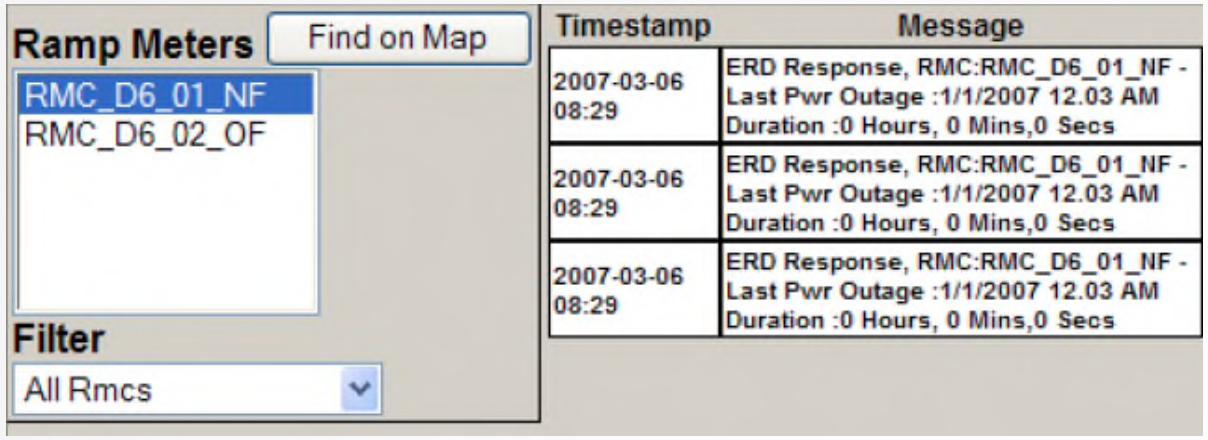
- Highlight the RMC device from the list
- Cross Street, Milepost, & Metering Status will refresh
- Measured amounts will refresh
  - VPM: Vehicles per minute
  - Occ: Percentage of occupancy
  - Metering Mode: Fuzzy / Local (RMC is on), or Off
  - Metering Rate: Rate of vehicles allowed onto the mainline
  - Ramp / Adv Occ: Ramp / Advanced Ramp occupancy
  - Red Violators: Count of red light violators
- Metering Status can be manually set
  - Fuzzy / Local: RMC is on and using Fuzzy / Local algorithm
  - Off: RMC is not operating

Device Status – Control Window



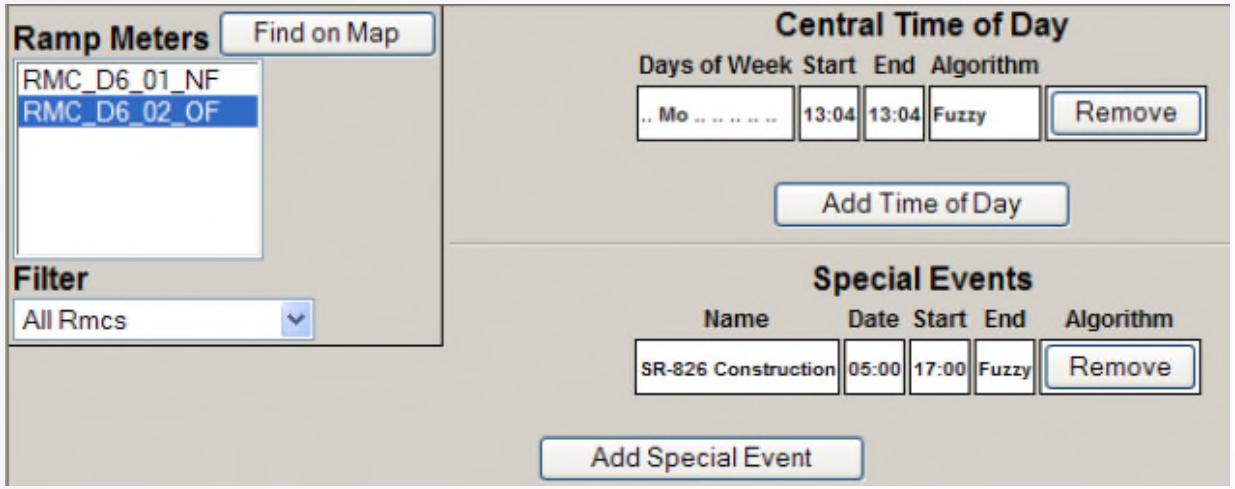
- Operational Stats: Online / Error / Offline
- Communication Status: OK / Error / Offline
- Manually set operational status: Online / Offline
- Metering Range: Allows operators to set the minimum/maximum rate (per lane) of vehicles that can be allowed to enter the mainline
- Metering Rate: Allows operators to set a starting rate (per lane) of vehicles that can be allowed to enter the mainline

Device Status – Alarm Window



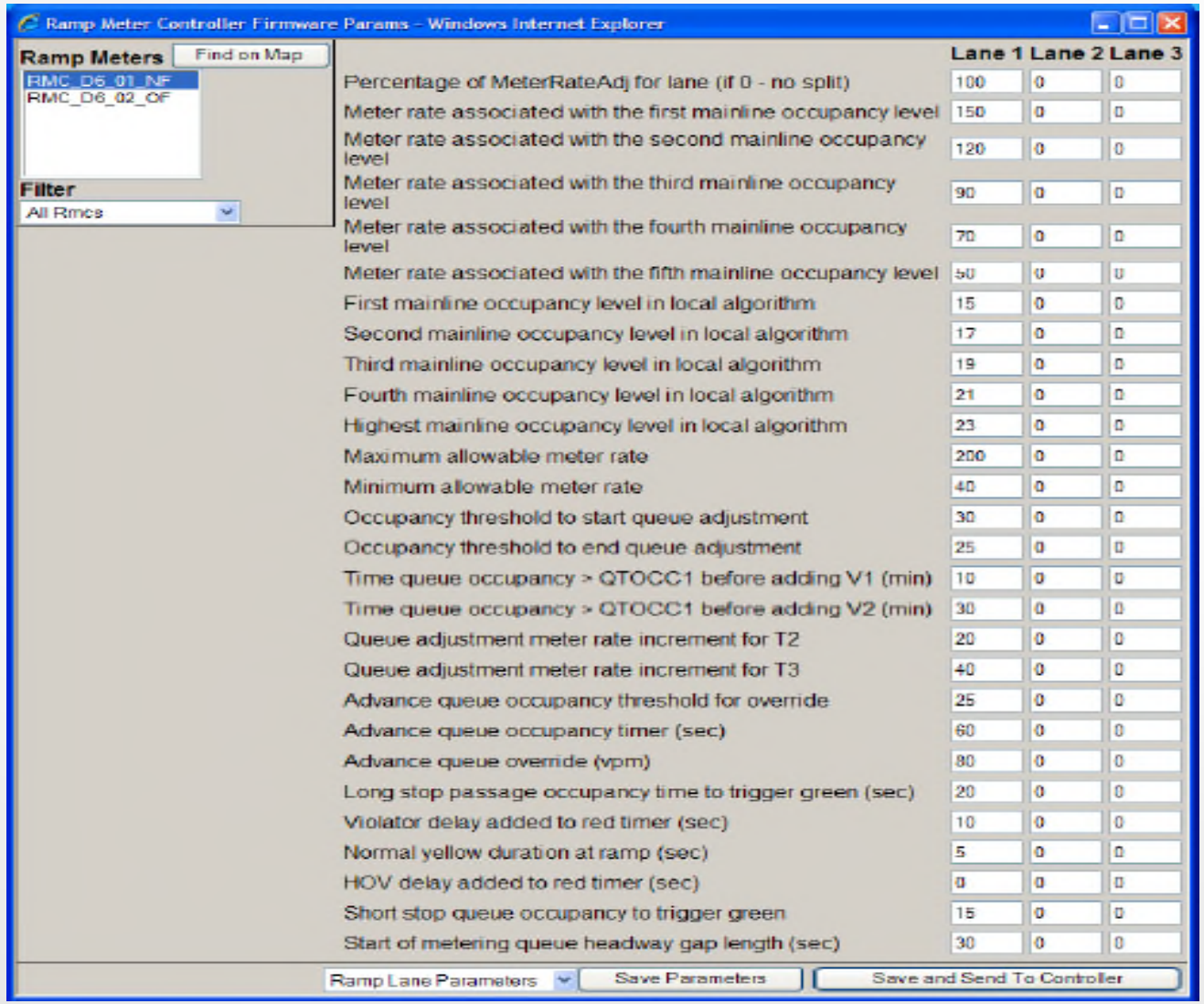
- Highlight the RMC device from the list
- Alarm list will refresh with timestamp, a brief description, and a duration of the alarm, if applicable
- Find on Map: Centers the operator map on the selected RMC
- Filter: Allows the list of devices to be filtered, options include: All, Out of Service, Active, by Roadway or by Group

Time of Day Window



- Highlight the RMC device from the list
- Schedule of “Central Time of Day” and “Special Events” algorithms lists will refresh
- Central Time of Day
  - Days of week and start/end times of when specified algorithms will be used
  - Additional schedules can be added/removed
- Special Events
  - Specified events can be added/removed that uses specified algorithms on a specified dates and time ranges
  - Special Events “trumps” Central Time of Day schedules

Updating Firmware



	Lane 1	Lane 2	Lane 3
Percentage of MeterRateAdj for lane (if 0 - no split)	100	0	0
Meter rate associated with the first mainline occupancy level	150	0	0
Meter rate associated with the second mainline occupancy level	120	0	0
Meter rate associated with the third mainline occupancy level	90	0	0
Meter rate associated with the fourth mainline occupancy level	70	0	0
Meter rate associated with the fifth mainline occupancy level	50	0	0
First mainline occupancy level in local algorithm	15	0	0
Second mainline occupancy level in local algorithm	17	0	0
Third mainline occupancy level in local algorithm	19	0	0
Fourth mainline occupancy level in local algorithm	21	0	0
Highest mainline occupancy level in local algorithm	23	0	0
Maximum allowable meter rate	200	0	0
Minimum allowable meter rate	40	0	0
Occupancy threshold to start queue adjustment	30	0	0
Occupancy threshold to end queue adjustment	25	0	0
Time queue occupancy > QTOCC1 before adding V1 (min)	10	0	0
Time queue occupancy > QTOCC1 before adding V2 (min)	30	0	0
Queue adjustment meter rate increment for T2	20	0	0
Queue adjustment meter rate increment for T3	40	0	0
Advance queue occupancy threshold for override	25	0	0
Advance queue occupancy timer (sec)	60	0	0
Advance queue override (vpm)	80	0	0
Long stop passage occupancy time to trigger green (sec)	20	0	0
Violator delay added to red timer (sec)	10	0	0
Normal yellow duration at ramp (sec)	5	0	0
HOV delay added to red timer (sec)	0	0	0
Short stop queue occupancy to trigger green	15	0	0
Start of metering queue headway gap length (sec)	30	0	0

QUESTIONS?

Derek Vollmer, P.E., FDOT

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Clay Packard, P.E., Atkins/FDOT

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Signals in SunGuide

(with vote)

Peter Vega, P.E., FDOT

Traffic Signal System Module

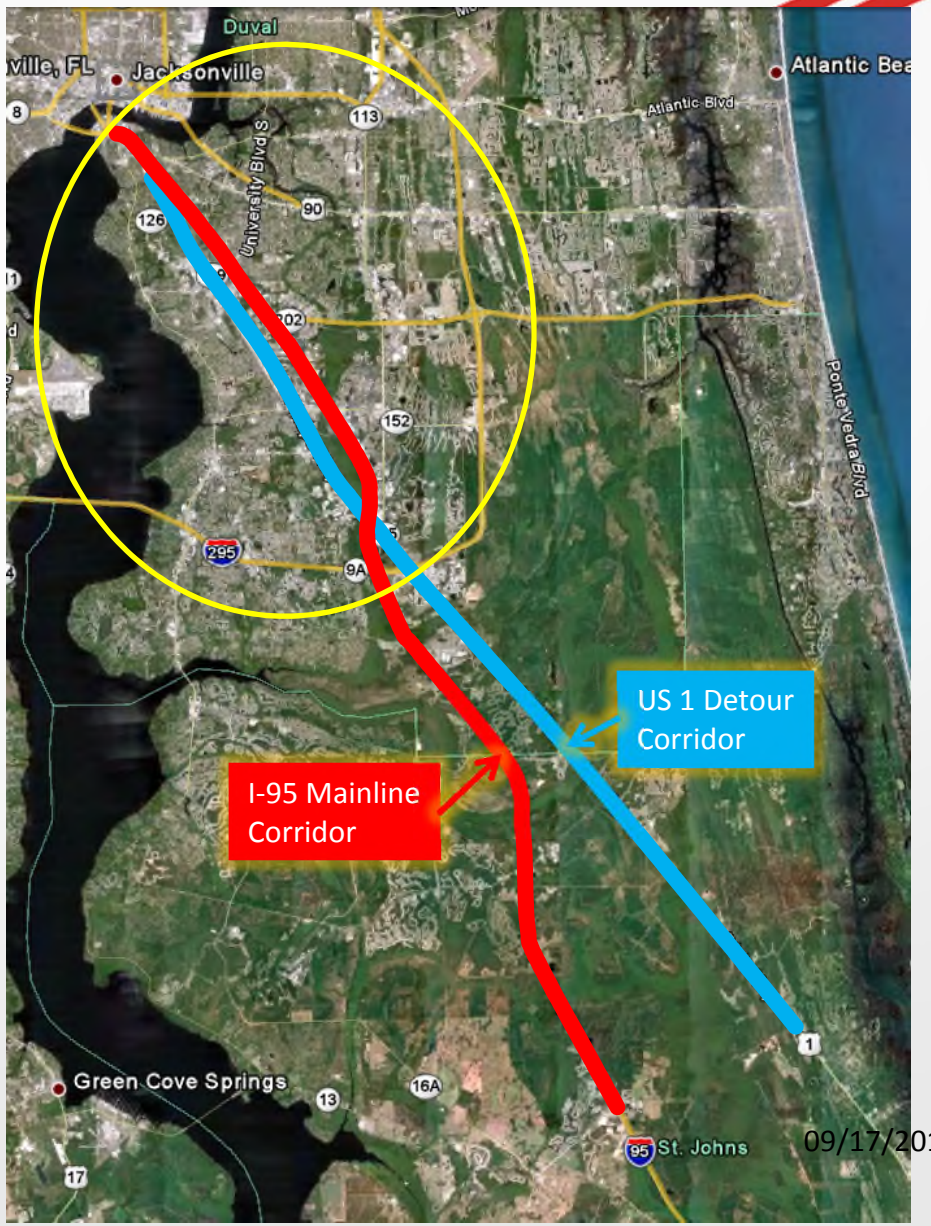
- Purpose
  - ICM Between US 1 and I-95 in south Jacksonville. ITS devices already deployed.
  - This corridor has the highest volumes in Jacksonville with major incidents on a weekly basis.
  - US 1 runs parallel to I-95 for 12 miles with interchanges at two ends.
  - US 1 has 18 traffic signals between I-95 interchanges.
  - There are four major roadways between these interchanges to reroute traffic.
  - A total of 30 traffic signals will be utilized for ICM.
- Plan
  - ITS Consultants will develop timing plans for various incident scenarios on I-95.
  - City of Jacksonville Traffic Engineer and FDOT Traffic Signal Engineer will review/approve new timing plans.
  - Timing plans shall be developed for mild, moderate and major events.
  - ATMS.now shall be interfaced with SunGuide so new timing plans can be activated.
  - ATMS.now shall also provide traffic signal status information to SunGuide.

Traffic Signal System Needs

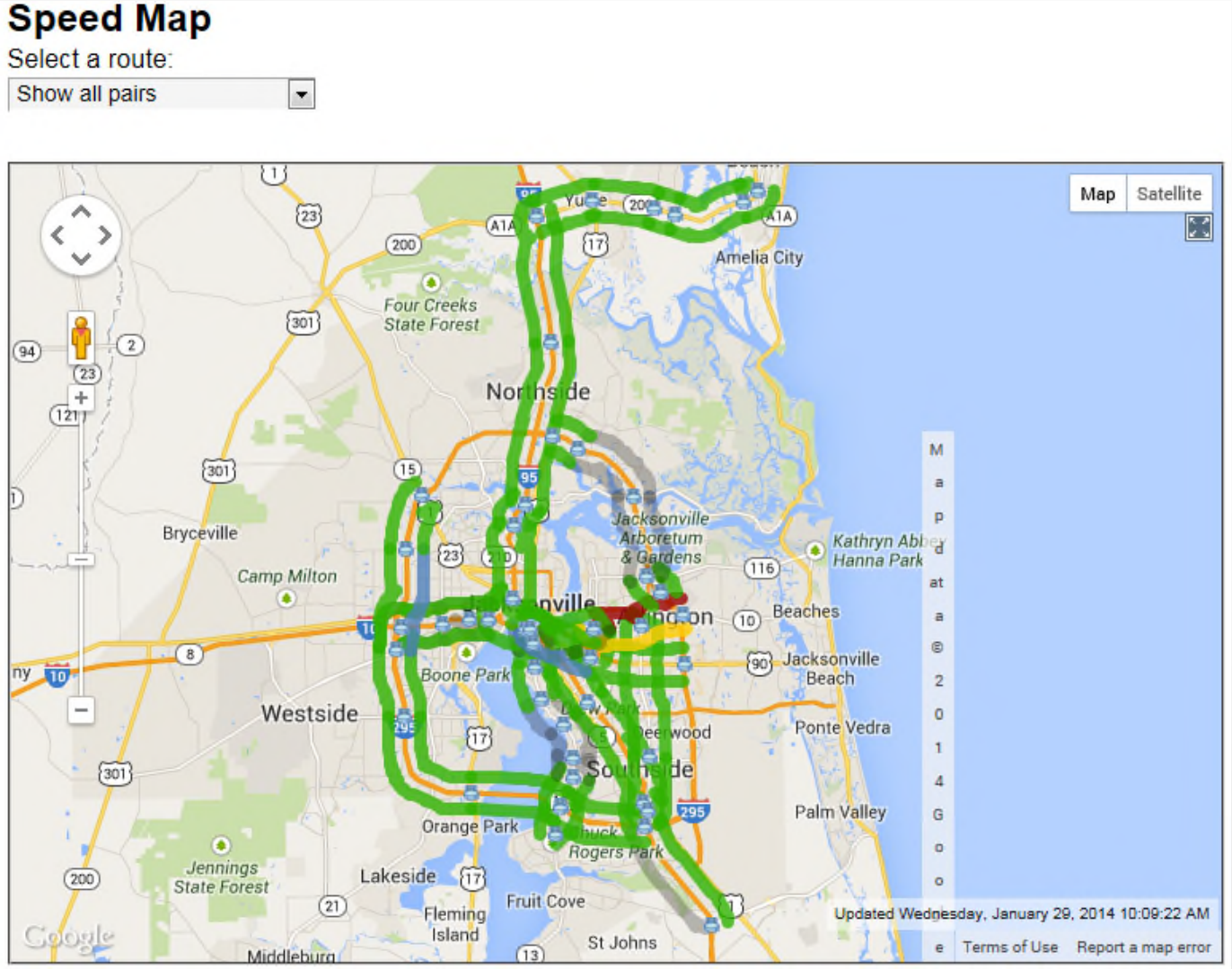
- Traffic Signal software IDS to support the processing of timing plans
- Changes to SunGuide for new map layer
- Changes to the GUI to support all user interaction changes needed
- Additional configurability to enable or disable retiming functions

Dynamic Detour System

- ConOps and Operational Scenarios
- I-95 and US 1 Corridor
- Pilot Corridor
  - DRIP Study
  - Planned and On-Going Work
  - ITS Deployment, BlueToad®, ATMS, etc.
  - Integration of timing plans from ATMS.now into SunGuide



BlueTOAD


Speed Map
Select a route:
Show all pairs
Map
Satellite
Amelia City
Four Creeks State Forest
Northside
Bryceville
Camp Milton
Jacksonville Arboretum & Gardens
Kathryn Abbey Hanna Park
Beaches
Jacksonville Beach
Boone Park
Westside
Ponte Vedra
Palm Valley
Orange Park
Rogers Park
Jennings State Forest
Lakeside
Fleming Island
Fruit Cove
St Johns
Middleburg
Updated Wednesday, January 29, 2014 10:09:22 AM
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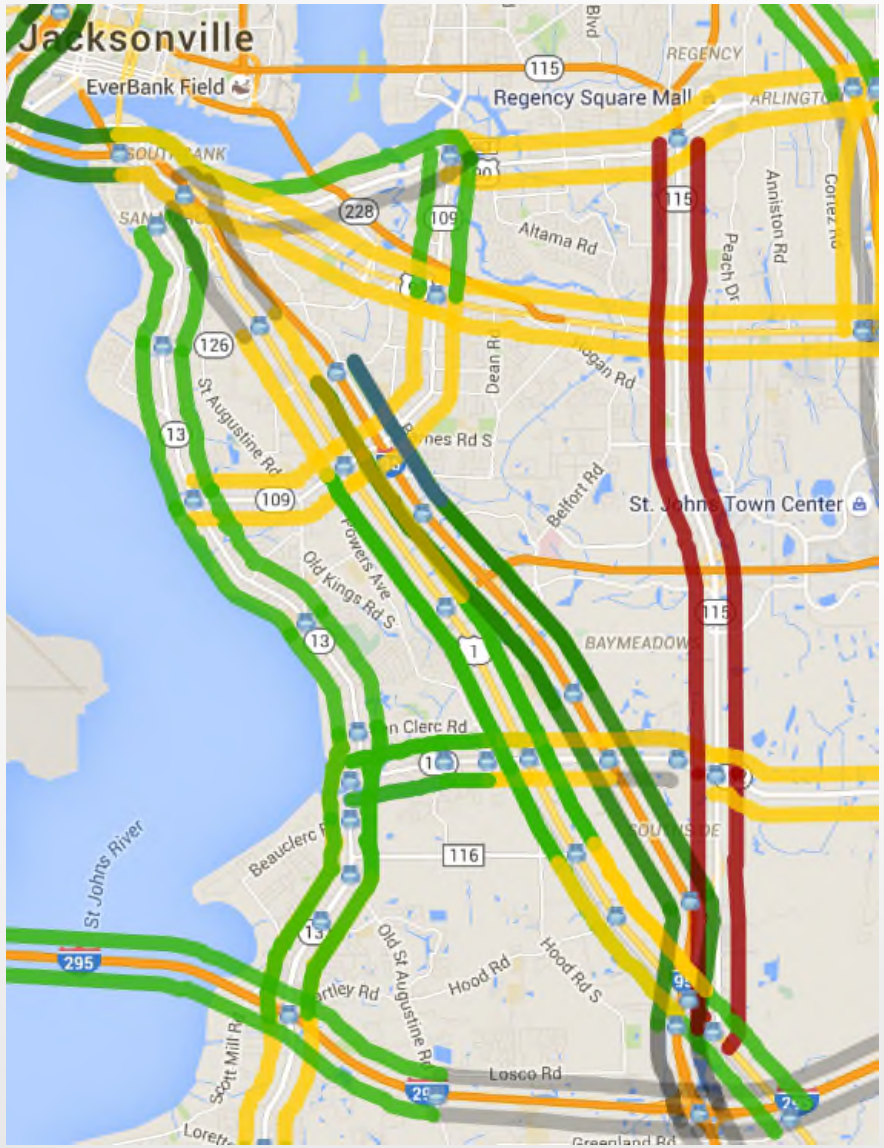
BlueTOAD


Jacksonville
EverBank Field
Regency Square Mall
REGENCY
115
228
109
126
13
Altama Rd
Peach Dr
Anniston Rd
St Augustine Rd
Dean Rd
Belfort Rd
St. Johns Town Center
Old Kings Rd S
Powers Ave
BAYMEADOWS
Clerc Rd
St Johns River
Beauclerc
116
295
Hood Rd
Hood Rd S
Old St Augustine Rd
Losco Rd
Greenland Rd

Systems Component and Operation

- Key Decision Points:
  - Freeway and Arterial DMS Signs
  - Trailblazer Electronic Display Signs
- MVDS and BlueTOAD® Data
- US 1 Traffic Signal Re-timing and ATMS Deployment

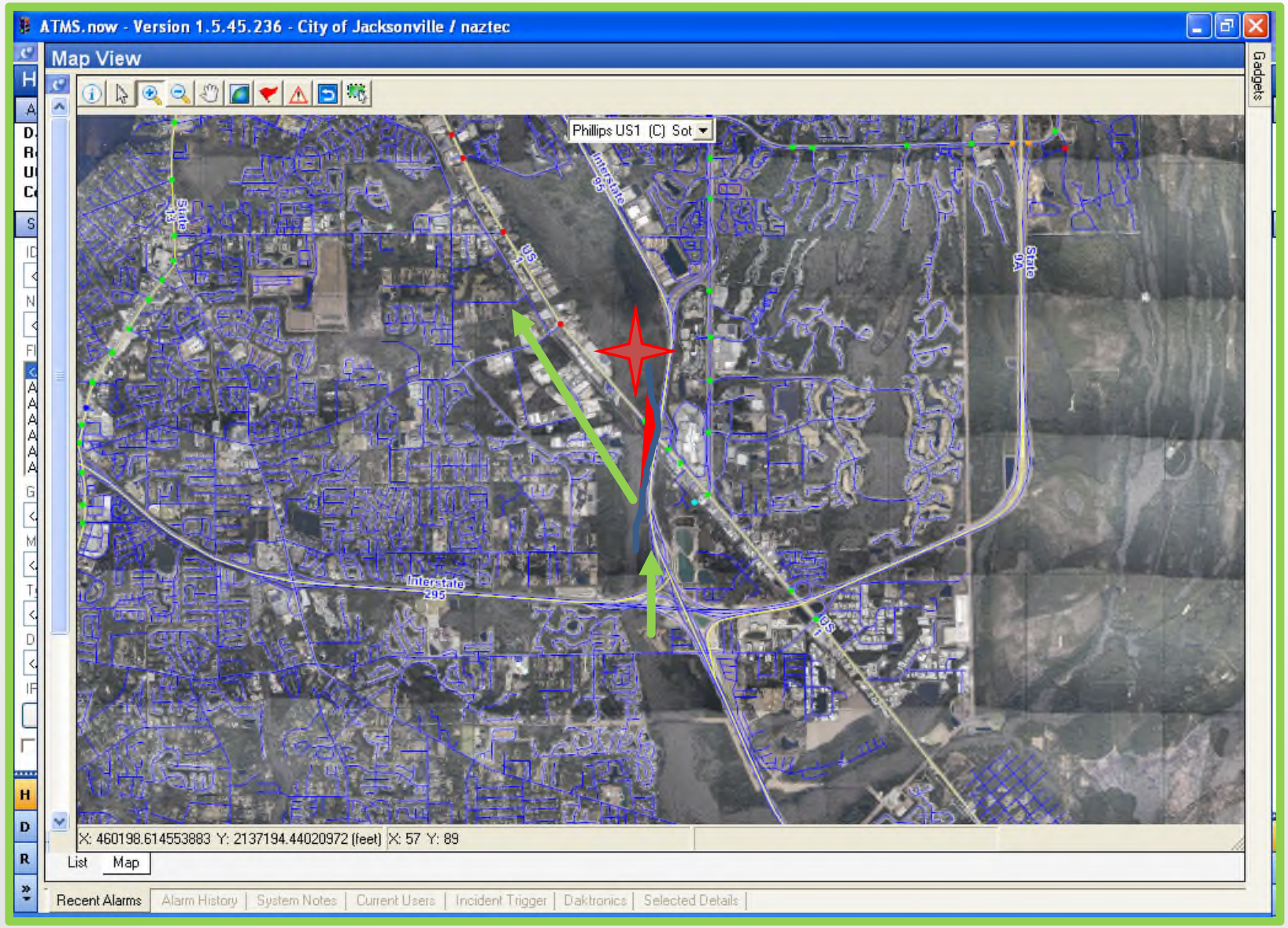
Integrated Corridor Management Pilot

- In 2013 FDOT D2 worked with the South West Research Institute (SWRI) and Trafficware to create a new section for the statewide SunGuide software which would allow TMC operators to dynamically change signal timing or divert traffic depending upon the type of incident.

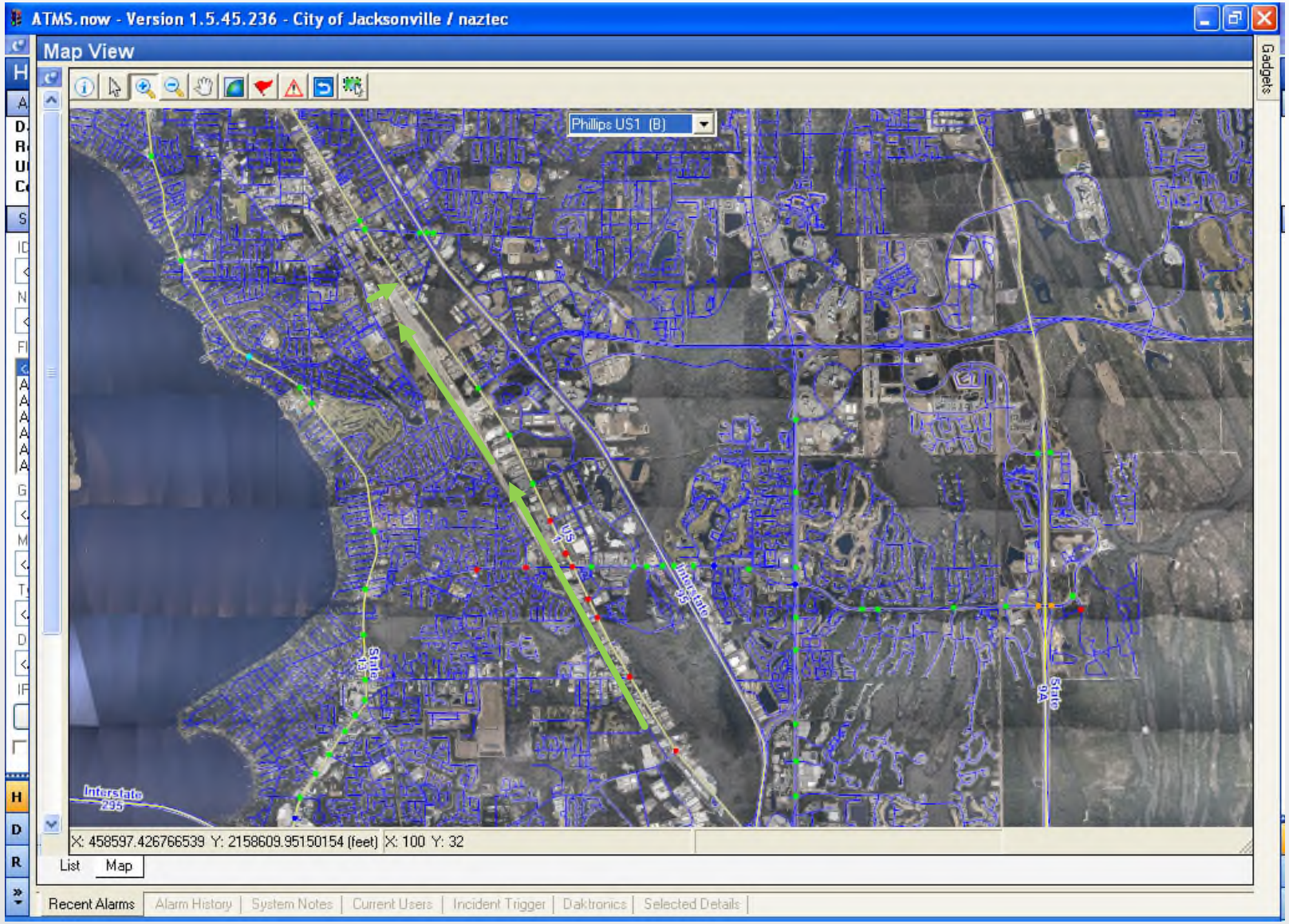
Integrated Corridor Management Pilot

- Once SunGuide update is complete traffic on I-95 can be diverted to US-1 and TMC operators can monitor congestion, post detour messages and change signal timing to better control traffic flow on US-1.
- Similarly an incident on US-1 could result in detouring traffic to I-95 to avoid excess congestion on US-1.

South End of US 1



North End of US 1



Considerations

- Develop the capability for any Traffic Signal software (up to vendor)
- Develop for authorized use only
- Future: Develop preset alarms to return to normal state

Cost

- Cost: $72,500

QUESTIONS?

(VOTE)

Peter Vega, P.E., FDOT

Peter.Vega@dot.state.fl.us

Break – 10 min

http://ipadstopwatch.com/timer.html

Statewide ITS Architecture & Systems Engineering Update

Derek Vollmer, P.E., FDOT

ITS Architecture Updates

- District 1 and 7 ITS Architecture updates were completed 01/09/2015
- District 5 and Turnpike ITS Architecture were completed 04/08/2015
- Statewide, Districts 2 & 3 were completed 08/27/2015
- Remaining Districts ITS Architecture updates will be completed by 12/31/2015
- Districts 4 & 6 Updates Start 08/09/2015 and End 11/28/2015

ITS Architecture Events

- Project Kickoff Meeting – 09/05/2014
- Eight Architecture Kickoff Meetings (All Completed)
- Stakeholder Interviews (All Except 4 & 6 Completed)
- Stakeholder Workshops (All Except 4 & 6 Completed)
- Final Architecture Meeting

Systems Engineering

- LAP training scheduled for October 13th
- Ask FHWA again for some exceptions – Multiple District requests
- Review comment responses and finalize procedure
- Review and update templates
- Create templates for required documentation
- Work with Districts to create a repository of documentation for reuse

QUESTIONS?

Derek Vollmer, P.E., FDOT

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Open Discussion

Derek Vollmer, P.E., FDOT

Review Action Items

Derek Vollmer, P.E., FDOT