Webcast and Audio Information

- The call-in phone number is: **1-xxx-xxx-xxxx & enter xxxxxxx#** at the prompt
- **Participants will be in “Listen Only” mode throughout the webinar**
- Please press *0 to speak to an operator for questions regarding audio
- Please call 484-557-7009 for difficulties with the web or audio application
- The webinar will be recorded
- **All materials will be available to participants after the web meeting**
Asking Questions

• Please pose your questions using the chat box

• Questions will be monitored then answered by the speakers at the end of the webinar
Welcome

Jesse Buerk
DVRPC, PDA Suite User Group Co-chair
## Participating Agencies

<table>
<thead>
<tr>
<th>Agency</th>
<th>Agency</th>
<th>Agency</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne Arundel County</td>
<td>ITE</td>
<td>North Carolina DOT</td>
<td>TRANSCOM</td>
</tr>
<tr>
<td>Baltimore Metropolitan Council</td>
<td>Maricopa AOG (AZ)</td>
<td>North Jersey TPA</td>
<td>University of Virginia</td>
</tr>
<tr>
<td>City of Norwalk</td>
<td>Maryland DOT - SHA</td>
<td>North Virginia Transportation Authority</td>
<td>Vermont AOT</td>
</tr>
<tr>
<td>CORE MPO (GA)</td>
<td>MetroPlan Orlando</td>
<td>NREL</td>
<td>Virginia DOT / VTRC</td>
</tr>
<tr>
<td>Delaware Valley Regional Planning Commission</td>
<td>Missouri DOT</td>
<td>PEMA</td>
<td>Volvo Group North America</td>
</tr>
<tr>
<td>District DOT</td>
<td>MWCOG (DC)</td>
<td>Pennsylvania DOT</td>
<td>UMD – CATT Lab &amp; CATT Works</td>
</tr>
<tr>
<td>Florida DOT</td>
<td>New Hampshire DOT - TSMO</td>
<td>Rockingham Planning Commission</td>
<td>I-95 Corridor Coalition &amp; support</td>
</tr>
<tr>
<td>Florida’s Turnpike Enterprise</td>
<td>New Jersey DOT (and NJIT)</td>
<td>South Carolina DOT</td>
<td></td>
</tr>
<tr>
<td>Georgia DOT</td>
<td>New York State Thruway Authority</td>
<td>Texas Transportation Institute</td>
<td></td>
</tr>
</tbody>
</table>
Topics for today

› Coalition Update
› Follow-ups from the Last Meeting
› PDA Suite: What’s New / Coming Soon
› FDOT: Use of RITIS to Assess Traffic Impacts of Hurricane Irma Evacuation
› BMC’s Thanksgiving Travel Advisory Review
› Agency Input Session
› Wrap-up / Next Meeting
› Instant Polls throughout

The CATT Lab’s new state-of-the-art Conference Room
Introductions

Denise Markow, PE  
I-95 Corridor Coalition  
Director

John Allen  
UMD CATT Lab  
Agency Support

Ed Stylc  
Baltimore Metropolitan Council  
Planner Analyst

Derek Vollmer, PE  
Florida DOT  
State ITS Software Engineer
Coalition Update
Coalition Update

> Recent Meetings
  – CAV Workshop – December 11 & 12, 2017
  – TIM Heavy Towing Workshop – December 1, 2017
  – Volume & Turning Movement Steering Committee meeting – November 9, 2017
  – CAD Integration Webinar – October 12, 2017
  – Crowdsourcing Summit (Member Agencies & Waze) – Sept 14, 2017

> Upcoming Meetings
  – RITIS User Group Meeting – RITIS User Group meeting (via web)- January 18, 2018

> Reminder
  – We will be changing the PDA Suite User Group meeting schedule, from once every quarter to once every four months
Action Item
Follow-up
Action Item Follow-up
(from the 08.17.17 Meeting)

1. Members suggested adding the “day of week” to the date header in Trend Map

✓ Deployed & available
Action Item Follow-up
(from the 08.17.17 Meeting)

Kelly Wells (NCDOT) mentioned that she would like better capabilities in PDA Suite for arterial signal system analysis; importantly for signal system prioritization and evaluation.

- PennDOT is funding a project to build arterial performance measure capabilities in PDA Suite.
Action Item Follow-up
(from the 08.17.17 Meeting)

3 Enable MPO boundaries (MPAs)
in the MAP-21 Dashboard

✓ Deployed & available
What’s new...
Under **Region**, select a state and/or county, then “Interchange” in the **Road Classes** dropdown...

...when you click “➕ Add region”, all available interchange ramps will be shown on the map.

Selecting Ramps in Suite Tools **region query screen**
Selecting Ramps in Suite Tools map query screen

Under **Map**, choose “Interchange” in the **Road Classes** dropdown...

...then draw a shape to select interchange desired ramps.
The “✚ Add another time range” button has been moved to the query page, to streamline the workflow.
Individual metrics tables are now combined into a single worksheet, improving readability.
### Bottleneck Ranking - Using INRIX data

#### Bottleneck Ranking Table for I-95 between November 1, 2017 and November 24, 2017 (78 total)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Map</th>
<th>Head Location (approximate)</th>
<th>Average max. (ft)</th>
<th>Average daily delay (ft)</th>
<th>Total duration (days)</th>
<th>All Events fluid...</th>
<th>Base Impact*</th>
<th>Base impact weighted by†:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I-95 @ GIRARD AVE/EXIT 23</td>
<td>3.64</td>
<td>5 h 29 m</td>
<td>6 d 00 h 18 m</td>
<td>0</td>
<td>29,455.70</td>
<td>1,097,952.23</td>
<td>55,506.78</td>
</tr>
<tr>
<td>2</td>
<td>I-95 @ PA-329/E 6TH ST/EXIT 6</td>
<td>1.11</td>
<td>5 h 19 m</td>
<td>6 d 04 h 24 m</td>
<td>2</td>
<td>19,485.70</td>
<td>375,718.64</td>
<td>18,220.69</td>
</tr>
<tr>
<td>3</td>
<td>I-95 @ US-322/EXIT 3</td>
<td>1.74</td>
<td>3 h 07 m</td>
<td>3 d 03 h 01 m</td>
<td>0</td>
<td>7,864.24</td>
<td>282,378.74</td>
<td>12,714.40</td>
</tr>
<tr>
<td>4</td>
<td>I-95 @ PA-611/2ND ST/EXIT 17</td>
<td>3.22</td>
<td>1 h 43 m</td>
<td>1 d 17 h 23 m</td>
<td>0</td>
<td>7,872.70</td>
<td>300,860.05</td>
<td>16,163.61</td>
</tr>
<tr>
<td>5</td>
<td>I-95 @ DELAWARE AVE/EXIT 23</td>
<td>1.70</td>
<td>1 h 50 m</td>
<td>1 d 20 h 05 m</td>
<td>0</td>
<td>4,251.42</td>
<td>151,246.04</td>
<td>7,991.29</td>
</tr>
<tr>
<td>6</td>
<td>I-95 @ BRIDGE ST/EXIT 27</td>
<td>3.61</td>
<td>48 m</td>
<td>10 h 23 m</td>
<td>0</td>
<td>4,221.97</td>
<td>164,392.69</td>
<td>10,540.36</td>
</tr>
<tr>
<td>7</td>
<td>I-95 @ GIRARD AVE/EXIT 23</td>
<td>2.53</td>
<td>48 m</td>
<td>10 h 32 m</td>
<td>0</td>
<td>3,114.82</td>
<td>114,410.24</td>
<td>6,832.85</td>
</tr>
</tbody>
</table>

- **Bracketed Results Groupings**

- **Base Impact***

- **Base impact weighted by†:**
  - Magnitude of Speed Drops
  - Severity of Congestion
  - Estimated Total Delay

---

* - sum of the queue lengths over the duration of the bottleneck

† - new feature being developed to toggle between value and rank

Click on a column header to sort the table to that measure

**External Tool Links**

**I-95 Corridor Coalition › Probe Data Analytics Suite User Group**

December 14, 2017
Performance Charts linked to bottleneck ranking

Speed for I-95 S @ GIRARD AVE/EXIT 23
Averaged per five minutes for November 01, 2017 through November 24, 2017
Southbound

November 01, 2017 through November 24, 2017 8:05 AM
Speed: 27.4 mph
50th%: 17.4 mph - 71.8 mph
25/75%: 21.7 mph - 85.3 mph

November 01, 2017 through November 24, 2017 5:35 PM
Speed: 36.5 mph
50th%: 21.4 mph - 65.3 mph
25/75%: 28.7 mph - 69.5 mph
User Delay Cost linked to bottleneck ranking
Congestion Scan linked to user delay cost

I-95 Corridor Coalition › Probe Data Analytics Suite User Group

December 14, 2017
Instant Poll

1. Would you benefit from an exclusive Bottleneck Ranking Focus Session? (overview / tutorial / demo / Q&A)

- Yes, definitely!
- No thanks
Canada/Mexico border crossing data added

Access TMC segment data for Canada and Mexico (within 5 mi of US border crossings)
NPMRDS v2 now has a single resource link

https://npmrds.ritis.org/analytics/resources
## Major Feature Deploy Status for cy 2017

### Q1 (Jan-Mar)
- Query Submission pages Flash Player dependency removed
- “My Reports” New Functionality
- MAP-21 Final Rule Widgets
- Removal of TMC and Date range restrictions

### Q2 (Apr-Jun)
- Performance Charts - custom graph formatting for exports*
- Bottleneck Ranking with new ranking measures*
- NPMRDS Massive Data Downloader Update
- Dashboard Update for MAP-21 Final Ruling

### Q3 (July-Sep)
- TMC selection by map
- Download travel time in seconds (per MAP-21 specs)
- Work Zone Performance Monitoring Application
- NPMRDS Coverage Map app
- Performance Summaries enhancements
- MPO boundary selection for MAP-21 widgets

### Q4 (Oct-Dec)
- Map tiling & rendering performance updates
- Advanced Time Selection
- Basic O-D Data Analytics - Phase I **
- Sub-segment Data in results pages***
- Results pages Flash Player dependency removed (Q4+)

---

* These features were funded by PennDOT
** Will require purchase of O-D Data from a vendor, and may be independent of the PDA Suite
*** Requires sub-segment data from a vendor and may require additional storage

- ✓ - complete
- ✓ - in progress

---

I-95 Corridor Coalition › Probe Data Analytics Suite User Group

December 14, 2017
2017 Q3 Deploy Summary Table is available at: http://i95coalition.org/projects/probe-data-analytics/ on the “New Features” tab
FYI since Q2 2016, we’ve deployed...

- **11** New Features
- **41** Functional Enhancements
- **15** Significant Bug Fixes
Coming soon...
RITIS Modernization work-in-progress

- New look
- New layout
- New features
- Better integration
- Targets your needs
Instant Poll

2 Would you like to have a walk-through of the new RITIS when it’s released?

- Yes, definitely!
- I’d rather experiment on my own
- No, don’t have an interest
MAP-21 Tools upcoming new features

> Expanded graph timeline for multi-year comparisons

> Trend-line capabilities to aid in target-setting

> An “easy button” for immediately creating all of the files & deliverables for submission to FHWA*

* - pending final format release
Instant Poll

Has your agency begun to use PDA Suite tools for the MAP-21 measures?

- Yes, we have started
- No, but we plan to
- No, don’t plan to use these tools
Thanks!

For more information, please contact:

John C. Allen
The Center for Advanced Transportation Technology Laboratory
jallen35@umd.edu | 215.666.3057
Use of RITIS to Assess Traffic Impacts of Hurricane Irma Evacuation

Derek Vollmer, PE
State ITS Software Engineer
Florida Department of Transportation
Use of Regional Integrated Traffic Information System (RITIS) to Assess Traffic Impacts of Hurricane Irma Evacuation
Mandatory Evacuation

• September 4th Florida Declares State of Emergency to prepare Florida for Hurricane Irma

• Estimated 6.3 million people ordered to evacuate

• Evacuation by County

“If you have been ordered to evacuate, you need to leave now…”
- Gov. Rick Scott

Source: The Weather Channel
Background - Irma’s Path Prediction

Source: National Hurricane Center
Irma’s Path Prediction Shift Westward

Source: National Hurricane Center
Emergency Shoulder Use Implemented

- Plans were prepared prior to hurricane season
- I-75 northbound
  - Florida Turnpike to Georgia
- I-4 eastbound
  - Tampa to west of Orlando
Emergency Shoulder Use for Evacuation
Emergency Shoulder Use on I-75

• September 7th
  ▪ Emergency Shoulder Use (ESU) Implementation at 8PM
  ▪ I-75 from Wildwood to CR136 north of I-10

• September 8th
  ▪ Terminus was extended to the Georgia State Line
  ▪ Start was extended approximately 2 miles

• September 9th
  ▪ ESU operation terminated at approximately 11AM
Emergency Shoulder Use on I-75

• Operating Conditions
  ▪ Heavy congestion
  ▪ Free flow conditions in various pockets

• Statistics
  ▪ 18 Emergency Roadside Assistance Vehicles assisted 509 motorists
  ▪ Zero Fatalities
  ▪ Few injuries reported from crashes
    • Crashes: rear-ends and side swipes due to careless driving
Emergency Shoulder Use on I-4

September 9\textsuperscript{th}

- Implementation at 3:00PM
- I-4 from 50\textsuperscript{th} Street in Tampa to the Western Beltway (SR429) in Orlando
- ESU terminus extended to Central Florida Greenway (SR 417)
- Terminated at approximately 8PM
Emergency Shoulder Use on I-4

- Operating Conditions
  - Heavy congestion
  - Free flow conditions in various pockets
- Statistics
  - 6 Emergency Roadside Assistance Vehicles assisted 26 motorists
  - Zero Fatalities
Why Shoulder Use Versus One-Way

1. Able to use in overnight hours
2. Allowed emergency vehicle access from opposing direction
3. Allowed post storm response conveys to move into Florida before returning traffic
FDOT’s RITIS Data Resources & Tools

- Microwave Vehicle Detection Systems
  - 5-minute data
  - Speeds
  - Volumes
  - Were not configured to measure shoulders
- HERE Probe Data
  - Speeds
- SunGuide Freeway Incidents
- Detector Explorer
- Congestion Scan
- Massive Data Downloader
FDOT RITIS MVDS Detector Map

- No ITS between Gainesville and the Georgia State line on I-75
- No ITS between Jacksonville and Tallahassee on I-10
RITIS Detector Tool - Selection

- Select detectors
  - Individually
  - Selection box
- Add them to the Queue
RITIS Detector Tools - Export

• Select date ranges and times
• Select aggregation
• Download link e-mailed to you
• Data in CSV format for easy use
Emergency Shoulder Use – MVDS Volumes

Volume (VPH)

*Sept 2017

Consistent Volume

**Historical

ESU Implemented

Source: MVDS Data

* Sept 2017: Detector MVDS I-75 at MM342.6 NS and Detector MVDS I-75 at MM348.7 in Marion County
** Historical: I-75 S, Marion County (MM 342.6) MVDS
Note: Shoulder volume is not included in the chart as MVDS is not configured to collect shoulder data
Emergency Shoulder Use – MVDS Speeds

Source: MVDS Data

* Sept 2017: Detector MVDS I-75 at MM342.6 NS and Detector MVDS I-75 at MM349.7 in Marion County

Note: Shoulder speed is not included in the chart as MVDS is not configured to collect shoulder data
Evacuation Travel Time I-75 NB (I-4 – State Line) Hours

X = Travel Time at Free Flow Speed
Over Max Time (Over 24-Hr Average Time)
Evacuation Travel Time I-95 NB (US 1 – State Line) Hours

Hurricane Irma Evacuation Travel Time - I-95 NB (US1 - State Line)

X = Travel Time at Free Flow Speed
Over Max Time (Over 24-Hr Average Time)

<table>
<thead>
<tr>
<th>Days before Landfall</th>
<th>Max (Evacuation in Peak Hours)</th>
<th>Min (Evacuation in Off-peak Hours)</th>
<th>24-hour Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-days before Landfall (Sept 06, 2017)</td>
<td>10.16</td>
<td>6.53</td>
<td>5.99</td>
</tr>
<tr>
<td>4-days before Landfall (Sept 07, 2017)</td>
<td>8.41</td>
<td>6.23</td>
<td>5.96</td>
</tr>
<tr>
<td>3-days before Landfall (Sept 08, 2017)</td>
<td>7.86</td>
<td>6.12</td>
<td>5.92</td>
</tr>
<tr>
<td>2-days before Landfall (Sept 09, 2017)</td>
<td>7.01</td>
<td>5.59</td>
<td>5.81</td>
</tr>
<tr>
<td>Day before Landfall (Sept 10, 2017)</td>
<td>5.85</td>
<td>5.71</td>
<td>5.67</td>
</tr>
</tbody>
</table>
We Used HERE Data to Assess Speeds

• First we did a “congestion scan” to look speeds on I-75 from Florida Turnpike to the state line
• Then we assessed speeds at congestion spots in the same corridor.
• Dates: September 7 – 9
ESU – RITIS/PDA Congestion Scan
ESU – Speeds (Used HERE Data)

Source: RITIS Data
ESU – Speeds (Used HERE Data)

Source: RITIS Data
ESU – Speeds (Used HERE Data)

Source: RITIS Data
ESU – Speeds (Used HERE Data)

I-75: County Road 470/Exit 321: Hurricane Irma Evacuation

Source: RITIS Data
Recap

• RITIS allows us to do analysis where we do not have ITS device data.
• Detector Explorer makes it MUCH easier way to retrieve ITS device data anywhere in the State.
• Congestion Scan shows pockets of congestion and pockets of free flow traffic.
  ▪ Rerun models with driver behavior
Questions

For more information contact:

Derek Vollmer

Derek.Vollmer@dot.state.fl.us
Instant Poll

4 Have you used RITIS/PDA Suite for an extreme weather event? (select all that apply)

- Yes, for pre-event planning
- Yes, to manage traffic during the event
- Yes, for after action reviews & reporting
- No, but would like to in the future
- No, don’t have an interest
More Extreme Weather use cases are available!

Vermont Use Case Example
Winter Storm Stella

(Listed under Tutorials)

(Listed under Agency Use Cases)

http://i95coalition.org/forum/
Quick-hitter
Thanksgiving Weekend 2017
Travel Advisory
The Busiest Travel Day of the Year is Approaching. Want to Avoid Delays?
Used tabs to organize the Trend Map results, so travelers don’t have to scroll down the web page – much faster!

Included static maps of the worst travel hours, at varying geographic levels: region, city, corridor
And included an animated Trend Map for folks to find their best route to that Thanksgiving dinner!
TRAVEL TIPS:

As for the best times to travel, our partners at the Maryland Transportation Authority (MDTA) offer these travel tips for the Thanksgiving Day holiday:

› Travel during off-peak hours to avoid significant delays
› For the I-95 corridor, off-peak hours include:
  – Tuesday and Wednesday -- before 6 a.m. and after 11 p.m.
  – Thursday through Sunday -- before 9 a.m. and after 9 p.m.

CONSTRUCTION REMINDERS:

› I-95 improvement project north of the Fort McHenry Tunnel is underway. Current traffic pattern features no left shoulder and only a small right shoulder on northbound I-95. All lanes are open in both directions.

› I-895 Patapsco River Flats bridge deck and superstructure replacement continues. Current traffic pattern features two-way traffic (one adjacent lane in each direction) 24/7 on I-895 across the Patapsco Flats bridge near Baltimore/Washington Parkway. Motorists should consider I-95 as an alternate route.
Instant Poll

Did your agency prepare & send a Thanksgiving Travel Advisory this year?

- Yes, we used PDA Suite tools to create the content
- Yes, we used other data to create the content
- No, but would like to in the future
- No, don’t have an interest
Agency Input Session

“What’s on your mind?”

December 14, 2017
Wrap Up

Denise Markow, I-95 Corridor Coalition
Questions?

Please contact:

**PDA Suite** – Denise Markow 301.789.9088 or dmarkow@i95coalition.org

**PDA Suite Technical Support** – vpp-support@ritis.org or John Allen jallen35@umd.edu

**Logistics** – Joanna Reagle 610.228.0760 or jreagle@kmjinc.com