



**RITIS User Group Agenda:**

#	Topic	#	Topic
<i>Webcast Meeting Agenda (10:30am – noon)</i>		<i>In-person Meeting Agenda (12:30pm – 2:00pm)</i>	
1	Work Zone Performance Monitoring Tool	1	Hands-on Training
2	Spotlight Presentations	2	Q & A Session
3	Pack’s Pointers	3	First-look Feature Review
4	RITIS Roadmap Update	4	Early Design Feedback
5	Agency Input Session	5	CATT Lab Developer Lab Tour
6	Wrap Up	6	Agency Tour

**DATE CHANGE: Next User Group Meeting: Thursday, September 21, 2017 from 10:30am – Noon (EDT).** (more information to follow)

**The complete presentation and audio for the webcast meeting are available at – <https://vimeo.com/221104262>**

**Meeting Highlights:**

*(Note: This document only contains information from the webcast portion of the meeting)*

- **Welcome and User Group Organization:**
  - Denise Markow reviewed the agenda noting the presenters. She explained that the meeting is split into two parts – webcast/in-person (10:30am – noon) and In-person meeting only (12:30pm – 2:00pm).
- **Work Zone Performance Monitoring Tool (WZPMT):**
  - Michael Pack (UMD CATT Lab) previewed the new Work Zone Performance Monitoring Tool (WZPMT).
  - The WZPMT will be deployed to RITIS within the next month (late June/early July) – it will only work for agencies who are purchasing probe data from a vendor and are providing it and their work zone data to RITIS.
  - It is a real-time performance monitoring tool for work zones – it provides a quick and easy way to look at speed, queues, safety, and user delay costs in these areas. It currently uses INRIX data, but will be functional with HERE and TomTom data in the next couple of months.



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- The tool was originally built for Maryland SHA, specifically for:
  - Project Engineers/Managers (to look at real-time performance, receive alerts for when a specified threshold is reached to act),
  - Planners and Decision Makers (to help with understanding the impacts of the work zone - delay and costs and making improvements)
  - Public Information Officials (to understand if complaints received are valid and provide information to the public).
- Michael noted where to access the tool on the RITIS landing page and reviewed the available features.
- The **Work Zone Dashboard** contains the following four sections:
  - *Overview List* – provides all of the work zones by county within the state. Information on road maintenance operations and emergency roadwork including work zone identifiers/location, number of nearby incidents (one mile upstream/downstream), queue length indicators (increasing/decreasing), and user delay cost are shown.
  - *Location Map* – includes details on work maintenance operations, speeds, and DMS locations/messages.
  - *Critical Work Zone List* – provides lane status, queue length, and user delay cost for specific locations. Agencies can identify criteria/thresholds that are important to them.
  - *Delay/Cost/VMT* - see the last full weeks' worth of delay and cost summaries for a select number of corridors in the state.
- The **Individual Work Zone Profile** contains information on a specific work zone including:
  - *Settings (display)* – can be adjusted by user/agency
  - *Map* – zooms to selected work zone
  - *Road* – gives information including WZ TMC segment bounds (when available), segment speeds, posted speed limits and nearby events (when available). Indicates whether the current speed is an expected speed for the day of week and time, and then displays the delta.
  - *Performance Charts* – provides current queue lengths, travels times and speeds. Interactive graphs for the prior seven days are also provided for comparison.
  - *User Delay* – shows user delay cost and other select measures for the last seven days.
- **Personalized Alerts** can be configured so that users can be notified for event conditions, such as speed and incidents – the user sets the conditions/thresholds, time to be notified and type of notification to be sent (txt message or email).
- A **Quick Reference Guide** will be available after release of the tool.
- Following the presentation, the following questions were discussed:
  - **Andy Meese (MWCOC)** asked if there is a way to compare different work zones to each other. Michael Pack (CATT Lab) noted that this feature is not part of the tool. There are ways to gather some of that information through Probe Data Analytics tools. Michael noted that this could be explored as future functionality.
  - **Patrick Lucas (Fairfax County PD)** asked how the queue length is being determined. CATT Lab gets speed data from INRIX, HERE and TomTom and they track GPS equipment or cell phone which tells CATT Lab what the speed is on roadways (by section) and when the speed drops below a set threshold it is noted and adjacent sections with speed drops may be considered part of the queue.
  - **Patrick Ziliacus (MWCOC)** asked if this tool could be applied to other scenarios (such as a fatal accident that closed a roadway). Michael noted that currently the tool is only meant for work zones but accommodating those types of scenarios could probably be added without much effort. Michael noted that this request would be added to the list of new features requests.
  - **Kelly Wells (NCDOT)** asked when the WZPMT would be available. John Allen (CATT Lab) noted that it will be available early summer (late June/July).
  - **Mena Lockwood (VDOT)** asked if the reference guide would be available at the same time. Michael stated that it would be released at the same time and a screencast may also be included.



- **Shawny Juanshawnta (FEMA)** asked if the tool deals with only monitoring not rerouting. Michael confirmed that rerouting is not part of this tool.
  - **Daivamani Sivasailam (MWCOCG)** asked if the application is for real-time or if it can be used with archived data. CATT Lab noted that the WZPMA is mostly for real-time but has some archived features. It looks at both real-time work zone impacts, like from queueing, but also has some archived aspects, such as the User Delay Cost being measured over time, and the number of incidents that have occurred over the life of the work zone. These archived components can be seen in the work zone overview table.
  - **Simona Babiceanu (University of Virginia)** asked if they would be able to look today at a work zone that ended last week and if the maximum delay, average delay, maximum queue, etc. measures would be the correct values for the duration of the work zone. CATT Lab stated that you cannot currently go back in time after the work zone is permanently closed in this tool but that the Probe Data Analytics tools could be used to derive most of these measures.
- **Spotlight Presentation – Virtual Weigh Stations: Monitoring, Enforcement, and Analysis (Maryland SHA):**
    - **Michael Pack (CATT Lab)** explained the problem this tool addressed - Over size and overweight load activity on bypass roads. Trucks are bypassing weigh stations, causing damage to roadways, and causing safety issues.
    - In Maryland, **Dave Czorapinski and Manoj Pansare (Motor Carrier Division of Maryland's Office of Traffic and Safety)** opted to install virtual weigh stations on "by pass" routes. Michael explained the components of these weigh stations including: quartz sensors, loop detectors, license plate reader cameras, wireless antennae, instrumentation cabinet, and camera with IR illuminator.
    - There were problems with the fields comms in that they did not support enough concurrent real-time users and provide enough querying/analytics capabilities. There was also a need to broadly and reliably reach a large audience.
    - CATT Lab has integrated nine stations and ultimately there will be more than 20 stations.
    - Through RITIS, the CATT Lab is directly pinging these stations, bringing the data into RITIS, and then as many users as are needed can see the data concurrently in real-time.
    - When any Class 3 or larger vehicle passes a virtual weigh station – a picture is taken and it comes up on the screen along with a diagram that illustrates axle spacing, axle weight, speed, weight, vehicle class and other pertinent data. If there is a violation for the vehicle, items on the screen within the app becomes red/pink to indicate the requirement that the vehicle violating.
    - The Virtual Weigh Station app is viewable on mobile devices – phones, tablets, laptops.
    - Analytics are built into the app in addition to the real-time display. Users can select a specific weigh station and run queries to get additional information about violations at that location for a specified date range. A calendar graph will be created based on the query illustrating the number of vehicles violating the specified criteria for each day with the selected time period. The user can click on any date within the calendar graph to see the detailed information for each of the violations. Other types of reports available through the app were presented including vehicle count by class, by hour of day and by speed.
    - Enforcement examples were discussed. Police barracks are relying on this tool for enforcement and it is used in real-time to identify violations. Duane Pearce (Motor Carrier Division of Maryland's Office of Traffic and Safety) noted that this is one of the best screening tools available and he provided some examples of the benefits:
      - Provides for the ability to reach out to industry for second changes for compliance and many work to comply
      - Truckers do not need to stop at a traditional weigh station
      - The cost is much less then staffing a traditional weigh station
      - Contiguous states can log in and view data



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- The next steps for this effort include adding: new sites this year, license plate recognition, and potential hotlist integration (for stolen vehicles, repeat offenders, integration with permitting system and DMV lookups)
- Following the presentation, the following questions were discussed:
  - **Kelli Raboy (DDOT)** asked who the vendor is for the field equipment. The weigh motion sensors are from Kistler with Cardinal Scale as the integrator. They also asked how difficult was it to integrate their proprietary data into the system. Michael noted that it was fairly simple. An API was built for CATT Lab to pull data more easily. There have been a few issues with the communications field devices. There has been some degradation of the sensors at some locations as they are now 6+ years old– maintenance or replacement may be needed.
  - **Pavan Kukkundoo** asked if there was an approximate cost for each virtual weigh station. Manoj Pansare noted that the capital cost is approximately \$600,000 for a dual lane install and \$400,000 for a single lane to deploy the equipment. Denise Markow (I-95 Corridor Coalition) indicated that Pavan could contact Susan Klasen (NHDOT) at [susan.klasen@nh.dot.gov](mailto:susan.klasen@nh.dot.gov) as they just installed new Cardinal scales this past year. Denise also noted that there is a software component to be added to it.
- **Spotlight Presentation – I-85 Bridge Collapse in Atlanta, GA: Analysis and Test Scenario:**
  - John Allen (CATT Lab) showed how agencies could address a major transportation issue like the I-85 bridge collapse through the use of RITIS tools and the Probe Data Analytics Suite (PDA Suite).
  - I-85 is a major Interstate Highway that travels northeast-to-southwest in Georgia and carries approximately 250,000 vehicles per day. On Thursday, March 30, 2017, a fire started underneath a viaduct about six miles north of the downtown causing the bridge to collapse. All five lanes of the highway in each direction were subsequently blocked and closed. GDOT staff developed detours for this roadway to major routes and local roads.
  - *The I-95 Corridor Coalition* posted information on their website including a prominent red banner with link to GDOT information, top-level information on detours and information on “Traffic View” within the Coalition website.
  - The *Probe Data Analytics Suite* was used to evaluate the impacts of the collapse. Through the trend map tool and the user delay cost analysis, tables and visualizations were produced showing the impact of the bridge collapse.
  - The *Trend Map* tool produces animations so the user can compare and contrast different time periods – such as before and after the bridge collapse. The advantage is showing the change to others through animation.
  - The *User Delay Cost Analysis* produces a table showing the overall delay and user cost increases due to the incident (bridge collapse). This visualization shows that the User delay increased by approximately 20% on Thursday and Friday due to the collapse and that the afternoon peak period began several hours earlier than normal.
  - John explained that the *Probe Data Analytics Suite Dashboard* would also be a very useful tool in this situation. He provided information on how PennDOT used the dashboard during their recent Delaware River Bridge Closure to confirm Traffic Management Plans, mitigate effects of the PA Turnpike closure, and identify several incidents. In this case, the Dashboard was beneficial as it provided a clear visualization of the travel times on affected roadways and it was easy for all (including non-users) to understand where delays were located and what roadways were being impacted. John explained how this could be applied to the I-85 bridge collapse, providing operators real-time travel time “at-a-glance” to quickly and more effectively manage any congestion or incident-related impacts.
  - The CATT Lab conducted a *RITIS Meeting* as a mock exercise for GDOT to test this application for future use. RITIS Meeting is a multi-faceted, virtual meeting platform for information sharing and collaborative decision-making in a situational awareness environment. It provides web meeting features with some RITIS functionality. It can be



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shared with persons that do not use RITIS or PDA and it does not need to be downloaded onto a device.

- John reviewed RITIS Meeting features including data layers, timeline, meeting notes, and polling. He also discussed the functionality including drawing on the map for all to see/discuss, clicking on any icon or roadway link for more information/details, and uploading documents and/or photos to share.
  - RITIS Meeting can also be used for Evacuation Support. With information from an agency, Evacuation Support can show staging areas, public shelters, evacuation routes, hospitals, traffic control points, and more.
  - RITIS Meeting also has an auto-generated meeting log. After a meeting ends, all participants are sent a link to the log that includes pertinent information from the meeting. Quick Reference Guides are available for the application, for both meeting hosts and participants (<http://i95coalition.org/projects/regional-integrated-transportation-information-system-ritis/>, scroll to the bottom and then click on the “Meeting Tool” tab.)
  - Following the presentation, the following questions were discussed:
    - **Amanda Reardon (MATOC)** asked if the meeting log link expires (for later reference.) Michael Pack noted that the link does not expire. John Allen noted that an actual meeting can remain open for days as was the case for PennDOT during the Papal Visit in Philadelphia.
    - **Norvel Cooksie (MD SHA)** asked about the security of the RITIS Meeting application. Michael noted that it is intentionally open once a participant knows the link of the meeting. The point of the system is to easily share the meeting with others. Anyone who has the link can access the meeting. Every URL is unique, however, and only authorized users can create new meetings/URLs.
    - **Mena Lockwood (VDOT)** noted that for both the Atlanta I-85 and PA Turnpike closures, travel times are great to see and she asked if the change in traffic volumes was known. **Denise Markow (I-95 Corridor Coalition)** noted that within a presentation made by Alan Davis (GDOT), there are several arterial and volume data graphs available with regard to the bridge collapse. This report is available on the Coalition website (<http://i95coalition.org/transportation-systems-management-operations-tsmo/>) in the right column as part of the “Using PMs to Justify Signal Systems on Arterials Webinar.” John and Michael noted that there currently is no good way to get real-time ubiquitous volume data in the same way that we can get real-time speed data from INRIX, HERE, or TomTom. Sensors in the field are needed to obtain that data. Volume sensors were not available to RITIS in the region of the Atlanta bridge collapse.
- **Pack’s Pointers:**
    - Michael Pack reviewed a feature within the tools that agencies may not be aware of but may find beneficial.
    - Map Layer Manipulation – Users have the ability to control the layers they view on the map to focus on what is important and cut down on clutter. Click the layer list button to expand the view. Users can change the order of the layers by clicking and dragging over other layers. A few layers cannot be moved. Next to each layer there is an arrow that points to the left. By clicking on that arrow, a user can expand the layer to gain additional features and functions for that particular layer.



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- **RITIS Roadmap:**

- Michael Pack presented the RITIS Roadmap and noted that it had not changed since last time it was presented. The features that have been deployed were noted.
- Michael reviewed some of the recent upgrades and enhancements. He stated that there is a new layer for planned events however only a few agencies provide this data. WAZE data has been integrated from agencies that have a CCP agreement. Updated evacuation documents that have been incorporated. New CCTV feeds have been added. The base map has been updated and other enhancements have been made. There has also been a continued migration from Adobe Flash Player.
- Michael noted that they now have a national transit data feed so that for any provider who has their data in GTFS Real-Time or GTFS Schedules, RITIS has the ability to ingest the data. They have not yet begun displaying the data but they are archiving it.

- **Agency Input Session:** Michael Pack (MLP) led this session, answering questions from meeting participants. The following is a summary.

- **Kelly Wells (NCDOT)** asked which states have integrated WAZE data. Michael listed the following states that have integrated WAZE data into RITIS: FL, PA, VA, NH, VT, NY, CA and a few other states. He also noted that if a state has signed a CCP agreement with WAZE and they do not see their data in RITIS, they should contact the CATT Lab. Michael noted that they have their own partnership with WAZE that allows them to integrate and archived data from any state that is working with RITIS. Denise Markow noted that the I-95 Corridor Coalition is working on “Closing Real-time Data Gaps” with the CATT Lab. Part of this project includes bringing out more information about WAZE – lessons learned and how to improve your agreements. More information will be provided to the Coalition members as the tasks are developed.
- **Mena Lockwood (VDOT)** noted that in the bottleneck tool, it appears that you now have a volume component. She asked for more details on where the volume comes from and how it is accounted for. MLP noted that this is a new feature that comes from PennDOT funding. The CATT Lab has reevaluated the bottleneck ranking tool. In the past, bottlenecks were binary (they exist or not) but severity information (beyond queue length and duration) was not given about the bottleneck. The CATT Lab is looking at the volume (either from AADT profiles or the volume data profiles provided from agencies) to determine the severity of the bottleneck – how far below the speed threshold the bottleneck passed and what is the approximate volume on the road. New columns on the bottleneck ranking tool are surrogate measures – they use some aspect of volume data and severity to determine how a particular bottleneck compares to others. However, it is not an exact measure of volume or user delay cost. Documentation will be provided for these upgrades.
- **Michael Pack** explained another feature imbedded next to each bottleneck in the table – two buttons. One button takes the geography for the bottleneck then runs some performance charts (speed, reliability, etc.). The other button runs a user delay cost query for that bottleneck.
- **Jim Cullison (McCormick Taylor)** asked if it is possible to add point and click selection of segments from the map, on the Probe Data Analytics tool. MLP noted that they are working on this feature now and it is about two months from being deployed. The CATT Lab can send screenshots of what that feature will look like. This is in reference to the PDA Tool where users are able to draw a shape around a specific region and select certain arterials. Rather than typing in individual street names.
- Examples on how the tool has been used for emergency preparedness was requested. For the RITIS Meeting Tool, MATOC uses it for winter weather events, it was used for the Papal Visits (Philadelphia and DC) and another agency uses it on a regular basis to coordinate on work zones. Taran Hutchinson (MATOC) noted that they use it for severe weather operations coordination group, specifically for larger regional coordination calls. They record the meeting, take polls, verify attendees and use the archive/log for follow-up meetings.



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- **Kelly Wells (NCDOT)** asked how she can reorder the rank based on the delay field. Following the meeting, **John Allen (CATT Lab)** provided Kelly with the following information – *The list can be re-ranked by any measure simply by clicking on the header; so, if you click on 'Delay Surrogate' the bottleneck list will re-rank on that measure.*
  
- **Wrap Up:**
  - Michael gave a couple reminders:
    - Sign up - Go to [www.ritis.org](http://www.ritis.org) then “request an account” and complete the pop-up form using your agency email address. (Verification of your information may take 1 – 2 days and then the CATT Lab will get back to you with your credentials to log into RITIS.) Note that RITIS access is intended for public agencies and is not provided to the private sector unless they are directly supporting an agency who gives permission for access to be granted.
    - **Share your experience** – regarding using RITIS tools or TSMO in general. Please contact Michael Pack ([PackML@umd.edu](mailto:PackML@umd.edu)) or Denise Markow ([dmarkow@i95coalition.org](mailto:dmarkow@i95coalition.org)) if you are interested in making a spotlight presentation. The CATT Lab and Coalition staff will help you with your slides.
    - Please provide your input – regarding how meetings and/or the RITIS tools can be improved. Contact Denise or Michael with any suggestions.
    - Free training – Available and given by the MATOC staff. If you are interested, please contact [training@matoc.org](mailto:training@matoc.org).
    - Free video tutorials - Available for some of the tools. Links to the videos are shown below and will be posted on the Coalition website.
      - Analyzing Police Crash Records - <https://vimeo.com/179830512>
      - ATMS Data Analytics with ICE - <https://vimeo.com/179841494>
      - Transportation Project Prioritization - <https://vimeo.com/179829037>
  - Michael noted that the in-person meeting will continue for folks participating at UMD.
  - Denise reminded participants that some of the work completed by the CATT Lab was done so with funding from an MCOM Grant received by the I-95 Corridor Coalition.
  - Denise thanked all for their participation and noted that minutes will be prepared and sent to all registrants.



**ACTION ITEMS:**

#	Action Item	Whom	Status
1	Links to free video tutorials for some of the tools will be posted on the Coalition website.	CATT Lab	Needed
2	Add request for additional scenarios (such as major incidents) to WZPMT to the list of new features requests.	CATT Lab	
3	Contact the CATT Lab if you do not see your WAZE data in RITIS.	Agencies with CCP agreement	
4	Provide information to the Coalition members on “Closing Real-time Data Gaps” project as the tasks are developed as part of this project includes bringing out more information about WAZE – lessons learned and how to improve your agreements.	Denise Markow, I95 CC	
5	Send screenshots of what the new “point and click” feature in the Probe Data Analytic Suite will look like to Jim Cullison.	CATT Lab	Sent

**QUESTIONS:**

RITIS General Questions - Denise Markow, I-95 Corridor Coalition TSMO

- 301.789.9088
- [dmarkow@i95coalition.org](mailto:dmarkow@i95coalition.org)

RITIS Technical Support

- [support@ritis.org](mailto:support@ritis.org) (emails go to 10 developers and Michael Pack)





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**Meeting Participants**

**\* - Denotes persons participating in-person. All others participated via web.**

Michael Pack*	UMD CATT Lab*
John Allen*	UMD CATT Lab*
Denise Markow	I-95 Corridor Coalition
Revanth Katta	BCC Engineering, Inc.
Mohamed Kaddounmi	Charlotte DOT
Mike Bruff	City of Durham/DCHC MPO
Tim Davis	City of Frederick
John McFadden	City of Tallahassee
David Rinonos	DCHSEMA
Kelli Raboy*	DDOT*
Charles Tenbrook*	DDOT*
Clarence Shipp	Fairfax Connector/FCDOT
Patrick Lucas*	Fairfax County PD*
Joel Strickland	Fayetteville Area Metropolitan Planning Organization
Kara Schwartz	FDOT – D4
Ana Elias	FDOT – D6 / Consultant
Jerry Francis*	FEMA*
Shawny Juanshawnta*	FEMA*
James Paral, Wenjing Pu	FHWA
Wayne Emington	FHWA ME-DIV
Amy Lopez	INRIX
Taran Hutchinson*	MATOC*
Amanda Reardon*	MATOC*
Diana Ospina	Miami Dade County
Tina Sanders	Maryland State Highway
James Cullison	McCormick Taylor
Norvel Cooksey*	MDOT / CHART*
Josette Brown*	MD SHA MCD*
Azadeh Norouzi	MD SHA
Manoj Pansare*	MD SHA MCD*
Duane Pearce*	SHA MCD*
Eugene Hampton, Roxane Mukai, Katherine Raynor	MDTA
Maurice Witt	Montgomery County Fire and Rescue Service
Andrew Meese*	MWCOG*
Daivamani Sivasailam	MWCOG
C. Patrick Zilliacus*	MWCOG*
Anthony Tagliaferri, Kelly Wells	NCDOT
Kody McCarthy	NHDOT
Athena Hutchins	NITTEC



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Neha Galgali, Sudhir Joshi, Ira Levinton, Michael Pilsbury	NJDOT
Keith Miller	NJTPA
Harun Rashid*	NVTA*
Earl Rhoades	PA State Police
Robert Meinert	PEMA
Bill Benson (STMC), Mike Crowley, Bob Davis (Pennoni), Rich Deen, Scott Benedict, Ted Lucas (KMJ)	PennDOT
Greta Ryan, Tiffany Dubinsky	RRTPO
Cody Nolen	Southwestern Pennsylvania Commission
Wei Fan	UNC Charlotte
Simona Babiceanu	University of Virginia
Eva LaDow	US DOT
Scott Cowherd, Sanhita Lahiri, Mena Lockwood	VDOT
Candice Gibson, Killian Baptiste, Matthew Maiorana*	VDOT*
Janice Hughes, Steve Gaddy*	VDOT / Iteris*
Sean Coffey	Villanova University
Karen Jehanian, Emily White, Nicole Procknow	KMJ Consulting – I-95 CC Support

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