Spotlight Presentation: RITIS Leveraged for Maryland DOT's Common Operating Picture

Q: **Jesse Buerk (DVRPC):** Have you found there's a learning curve with this, and have you had to develop any formal or informal training for the people who are using this tool?

A: Jason Dicembre (Maryland DOT-SHA): We have not widely distributed the platform throughout the agency yet. We're using it for our operations level folks and our high-level executives at each TBU (Transportation Business Unit), so they can get a sense of how they want to use it. Then we'll provide training. It is different looking than "regular" RITIS, even though it's built on similar technologies. It is a home-grown system, different than anything we have internally or through the CATT lab. There is a learning curve in that respect. Also getting people to understand the intent - that it's strictly an awareness tool. There's still some information that's available on other platforms, but not on this platform. Not only the why of the transit but the why of the highway reports. For example, why are we low today on the number of containers we swapped? Making sure the users know the content and the intent has been a little bit of a challenge, but it has been well-received overall.

Q: **Kelly Wells (North Carolina DOT):** What software are you using to do this?

A: Michael Pack (University of Maryland CATT Lab): This is embedded in RITIS for Maryland. This was an initiative of the Secretary's office.

Q: **Richard Rabinowitz (New Jersey DOT):** So, it's homegrown software?

A: Michael Pack (University of Maryland CATT Lab): Yes

Q: **Jesse Buerk (DVRPC):** Can you delve into what it took to develop this tool, and how you did it?

A: Michael Pack (University of Maryland CATT Lab): The biggest challenge from our point of view was getting the different modes together including the different datasets they had that could be leveraged. The Secretary had a vision - he wanted to see the

relationship between the different modes. Jason was the one who spearheaded and shepherded the groups together. He did a great job - it was like pulling teeth with some folks. Figuring out how to get parking data and various airport data-all those different things and bringing those together was a great challenge.

A: Jason Dicembre (Maryland DOT-SHA): As an example, Maryland has a local DMV under our MDOT umbrella. They were transitioning to a different system to track wait times at their facilities. We wanted to incorporate information such as, whether wait time at a certain branch is impacted by highway incidents near it. We weren't able to do that before. Since the system was already transitioning, it was great that we didn't have to disconnect and then reconnect that data feed. We also had licensing issues. It was a challenge, but I'm happy with what we came up with. Ultimately, the most amount of time was spent on getting all the data feeds to CATT Lab.

A: Michael Pack (University of Maryland CATT Lab): It was eye-opening to see what some of the modes had. There's a lot of stuff we left out of the dashboard for time. We may go back and add them later. It was a cool exercise once we started getting into the weeds of it all.

Q: Mia Zmud (Central Texas Regional Mobility Authority): I was going to ask if this is also saved as historical data but I think you just said it isn't right now...maybe in the future?

A: Michael Pack (University of Maryland CATT Lab): Data is archived, but the "relationships" between them as are displayed aren't. They are all computed on-the-fly.

Q: Shawn Turner (Texas A&M Transp. Inst.): My question is for Michael and Jason-was it more of a technical or institutional challenge??

A: Jason Dicembre (Maryland DOT-SHA): There were both. While Maryland does have all the modes under one umbrella, until Secretary Rahn came in with his "one MDOT"

approach, we often did operate in silos. There was an institutional change happening outside this project about working together to solve problems. This project was looked at as a way to make everyone realize that what we do impacts each other. There were some institutional issues, such as what we wanted to display and concerns about showing some data in real-time? What if the data is viewed poorly because it's a snapshot of one moment in time, not the performance over a week, a month, or a quarter. So yes, there were some challenges because of the way the data was viewed, and how we were receiving it.

A: Michael Pack (University of Maryland CATT Lab): There were issues with secure data and sensitive systems, making sure we were tapping into them in an appropriate way that didn't set anyone up for disaster. From a design standpoint, there were a lot of different stakeholders with different views on how information should and should not be displayed. This is our first cut, just deployed last month, so there is always room for improvement.

Q: **Kelly Wells (North Carolina DOT):** Were there any issues with mapping the different data sets?

A: Michael Pack (University of Maryland CATT Lab): There wasn't a lot of competing geospatial things we had to deal with, like different types of projections or different ways of representing geospatial data. That wasn't a challenge within itself. The challenge was associating things together. Making sure that when we were describing the traffic leading up to ports or exiting ports that we were using the right roads to describe congestion. Same thing for airports or linking bus routes to congestion, incidents that occurred on bus routes. We even wanted to tie it back to whether certain Maryland DOT offices were open, and why.

Q: **Ria Kulkarni (Northern Virginia Transportation Authority):** This is a great functional platform that intends to monitor the restoration of transportation services. Have you thought of weaving in "resiliency" to this since TPB is looking into this aspect? This could be a great way to segue into translating an abstract resiliency idea to a more tangible entity.

A: Jason Dicembre (Maryland DOT-SHA): That's a great idea. I'm probably going to steal it. We did toss around what we wanted to track. Resiliency was not judged, but we did talk about the travel time index, wait times, and how they connect. It's interesting to think about what it means to restore transportation services. How many buses on average are late? What's normal? What are you willing to accept? It's hard to do because those standards are different for each mode. There's no true note that it's restored, it's just a picture of how we're doing in the system.

Q: **C. Patrick Zilliacus (MWCOG):** Jason and Michael, does this currently incorporate railroad (as in MARC, Amtrak, and maybe the freight moves on CSX and NS)?

A: Michael Pack (University of Maryland CATT Lab): We didn't add Amtrak, MARC, or VRE in the first version of this. We stuck to MDTA buses. The hope is that we will go back later and add WMATA, which is the Washington D.C transit system. We do collect that data in RITIS; it's just not displayed yet. We might do the same thing for MARC and Amtrak. We currently have data for MARC, but not Amtrak.

Results from the Feature Ranking & Prioritization on Data Tools

Q: **Ria Kulkarni (Northern Virginia Transportation Authority):** Thanks - Great to know new features are being added, especially multimodal data/analytics. Would this also include multimodal data sets for shared mobility devices, bike share, scooters, etc.?

A: Michael Pack (University of Maryland CATT Lab): Nothing is off the table. It's going to be up to the working groups to define what is necessary. We also have to find someone willing to fund it. The data has to be purchased or created. If one of the states wants it and wants to fund it, that would get priority.

Working Group Updates

Q: **Matthew Glasser (Georgia DOT):** Do you have a list of the "cheap and easy" add-ons?

A: Michael Pack (University of Maryland CATT Lab): It's being put together. Some of them could be "cheap and easy" if a particular approach is taken. However, they can balloon if we go in a different direction. For example, updating the speed layers to only show congested areas is a relatively simple enhancement that made the top 10.

A: **John Allen (University of Maryland CATT Lab):** One thing we would like to do is offer what templates we have and test drive them for your use case. Just give me a call or email. (jallen35@umd.edu; 215.666.3057)

RITIS & PDA Suite Updates

Q: **Ria Kulkarni (Northern Virginia Transportation Authority):** In the previous presentation-some features were added. Are other features available to all RITIS/PDA suite users or do we have to request them?

A: John Allen (University of Maryland CATT Lab): Please email or call me to discuss further (jallen35@umd.edu; 215.666.3057)

Q: **Lynne Randolph (SwRI):** Are trips "origin/destination" counts and is TRIPS limited to certain states?

A: John Allen (University of Maryland CATT Lab): Trip Analytics extracts OD and routing patterns using anonymized GPS origin-destination and waypoint input data from INRIX.

This information is then processed by three tools – 1) OD Matrix; 2) Segment Analysis; and 3) Route Analysis – to develop tables and visualizations for things like travel demand model calibration, project development, before and after studies, and more. Trip Analytics uses a different data set than RITIS or PDA Suite, so a state would have to purchase the data, then the CATT Lab would activate the tools for that state. For more information on purchasing the data, contact Denise Markow, at The Eastern Transportation Coalition (dmarkow@tetcoalition.org). You can also find out more here: www.ritis.org/tools, and scroll down to the three Trip Analytics tool icons.

A: Michael Pack (University of Maryland CATT Lab): There are trips demos in our training section—neither of which require a login. You can access them here (https://www.ritis.org/tools#odmatrix) and here (https://www.ritis.org/tutorials/).

Q: **Lynne Randolph (SwRI):** Are TRIPS limited to only certain states? I saw I couldn't access it.

A: Michael Pack (University of Maryland CATT Lab): Yes and no. It's like the PDA suite. A state has to buy data from a data provider like INRIX. Once that state has purchased data, we place it in the trip's analytics tool and turn it on for the state. There are only a few states that have done that including. Massachusetts, Maryland, Texas, Rhode Island, and a few others. If it's something you're interested in, we can put you in touch with a data provider to talk about the cost. It can be purchased through the Coalition's Vehicle Probe Project. You should talk to Denise Markow, at The Eastern Transportation Coalition (dmarkow@tetcoalition.org).

Agency Input Session

Q: **Jesse Buerk (DVRPC):** Can you clarify what features are possible with the PDA Suite?

A: Michael Pack (University of Maryland CATT Lab): In the first presentation, I was talking about features that people have prioritized. Those are features we will work on in the future, provided we have enough funding. John Allen discussed the PowerPoint templates for people to download and use. We're still finalizing a lot of those templates, and putting together some tutorials on how to fill out those templates.

Q: **Amy Getchell (Massachusetts DOT):** Massachusetts begins our statewide exit renumbering project on Oct 18th to convert to mile-based exit numbering. Does RITIS need any information from us?

A: Michael Pack (University of Maryland CATT Lab): Maybe. We tend to get exit information from mapping providers, but if we're directly mapping your exits to certain dropdowns for starting and endpoints of TMCs, we may need to talk to you about getting mapping of what it used to be versus what it is. Send an email to support@ritis.org to let us know this is happening, and we'll be in touch.

Q: **Tom Edinger (DVRPC):** Can we integrate the non-recurring traffic events with the travel time, speed, and congestion performance measures? For example, in the performance chart, indicate the number and type of events.

A: Michael Pack (University of Maryland CATT Lab): Please send an email to support with your thoughts on how it would look, and where those things would be listed. That would be very helpful. We'll see what we can do.

Q: **David Heller (SJTPO):** Is the Signal Analytics tool available to everyone?

A: Michael Pack (University of Maryland CATT Lab): That's another proprietary data set by INRIX. Reach out to the Coalition; they can put you in touch with INRIX. If you bought it, we could enable it and you could make it available to anyone you wanted. But it does require special data.