Webinar & Audio Information

• The call-in phone number is: x-xxx-xxxx & enter xxxxxxxx# 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 Justin Ferri at xxx-xxx-xxxxx for difficulties with the web or audio application

• This webinar will be recorded

• Presentations will be posted to the I-95 Corridor Coalition website. Participants will receive a link to the presentations after they are posted.
Asking Questions

• Please pose your questions using the chat box
• Questions will be monitored then answered by the speakers either at the end of the presentation or at the end of the webinar
Welcome

Kelly Wells, North Carolina Department of Transportation
User Group Co-chair
## Participants

<table>
<thead>
<tr>
<th>Agency</th>
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<tbody>
<tr>
<td>A&amp;P Consulting</td>
<td>DVRPC</td>
<td>Missouri DOT</td>
<td>Sabra &amp; Associates</td>
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<tr>
<td>AECOM</td>
<td>FHWA</td>
<td>Montgomery County Planning Commission</td>
<td>SJTPO</td>
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<td>AEM</td>
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<td>MWCOG</td>
<td>SPC</td>
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<td>APCTE</td>
<td>Georgia DOT</td>
<td>New Jersey DOT</td>
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<td>Atlanta Regional Commission, GA</td>
<td>HNTB</td>
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<td>Baltimore Metropolitan Council</td>
<td>INRIX</td>
<td>New York City DOT</td>
<td>UMD CATT Lab</td>
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<td>Capital Area MPO (Raleigh, NC)</td>
<td>Lehigh Valley Planning Commission</td>
<td>New York State Thruway Authority</td>
<td>University of Vermont Transportation Research Center</td>
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<td>CATT Lab</td>
<td>Manatee County</td>
<td>NJTPA</td>
<td>University of Virginia</td>
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<td>Chittenden County Regional Planning Commission</td>
<td>Maricopa Association of Governments</td>
<td>North Carolina DOT</td>
<td>VHB</td>
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<tr>
<td>City of Charlotte, NC</td>
<td>Maryland DOT – SHA</td>
<td>NVTA</td>
<td>Virginia DOT</td>
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<td>Connecticut DOT</td>
<td>Maryland Transportation Authority</td>
<td>Pennsylvania DOT</td>
<td>Wolverton, Inc.</td>
</tr>
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<td>Dad &amp; Associates LLC</td>
<td>MetroPlan Orlando</td>
<td>Richmond Regional Planning District Commission, VA</td>
<td>WRA</td>
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<td>DCHC MPO</td>
<td>Michigan DOT</td>
<td>RK&amp;K</td>
<td>I-95 Corridor Coalition</td>
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<tr>
<td>District DOT</td>
<td>Mobility Tech</td>
<td>Rockingham Planning Commission</td>
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April 25, 2019
Welcome

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<th>Session</th>
<th>Presenter</th>
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<td>Welcome / Introductions</td>
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<td>Matt Glasser, PE, Georgia DOT</td>
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<td>RITIS and PDA Suite Features – What’s New &amp; What’s Coming</td>
<td>Michael Pack, UMD CATT Laboratory</td>
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<td>Agency Input Session – questions, comments…..</td>
<td>All</td>
</tr>
<tr>
<td>Wrap Up</td>
<td>Kelly Wells, NCDOT &amp; User Group Co-chair</td>
</tr>
</tbody>
</table>
Introductions

Matt Glasser, PE  
Georgia DOT  
*Regional Traffic Operation Program Manager*

Paul Silberman, PE, PTOE  
District DOT  
(Sabra & Associates)  
*Practice Leader*  
*Transportation Planning*

Josh Coulson  
Maryland DOT  
(Sabra & Associates)  
*Transportation Engineer*

Mark Franz, PhD  
UMD CATT Lab  
*Lead Transportation Analyst*

Michael Pack  
UMD CATT Lab  
*Director*
Coalition Update – Recent Events

RECENT
✓ I-95 CC Strategic Planning Sessions for Intermodal & TSMO – March 6, 2019
✓ Summit on Traveler Information Strategies during Emergency Operations – March 7, 2019
✓ UAS Programs Webinar - Agency Presentations from Massachusetts & Delaware – March 21, 2019
✓ Drone Peer Exchange (NE Highway Operations) - UAS – I have one . . . now what do I use it for? – April 11, 2019
✓ I-95 Corridor Coalition Steering Committee Meeting – April 18, 2019
✓ Intermodal Freight Webinar – April 23, 2019
In the spotlight...

Holiday Travel Forecasting

Matt Glasser, PE

Georgia Department of Transportation
Regional Traffic Operation Program Manager
Holiday Travel Forecasting

Matt Glasser, PE – GDOT
Metro Atlanta
Operations Analysis
Operations Analysis

![Graph showing speed for SR 8 over different days]

**Atypical Historical**
Data shows ~5 mph lower than ’18

**Atypical Historical**
Thanksgiving speeds
~5 mph lower than ’18
Operations Analysis

![Graph showing speed analysis for SR 92 Roswell with atypical historical Thanksgiving AM/PM peak speeds behaving similarly to '18.](image)

- Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.
- Data: August 30, 2018 through November 01, 2018 (Every Thursday - HERE)
- August 30, 2017 - HERE
- November 23, 2017 - HERE
- November 24, 2016 - HERE
Communicating the Analysis

Thanksgiving Week 2016
Interstate Travel Forecast for the Baltimore Region, MD
(Based upon an evaluation of Thanksgiving week in 2015)

**Tuesday**
11.22.16
Avoid 3 PM – 7 PM

**Insight**
Worst time between 4pm – 6pm
Heaviest congestion on I-695 (between I-95 & I-70)

**Wednesday**
11.23.16
Avoid 2 PM – 5 PM

**Insight**
Interstate collisions are 67% higher than normal, statewide.

**Thursday**
11.24.16
Great day to drive!

**Insight**
Low usage all day.
Happy Thanksgiving

**Friday**
11.25.16
Great day to drive!

**Insight**
Low usage all day. Black Friday shows low use than an average Friday.

**Saturday**
11.26.16
Great day to drive!

**Insight**
Low usage all day; only minor congestion on I-95.

**Sunday**
11.27.16
Drive Carefully!

**Insight**
Low usage all day, but interstate collisions are 63% higher than normal, statewide.

**Monday**
11.28.16
Avoid 3 PM – 6 PM

**Insight**
Worst time between 4pm – 5pm
Heaviest congestion on I-695

“Thanksgiving holiday travel is expected to increase from 2015 by 3 percent in Maryland, according to AAA Mid-Atlantic. That’s 31,000 more Marylanders on the road from Wednesday, November 23, through Sunday, November 27.”

April 25, 2019
Metro Atlanta
Trend Analysis

Use Trend Map for dynamically assessing congestion patterns occurring during the week:

1) On the Trend Map query page, first select your geography and road type, as appropriate

2) Create your desired time periods to analyze

3) Select your data source

4) Choose a data granularity
Trend Analysis
Spreading the Word

GDOT released traffic forecasts for metro Atlanta that recommend the worst to best times to travel over the Thanksgiving holiday. The forecasts are based on an analysis of traffic patterns in seven parts of the metro Atlanta area during the Thanksgiving holiday in 2016 and 2017.

By the time families sit down for turkey on Thursday, volume on Atlanta freeways should be light. Downtown is the exception.

Traveling for Thanksgiving? Here’s how GDOT is helping ease Thanksgiving Day traffic. 2wsb.tv/2QhKRwp @AudreyWSBTV is LIVE inside their Traffic Management Center on Channel 2 at 6:51 a.m.
Questions?
In May of 2017, the Regional Traffic Operations Program, or RTOP, implemented the Traffic Responsive System along Peachtree Road (from I-285 to Colonial Dr.) to improve traffic flow. Here are the results:

Smart Signals along SR 141/Peachtree Road

Project Details:
- 23 intersections
- 5 miles long
- 64,000 vehicles/day
- $141,104 in monthly delay cost savings
- 3 hours total daily congestion time decreased by almost 5% reduction in weekday travel time

SPEED CHANGE
- 35% improvement in southbound AM average speed
- 17% improvement in northbound PM average speed
- 2-5 mph improvement in average daily speed

In monthly delay cost savings
Total daily congestion time decreased by almost 3 hours
5% reduction in weekday travel time

April 25, 2019
In the spotlight...

RITIS Applications for Measuring Performance in Downtown Washington DC

Paul Silberman, PE, PTOE
Practice Leader Transportation Planning
Sabra & Associates, Inc.
For DDOT
RITIS Applications for Measuring Performance in Downtown Washington DC

I-95 Corridor Coalition Quarterly RITIS and Probe Data Analytics Suite User Group Meeting
February 14, 2019
Agenda

- Background/Motivation
- Data Sources
- Practical Applications
- Future Opportunities
- Questions
Background

Citywide Signal Optimization
› How do we evaluate benefits for all roadway users?

Major Special Events
› How to predict, mitigate and monitor?
Motivation

- What data is available?
- How are we using it?
- What have we learned along the way?
- Where do we go from here?
Data Sources

- RITIS
  - Live System Status
  - Historical Data/PDA Suite
- WMATA AVL
- Google Traffic
  - Live/Typical
  - Waze
- Floating Car/GPS
- Bicycle Travel Time
- CCTV
Downtown Optimization

- 600+ Signal Grid Network
- Overnight Implementation
- Cars, Buses, Peds, Bikes
  - 49 Travel Time Routes
  - 40+ Bus Routes
  - 1,500+ Signalized Crosswalks
  - 7,000+ Cycle Trips per Day
Downtown Results – VPP Travel Time

Travel Time for NB 12th Street Between Pennsylvania Avenue and Massachusetts Avenue

Travel Time Savings noted during ‘after’ AM, Midday and PM period
Significantly reduced queuing and increased speeds noted during ‘after’ AM, Midday and PM period
PDA Suite User Cost Tool

- Aggregate performance data and user value-of-time
- Estimates user cost associated with congestion

<table>
<thead>
<tr>
<th>US 1 (Rhode Island Ave)</th>
<th>User Delay Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Day Before</td>
<td>$41,797</td>
</tr>
<tr>
<td>Average Day After</td>
<td>$32,116</td>
</tr>
<tr>
<td>Daily Savings</td>
<td>$9,681</td>
</tr>
<tr>
<td>Annual Savings</td>
<td>$2,420,250</td>
</tr>
</tbody>
</table>
Papal Visit

› Traffic analysis of potential impacts
› Development of mitigation measures
› Real-time traffic monitoring and management
Papal Visit

CCTV + Live Traffic Data Monitoring

CCTV

On-Street Traffic Observation
RITIS Comparison Tweeted by MATOC
Where do we go from here?

- Heavier reliance on PDA Suite travel time data for analysis
- Sensys/WiFi travel time data
- Field-collected travel time data for validation and immediate results
- Heavier use of Transit AVL data for TSP and Signal Optimization evaluation
- Leverage available Bike data from bike-share services
- Pedestrians? Crowdsourced GPS?
Questions?
In the spotlight...

RITIS APPLICATIONS FOR THE MDOT SHA - US 50 STUDY

Josh Coulson
Transportation Engineer
Sabra & Associates
For Maryland DOT
Agenda

› Background
› Challenges
› Choosing a “Typical Day”
› Model Calibration Results
US 50 Modeling Project
Project Background

Background

› Westbound US 50 experiences significant congestion on summer Sundays as vacationers head home from beach destinations along the Eastern Shore.

Study Limits

› US 50 corridor from MD 404 to Severn River (30 miles)

Study Period

› Summer Sundays
› Six hour peak period (1:00PM to 7:00PM) of westbound congestion

Project Purpose

› Code and calibrate an existing conditions VISSIM model to be used for future alternative analysis
Challenges

Traffic Incidents:

› Frequently occur at some point along the corridor during the six hour peak period
› Create temporary bottlenecks impacting vehicular throughput and speeds along the length of the corridor
› Induce diversions onto parallel routes affecting traffic count data

Make finding typical conditions to serve as a calibration target difficult
Choosing a “Typical Day”

Incident information on RITIS provided by MDOT’s Coordinated Highway Action Response Team (CHART) was critical in understanding where and how particular incidents and the resulting congestion impacted the corridor and our data.
Choosing a “Typical Day”

For each of the summer Sundays:

- Compiled peak period INRIX speed data
- Noted count data collected and major traffic incidents

July 29, 2018

Count Data Collected
- All interchange counts west of bridge
- US 50 at MD 2 Interchange
- US 50 at MD 328, MD 322, MD 656, MD 663

Traffic Incidents of Concern
- Significant congestion eastbound approaching the bridge appears to be due to multiple traffic accidents and resulting lane closures
Choosing a “Typical Day”

Methodology

1. The corridor was divided into 5 segments with INRIX travel time data and volume data from UMD sensors selected for evaluation.

2. The mean and standard deviations of the speed and volume data was calculated by segment and hour for each of the Sunday peak periods.

3. A point system was developed with 1 point and 2 points assigned to days with a particular location and hour within one or half of the standard deviation, respectively.

Statistical analyses of speed data from INRIX and volume data from University of Maryland (UMD) sensors determined July 15th represented the most “typical day” to be used as a calibration target.
## Model Calibration Results

<table>
<thead>
<tr>
<th>Segment</th>
<th>INRIX</th>
<th>VISSIM - Uncalibrated</th>
<th>Segment</th>
<th>INRIX</th>
<th>VISSIM - Calibrated</th>
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</thead>
<tbody>
<tr>
<td>1. MD 404 to MD 213</td>
<td></td>
<td></td>
<td>2. MD 413 to MD 456</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. MD 413 to MD 456</td>
<td></td>
<td></td>
<td>3. MD 456 to US 303 merge</td>
<td></td>
<td></td>
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<tr>
<td>3. MD 456 to US 303 merge</td>
<td></td>
<td></td>
<td>4. US 303 merge to Hess Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. US 303 merge to Hess Rd</td>
<td></td>
<td></td>
<td>5. Hess Rd to Chester River Beach Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Hess Rd to Chester River Beach Rd</td>
<td></td>
<td></td>
<td>6. Chester River Beach Rd to Kent Narrows Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Chester River Beach Rd to Kent Narrows Rd</td>
<td></td>
<td></td>
<td>7. Kent Narrows Rd to Pinney Narrows Rd</td>
<td></td>
<td></td>
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<tr>
<td>7. Kent Narrows Rd to Pinney Narrows Rd</td>
<td></td>
<td></td>
<td>8. Pinney Narrows Rd to Dominion Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Pinney Narrows Rd to Dominion Rd</td>
<td></td>
<td></td>
<td>9. Dominion Rd to Shopping Center</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Dominion Rd to Shopping Center</td>
<td></td>
<td></td>
<td>10. Shopping Center to MD 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Shopping Center to MD 8</td>
<td></td>
<td></td>
<td>11. MD 8 to west of Bay Bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. MD 8 to west of Bay Bridge</td>
<td></td>
<td></td>
<td>12. West of Bay Bridge to Oceanic Drive</td>
<td></td>
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<tr>
<td>12. West of Bay Bridge to Oceanic Drive</td>
<td></td>
<td></td>
<td>13. Oceanic Drive to Whitehall Rd</td>
<td></td>
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<td>13. Oceanic Drive to Whitehall Rd</td>
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<td></td>
<td>14. Whitehall Rd to Bay Dale Dr</td>
<td></td>
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<tr>
<td>14. Whitehall Rd to Bay Dale Dr</td>
<td></td>
<td></td>
<td>15. Bay Dale Dr to Severn River Bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Bay Dale Dr to Severn River Bridge</td>
<td></td>
<td></td>
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### Speed (mph)

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>Color</th>
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<tbody>
<tr>
<td>&gt; 55</td>
<td>Green</td>
</tr>
<tr>
<td>40 - 55</td>
<td>Yellow</td>
</tr>
<tr>
<td>35 - 45</td>
<td>Orange</td>
</tr>
<tr>
<td>25 - 35</td>
<td>Red</td>
</tr>
<tr>
<td>&lt; 25</td>
<td>Red</td>
</tr>
</tbody>
</table>
Questions?
Mark Franz, PhD
UMD CATT Laboratory
Lead Transportation Analyst

mfranz1@umd.edu
Recent Working Groups Meetings

### O-D/Trajectory Analytics
**February 13th**

- **DOTs**:
  - New Jersey
  - D.C.
  - Pennsylvania
  - Maryland
  - South Carolina
  - North Carolina
  - Virginia
  - New York

- **MPOs**:
  - MWCOG
  - DVRPC
  - Durham-Chapel Hill-Carrboro

- **Feds**:
  - FHWA
  - NREL

- **Consultants**:
  - VHB
  - RK&amp;K
  - AECOM (for FDOT)

- **Academia**:
  - UMD CATT Lab
  - Texas A&amp;M Transportation Institute

- **Cities**:
  - Charlotte, NC

### Signal Performance Measures
**February 26th**

- **DOTs**:
  - New Jersey
  - Maryland
  - Virginia
  - New York
  - Georgia

- **MPOs**:
  - BMC
  - Connecticut Metro COG

- **Feds**:
  - FHWA
  - NREL

- **Consultants**:
  - VHB
  - RK&amp;K
  - AECOM (for FDOT)

- **Academia**:
  - UMD CATT Lab
  - Texas A&amp;M Transportation Institute

- **Cities**:
  - Charlotte, NC

### Enhanced Work Zone Analytics
**February 28th**

- **DOTs**:
  - Virginia
  - New York
What's new & what's coming

Michael Pack
UMD CATT Laboratory
Director

PROBE DATA ANALYTICS SUITE
RITIS Recent Deployments

• Every Day Counts TIM PM Tool – Now LIVE @ https://www.ritis.org/archive/incident
RITIS Recent Deployments

- INRIX XD data on TrendMaps

Trend Map - Using INRIX XD data

Color Thresholds:
- 0 mph
- 10 mph
- 20 mph
- 30 mph
- 40 mph
- 50 mph

07:00 AM - March 10, 2019 (Sunday)
07:00 AM - March 11, 2019 (Monday)
RITIS Recent Deployments

- Significant performance improvements for Region Explorer
- The Bottleneck Ranking Comparison widget makes use of caching for previous months of data to return results quicker.
- Export requests that only include a subset of the available fields will now be properly described in the download notification emails you receive. Prior to this change, export requests would begin with "All fields for..." regardless of which fields you selected.
RITIS Recent Deployments

- **Travel Time Comparison**
  - In the Travel Time Comparison tool, we've added a [video tutorial](#), and increased the minimum chart height for better visibility on smaller displays.

- **Travel Time Delta Ranking**
  - In the Travel Time Delta Ranking tool, we’ve added a [video tutorial](#), and made these improvements:
    - We’ve resolved an issue when multiple time ranges were selected for each day but only the latest range was analyzed.
    - We’ve added more detailed tooltips, axis labels, and trend filters to the slope chart.
    - The value for speed limit travel time now weights segments by length.
    - When exporting data to Excel, column headers now include units for IQR and median.
    - We’ve fixed a crash for some queries on roads for which we have no data.
• **Road Search**
  - When performing a partial road selection, the dropdown list of intersections now reflects the direction of traffic flow, reversing the prior order.
  - When performing a partial road selection using XDs, we now provide (START OF ROAD) and (END OF ROAD) options so you can select segments beyond the range of available intersections.
  - We’ve updated the list of XD road classes to match the INRIX v18.2 basemap update, with numeric values 0 through 4.

• **Dashboard**
  - On the MAP-21 map widget, we’ve restored the ability to filter segments based on performance.
  - In the Ranked Bottleneck Comparison widget, we’ve fixed an issue where bottleneck descriptions were sometimes empty. We also fixed an issue where headers and footers in saved screenshots were difficult to read in some image viewers.
RITIS Recent Deployments

- **Massive Data Downloader**
  - We've resolved an issue that intermittently caused download requests to remain in a pending state.
  - We've added the is_primary column to the TMC Identification file for NPMRDS INRIX downloads.

- **Trend Map**
  - Trend Map now displays brief events that begin and end within a single granularity interval. For example, in a Trend Map with 1 hour granularity, an event that begins at 3:15pm and ends at 3:45pm would previously not be shown but will now be included during the 3:00pm to 4:00pm interval.

- **Performance Summaries**
  - Performance Summaries now correctly filters results by selected days of the week.

- **Region Explorer**
  - When multiple data sources are selected, the probe readings layer now correctly uses lower-priority data sources when data for the first source is unavailable.
Work in Progress

- EDC TIM Additional Work
- AARs added to Incident Logs
- Bottleneck Ranking Modernization (Flash migration)
- Detector Analytics Modernization (Flash migration)
- Dashboard Widgets
  - Reliability
  - Incidents & Event Comparisons
- MAP-21 / NPMRDS Enhancements
As spatial coverage increases significantly, volume coverage is not being updated by all agencies.
Your Input is Needed!

- All features and functionality are driven by state/mpo users.
- You are welcome to join any of our User Groups / Working Groups / Listening Sessions to brainstorm/define these new features and functionality.
- You can also type your comments to us today either in the chat box below, or with an email to support@ritis.org

“What’s on your mind?”

“We’re here to help!”
Agency Input Session

“What’s on your mind?”
Wrap Up

Kelly Wells, North Carolina Department of Transportation
User Group Co-chair
Questions?

Please contact:

I-95 Corridor Coalition – Denise Markow 301.789.9088 or dmarkow@i95coalition.org

RITIS or PDA Suite – Michael Pack at PackML@umd.edu

RITIS Technical Support – support@ritis.org

PDA Suite Technical Support – pda-support@ritis.org

Logistics – Joanna Reagle 610.228.0760 or jreagle@kmjinc.com