CATT Laboratory

RITIS User Group

Web Meeting | February 1, 2024

In collaboration with The Eastern Transportation Coalition

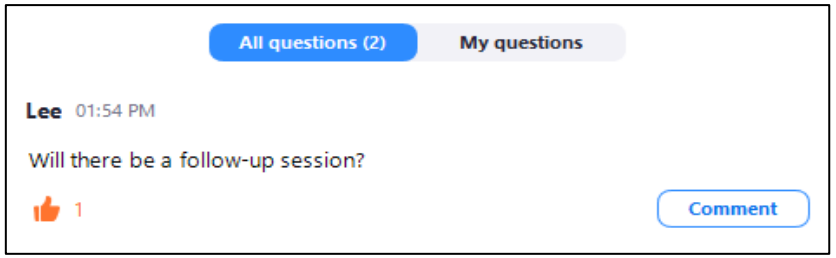
Welcome!

- We are using Zoom **Webinar**
- **AUDIO (Computer):** Use your computer speakers and microphone by clicking the "Join Audio" button at the bottom left of the screen. You will be muted.
- **Alternate Audio (Phone):** Call into the meeting by dialing the phone number based on your location (provided in the confirmation email) and enter the Meeting ID at the prompt. You will be muted.
- **This web meeting is being recorded.**
- **Questions** with the audio or web? Please contact Esther directly via email (ekleit@kmjinc.com)
- Please use the **Q&A box** for questions to the presenters. The **Chatbox** is not available to participants.

Asking Questions in the Q&A Box

- Click on the Q&A icon at the bottom of your screen

- The questions in the Q&A box will be monitored and answered at the end of each presentation or at the end of the meeting
- You can keep track of your questions in the “My Questions” tab in the Q&A box



Asking Questions Verbally

- Please raise your hand *(click on the hand icon at the bottom of the screen)* and a host will unmute you.

- Please give your name and agency before asking your question
- **Please mute yourself when you are finished speaking**

Coalition Update

THE EASTERN TRANSPORTATION COALITION

Sheryl Bradley
The Eastern Transportation Coalition
TSMO Program Director

Coalition Update – Recent & Upcoming Events

RECENT

- ✓ MBUF International Truck Pilot Report - A Scalable Approach that Links Road Use & Payment - Nov 21, 2023
- ✓ RITIS Product Enhancement Working Group Web Meeting *(invite only)* - Nov 30, 2023
- ✓ RITIS Workshop: What's New with PDA & RITIS Tools - Dec 5, 2023
- ✓ Southern HOGs In-person Exchanges with Virtual Reality TIM Training Sessions *(invite only)* - Dec 6, 2023
- ✓ Virtual Exchange: NYS Bridge Strike Task Force Initiative - Dec 15, 2023

UPCOMING

- Virtual Info Exchange: Statewide Data Needs Assessment: A GDOT Case Study *(invite only)* - Feb 23, 2024
- RITIS Product Enhancement Working Group Web Meeting *(invite only)* - March 21, 2024
- TIS Web Summit - April 2024
- RITIS Workshop - April 2024
- TDM State Contract POC/Tech Advisory Committee Meeting *(invite only)* - April 9, 2024
- Fiber Workshop - in-person *(invite only)* – April 9-10, 2024

Welcome & Introductions

Matt Glasser
National TSMO Account Lead
Arcadis
RITIS User Group Co-chair

Today's Meeting

Welcome, Introductions & Polling	Sheryl Bradley, TETC Matt Glasser, Arcadis & RITIS User Group Co-chair
Spotlight Presentations	
Development of RITIS Training Materials and Flyers for Agency Users	Chi Mai, Oregon DOT
Development of a Crash Event Summary Document	Ian Kilburn, Vermont Agency of Transportation
Quarterly Congestion Reporting for the Baltimore Region	Ed Stylc, Baltimore Metropolitan Council
New RITIS & PDA Suite Updates and Demonstrations	Michael Pack, UMD CATT Lab
RITIS Product Enhancement Working Group Update & Future Enhancements	Bob Frey, Massachusetts DOT RITIS Product Enhancement Working Group chair
User Feedback Session & Wrap Up	Michael Pack & Matt Glasser

Today's Speakers

Michael Pack
UMD CATT Lab
Director

Chi Mai
Oregon DOT
Transportation System Analysis Engineer

Ed Stylc
Baltimore Metropolitan Council
Transportation Analyst

Ian Kilburn
Vermont AOT
TMC Supervisor

Bob Frey
Massachusetts DOT
Director of Project-Oriented Planning

Meeting Participants

Agencies							
Alexandria Transit Company	Cape Cod Commission	Chittenden County Regional Planning Commission	City of Norwalk, CT	County of Fairfax	Florida DOT	Indiana DOT	Martin County Board of County Commissioners
Anne Arundel County	Capital Area Metropolitan Planning Organization	City of Baltimore, MD	City of Philadelphia, PA	DC HSEMA	Florida's Turnpike Enterprise	Iowa DOT	Maryland Department of Emergency Management
Arizona DOT	Capital Area MPO (Raleigh)	City of Bend, OR	City of Roswell, NM	DCHC MPO	Forward Pinellas	Kentucky Transportation Cabinet	Maryland Department of the Environment
Atlanta Regional Commission	Capital Region Planning Commission	City of Boulder, CO	City of Salisbury, MD	Denver Regional Council of Governments	Georgia Environmental Protection Division	Kingsport MTPO	Maryland DOT-SHA
Baltimore City DOT	Capital Region Transportation Council	City of Burlington, VT	City of Sandy Springs	District DOT	Heartland TPO	Knoxville Regional TPO	Maryland Office of Transportation Mobility and Operations
Baltimore Metropolitan Council	Centre County MPO	City of Charleston, SC	City of Tampa, FL	DVRPC	Henry County, Georgia	Leesburg Police Department	Maryland Transportation Authority
Belomar Regional Council	Champaign County Regional Planning Commission	City of Charlotte, NC	City of The Dalles, OR	East West Gateway COG	HEPMPO	Los Angeles County Metropolitan Transportation Authority	Massachusetts DOT
Bi-State Regional Commission	Charlotte DOT	City of Eugene, OR	Colorado DOT	Eastern Border Transportation Coalition	Howard County DPW	Louisiana DOTD	MetroPlan Orlando
Boston Region MPO	Chattanooga-Hamilton County Regional Planning Agency	City of Franklin, TN	Connecticut DOT	ECWRPC	I-77 Mobility Partners	Maricopa Association of Governments	Miami - Dade County
Broward County, FL	Chicago Metropolitan Agency for Planning (CMAP)	City of Maryville, TN	Corpus Christi MPO	Federal Highway Administration	Illinois DOT	Maricopa County DOT	Michigan DOT

Meeting Participants (cont.)

Agencies							
Mid-America Regional Council	New Jersey DOT	Old Colony Planning Council	Portland Bureau of Transportation	San Bernardino Police Department	St Charles County Government	US Customs and Border Protection	Washington Headquarters Services
Minnesota DOT	New Mexico DOT	Omaha-Council Bluffs Metropolitan Area Planning Agency	Prince George's County OHSEM	Sangamon County, IL	Tahoe Regional Planning Agency	USDA	Washtenaw Area Transportation Study
Montgomery County Government	New York City DOT	Oregon DOT	PVPC	SJTPO	Tennessee DOT	USDOT	Wisconsin DOT
MORPC	New York State DOT	Ozarks Transportation Organization	RCOC	South Dakota DOT	Texas DOT	Utah DOT	WMATA
MWCOG	NJTPA	Palm Beach County	Reading MPO	South Jersey Transportation Organization	The City of Hartford, CT	Valley Metro	
MWVCOG	North Carolina DOT	PANYNJ	Rhode Island Division of Statewide Planning	Southeastern Wisconsin Regional Planning Commission	The Eastern Transportation Coalition	Vermont AOT	
Nashville DOT	Northwest Florida Traffic Management Center	Pennsylvania DOT	Rhode Island DOT	Southern Georgia Regional Commission	Town of Huntersville	Vermont Emergency Management	
Nebraska DOT	NOVA	Pennsylvania Turnpike Commission	Rio Grande Valley MPO	Southern New Hampshire Planning Commission	Town of Matthews	Virginia DOT	
Nevada DOT	Ohio DOT	Pikes Peak Area Council of Governments	Rockdale County	Southwestern Pennsylvania Commission	Tri-County Regional Planning Commission	Waco MPO	
New Jersey	Oklahoma DOT	Pima County DOT	RTC of Southern Nevada	Spokane Regional Transportation Council	University of Maryland CATT Lab	Washington DOT	

Polls 1, 2, and 3

Poll 1: How often do you attend RITIS User Group Web Meetings?

a) 1-2 times per year
b) 3-4 times per year
c) This is my first meeting

Poll 2: How do you use the data and visualization results from RITIS tools (choose one)?

1. We use results directly from RITIS to develop products (reports, maps, etc.)
2. We download the data and use our own agency's in-house tools to create tables and visuals for product development
3. We do a little bit of both

Poll 3: Who is your primary audience for sharing information that was developed from RITIS and PDA Suite (choose one)?

1. Peers
2. Management
3. Executive Leadership
4. Elected Officials
5. General Public

Development of RITIS Training Materials and Flyers for Agency Users

Chi Mai

Transportation System Analysis Engineer

Oregon DOT

About Us

Under Oregon Department of Transportation (ODOT) and the Transportation Planning and Analysis Unit (TPAU), the mission of the **Data Analytics and Performance Reporting (DAPR)** program is to provide guidance on data analytics and tools necessary to support statewide transportation analysis and system performance reporting.

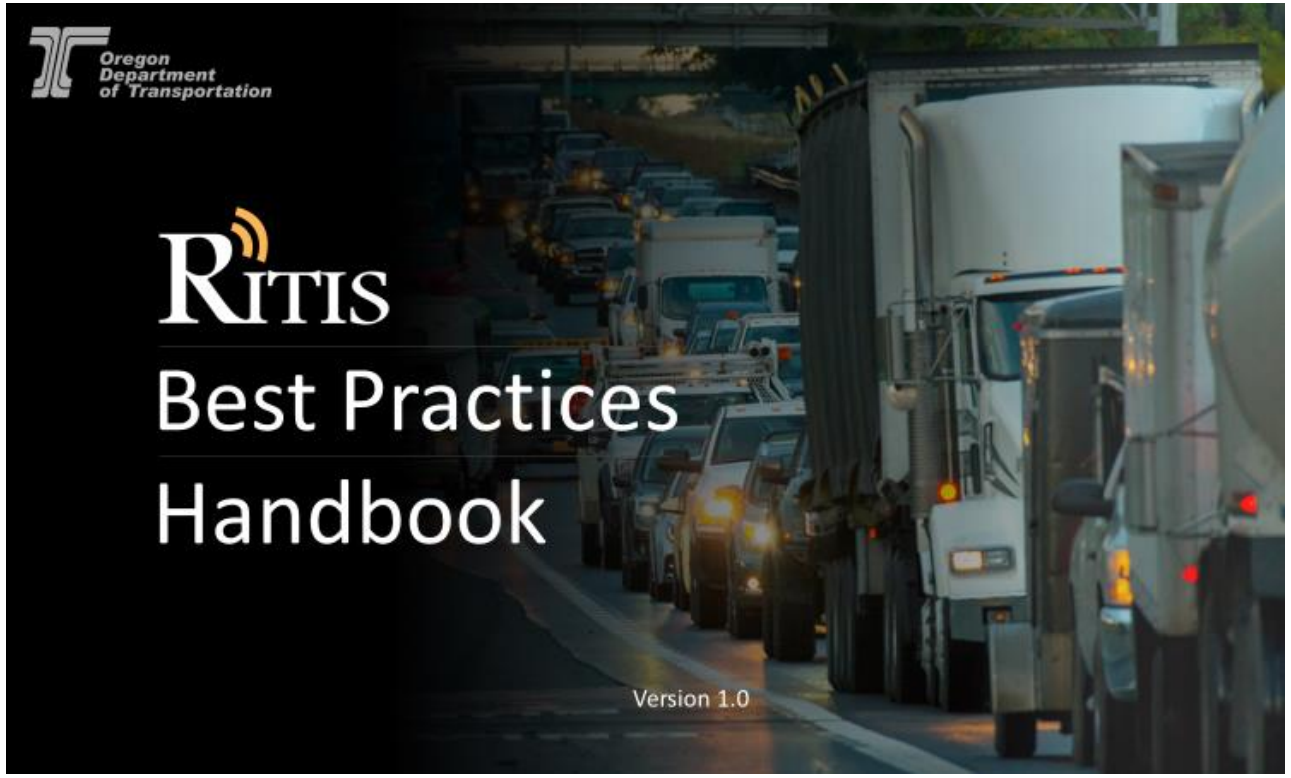
A key task under the **DAPR's** work program is managing RITIS for Oregon users through:

- Administering contract
- Delivering training
- Expanding implementation of RITIS
- Developing use cases
- Producing outreach and educational materials
- Providing continuous technical support

Oregon RITIS and Support to Users

In April 2020, ODOT started subscribing to RITIS, finding it highly useful in helping meet ODOT's vision of being on the forefront of modern data and performance reporting practices. Since then, we have been actively developing our staff and other transportation professionals in Oregon through these pathways:

- ODOT RITIS User Group Meetings (quarterly)
- DOT RITIS Website
- Annual RITIS training
- RITIS PDA tools and data spreadsheet
- RITIS Handbook
- RITIS flyers

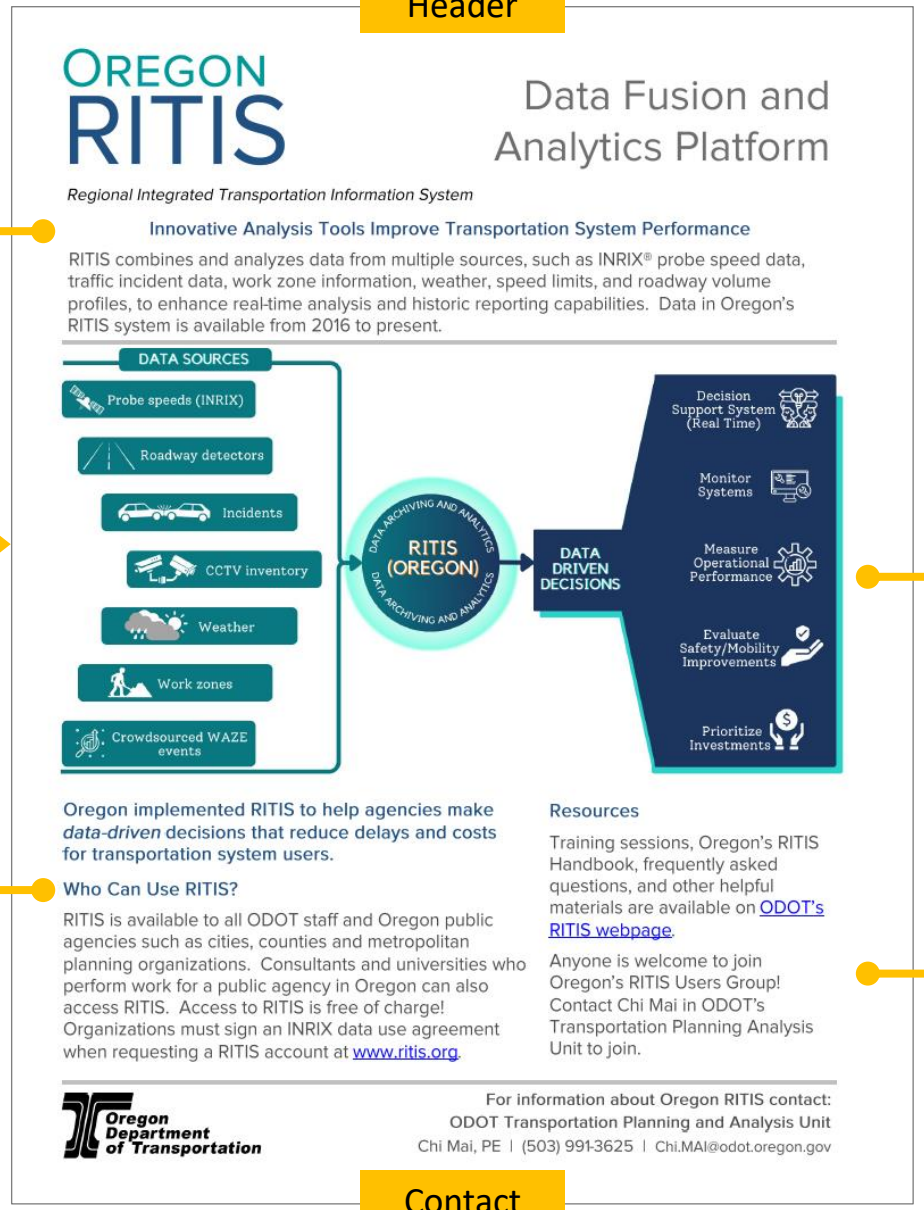


ODOT Personnel Local Government Consultants Universities

Why the Need for Oregon RITIS Flyers?

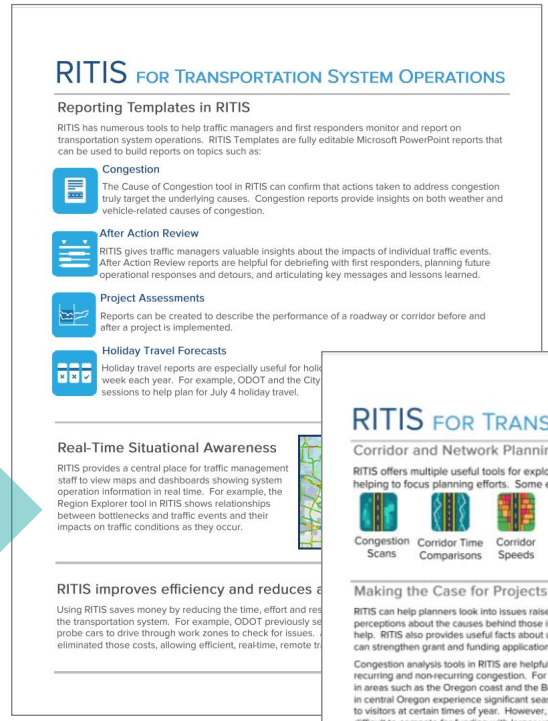
- Communication Tool
- Promote RITIS
- Quick way to explain RITIS to someone who is unfamiliar
- Targeted to different audiences
- Follow-up to attendees after presentations

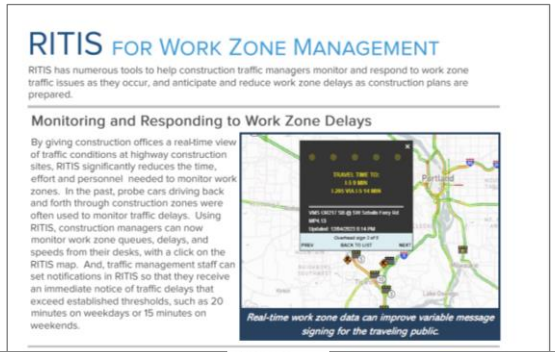
RITIS Overview Cover Page

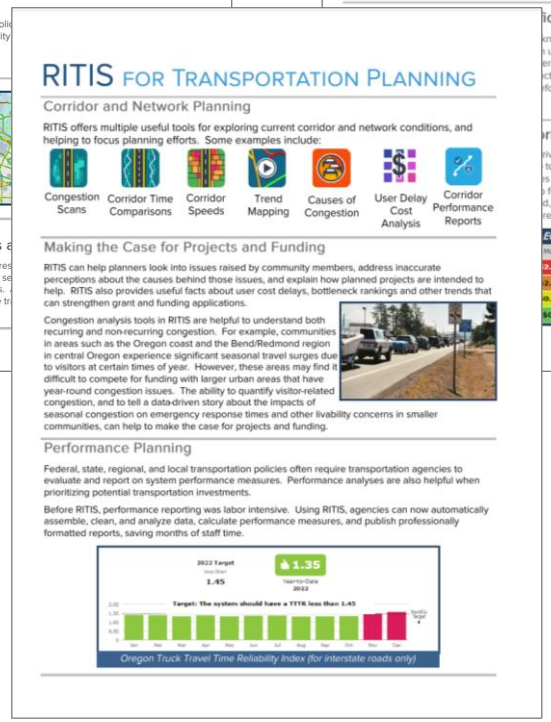


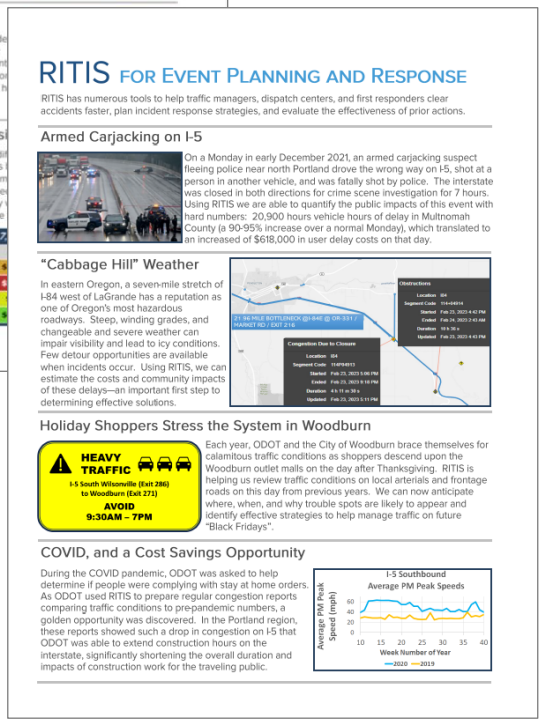
Our Current RITIS Flyers

- Four primary work focus areas: Operations, Planning, Work Zone, and Event Management









Transportation System Operations

Traffic engineering tasks that could be enhanced with RITIS

Benefits of using RITIS for ODOT Operations:

- Reporting templates help summarize event impacts and key takeaways for better communication and improved operations
- Real time situational awareness improves system monitoring
- Reduces agency manpower needs, saving money

OREGON RITIS

Data Fusion and Analytics Platform

Regional Integrated Transportation Information System

Innovative Analysis Tools Improve Transportation System Performance

RITIS combines and analyzes data from multiple sources, such as INRIX® probe speed data, traffic incident data, work zone information, weather, speed limits, and roadway volume profiles, to enhance real-time analysis and historic reporting capabilities. Data in Oregon's RITIS system is available from 2016 to present.

Oregon implemented RITIS to help agencies make *data-driven* decisions that reduce delays and costs for transportation system users.

Who Can Use RITIS?

RITIS is available to all ODOT staff and Oregon public agencies such as cities, counties and metropolitan planning organizations. Consultants and universities who perform work for a public agency in Oregon can also access RITIS. Access to RITIS is free of charge! Organizations must sign an INRIX data use agreement when requesting a RITIS account at www.ritis.org.

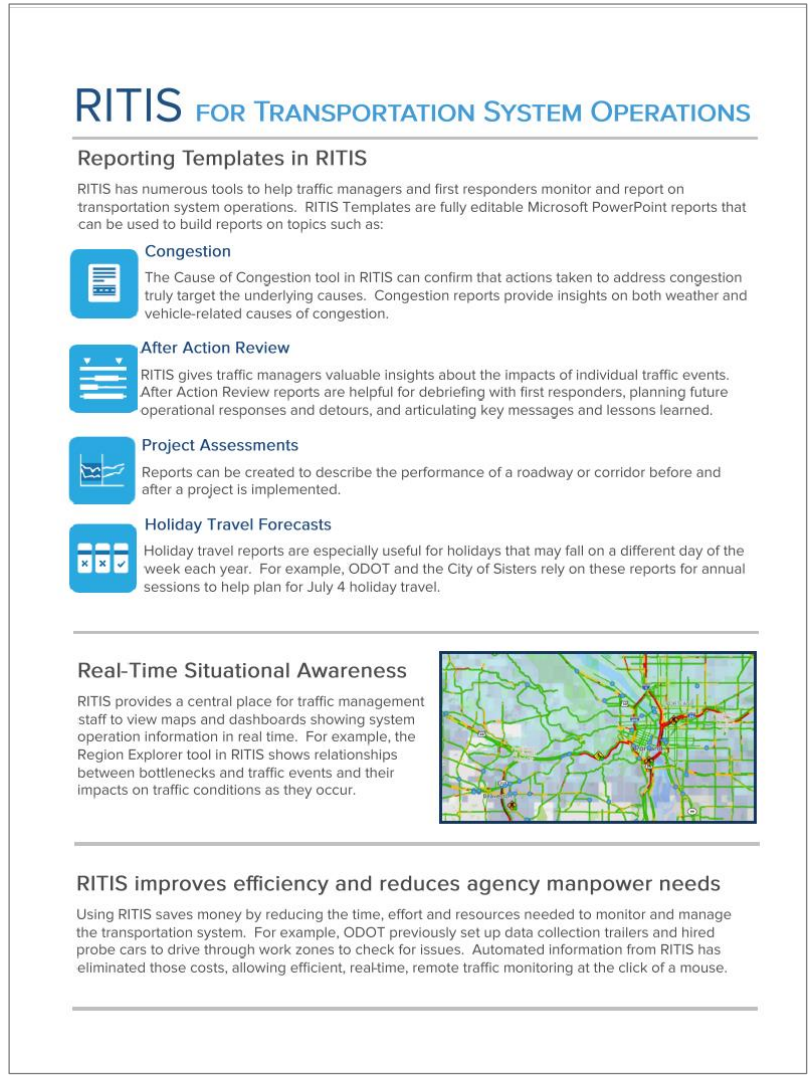
Resources

Training sessions, Oregon's RITIS Handbook, frequently asked questions, and other helpful materials are available on ODOT's RITIS webpage.

Anyone is welcome to join Oregon's RITIS Users Group! Contact Chi Mai in ODOT's Transportation Planning Analysis Unit to join.

Oregon Department of Transportation

For information about Oregon RITIS contact:
ODOT Transportation Planning and Analysis Unit
Chi Mai, PE | (503) 991-3625 | Chi.MAI@odot.oregon.gov



RITIS FOR TRANSPORTATION SYSTEM OPERATIONS

Reporting Templates in RITIS

RITIS has numerous tools to help traffic managers and first responders monitor and report on transportation system operations. RITIS Templates are fully editable Microsoft PowerPoint reports that can be used to build reports on topics such as:

Congestion

The Cause of Congestion tool in RITIS can confirm that actions taken to address congestion truly target the underlying causes. Congestion reports provide insights on both weather and vehicle-related causes of congestion.

After Action Review

RITIS gives traffic managers valuable insights about the impacts of individual traffic events. After Action Review reports are helpful for debriefing with first responders, planning future operational responses and detours, and articulating key messages and lessons learned.

Project Assessments

Reports can be created to describe the performance of a roadway or corridor before and after a project is implemented.

Holiday Travel Forecasts

Holiday travel reports are especially useful for holidays that may fall on a different day of the week each year. For example, ODOT and the City of Sisters rely on these reports for annual sessions to help plan for July 4 holiday travel.

Real-Time Situational Awareness

RITIS provides a central place for traffic management staff to view maps and dashboards showing system operation information in real time. For example, the Region Explorer tool in RITIS shows relationships between bottlenecks and traffic events and their impacts on traffic conditions as they occur.

RITIS improves efficiency and reduces agency manpower needs

Using RITIS saves money by reducing the time, effort and resources needed to monitor and manage the transportation system. For example, ODOT previously set up data collection trailers and hired probe cars to drive through work zones to check for issues. Automated information from RITIS has eliminated those costs, allowing efficient, real-time, remote traffic monitoring at the click of a mouse.

Transportation Planning

Planning tasks that could be enhanced with RITIS

Benefits of using RITIS for ODOT Planning:

- Better corridor & network planning leads to more effective solutions for enhancing mobility, accessibility and reliability
- Helps provide the analytical underpinning to building a case for projects and program funding
- Performance reporting helps communicate things like project need or effectiveness, and can also be used to justify similar projects or programs

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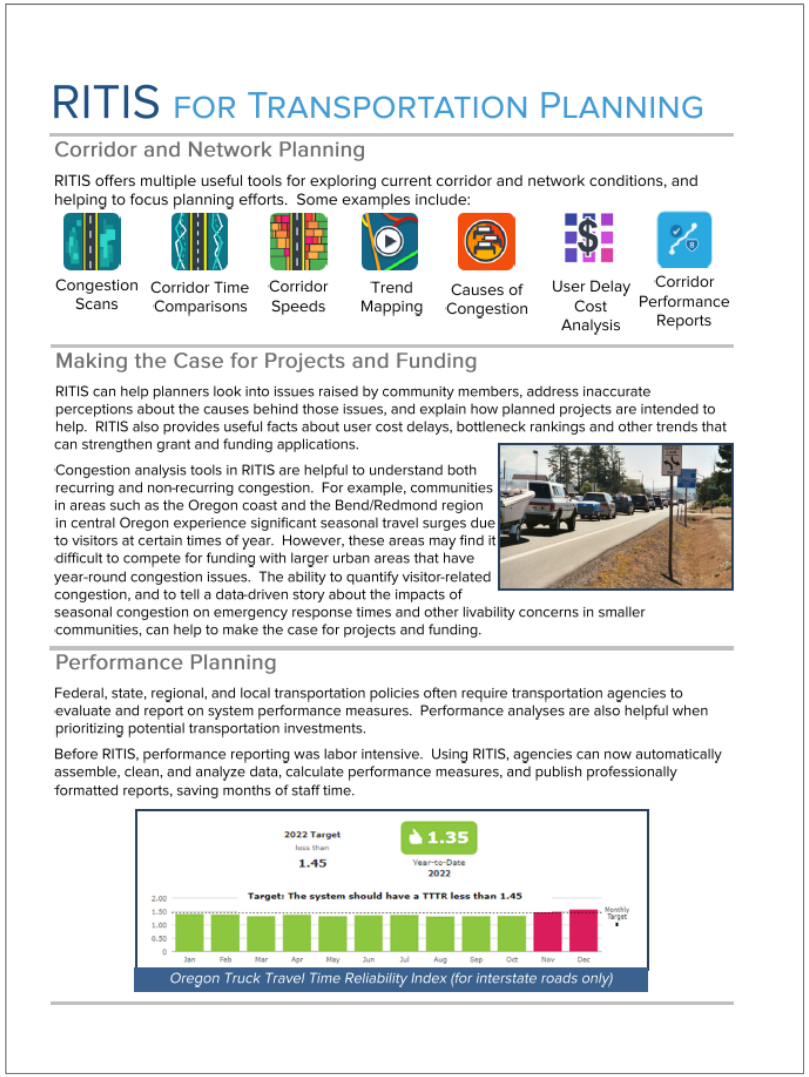

RITIS FOR TRANSPORTATION PLANNING

Corridor and Network Planning

RITIS offers multiple useful tools for exploring current corridor and network conditions, and helping to focus planning efforts. Some examples include:

Making the Case for Projects and Funding

RITIS can help planners look into issues raised by community members, address inaccurate perceptions about the causes behind those issues, and explain how planned projects are intended to help. RITIS also provides useful facts about user cost delays, bottleneck rankings and other trends that can strengthen grant and funding applications.

Congestion analysis tools in RITIS are helpful to understand both recurring and non-recurring congestion. For example, communities in areas such as the Oregon coast and the Bend/Redmond region in central Oregon experience significant seasonal travel surges due to visitors at certain times of year. However, these areas may find it difficult to compete for funding with larger urban areas that have year-round congestion issues. The ability to quantify visitor-related congestion, and to tell a data-driven story about the impacts of seasonal congestion on emergency response times and other livability concerns in smaller communities, can help to make the case for projects and funding.

Performance Planning

Federal, state, regional, and local transportation policies often require transportation agencies to evaluate and report on system performance measures. Performance analyses are also helpful when prioritizing potential transportation investments.

Before RITIS, performance reporting was labor intensive. Using RITIS, agencies can now automatically assemble, clean, and analyze data, calculate performance measures, and publish professionally formatted reports, saving months of staff time.

Oregon Truck Travel Time Reliability Index (for interstate roads only)

Work Zone Management

Work zone management tasks that could be enhanced with RITIS

Benefits of using RITIS for ODOT Work Zones:

- Improved monitoring and responding to work zone delays, due to weather, incidents, congestion, etc.
- Helps anticipate work zone issues due to things like holiday travel
- Allows for comprehensive post-action evaluation to improve future work zone operation

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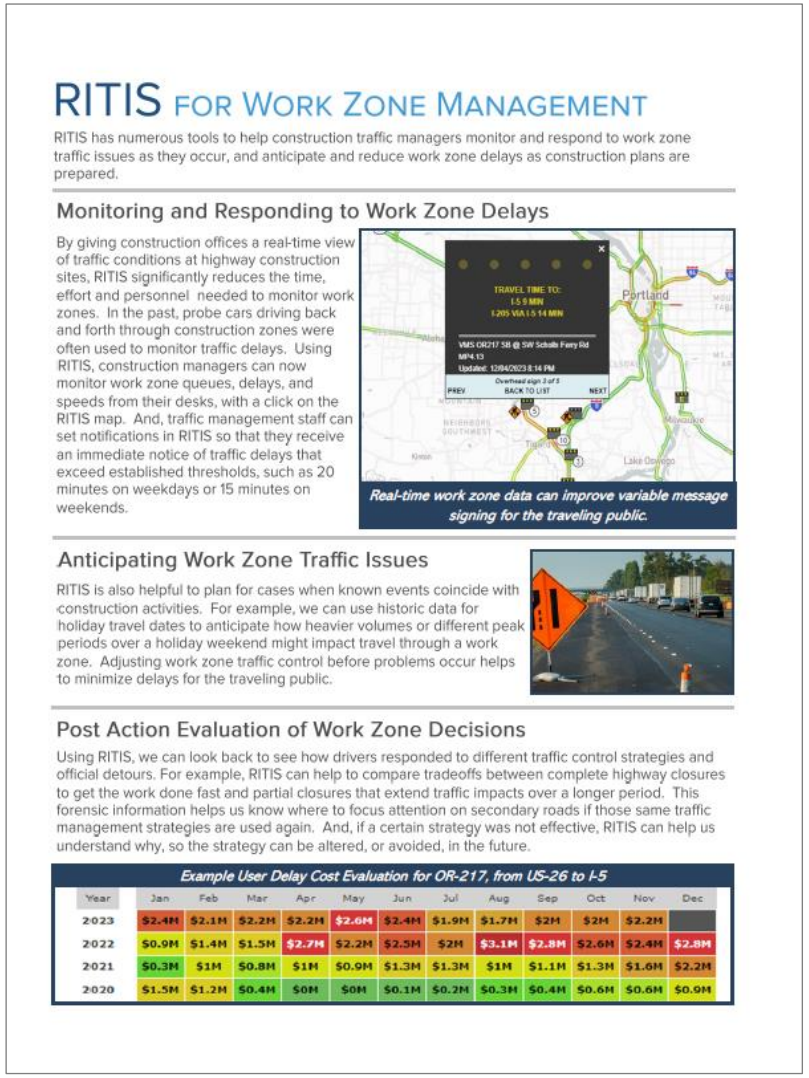

RITIS FOR WORK ZONE MANAGEMENT

RITIS has numerous tools to help construction traffic managers monitor and respond to work zone traffic issues as they occur, and anticipate and reduce work zone delays as construction plans are prepared.

Monitoring and Responding to Work Zone Delays

By giving construction offices a real-time view of traffic conditions at highway construction sites, RITIS significantly reduces the time, effort and personnel needed to monitor work zones. In the past, probe cars driving back and forth through construction zones were often used to monitor traffic delays. Using RITIS, construction managers can now monitor work zone queues, delays, and speeds from their desks, with a click on the RITIS map. And, traffic management staff can set notifications in RITIS so that they receive an immediate notice of traffic delays that exceed established thresholds, such as 20 minutes on weekdays or 15 minutes on weekends.

Real-time work zone data can improve variable message signing for the traveling public.

Anticipating Work Zone Traffic Issues

RITIS is also helpful to plan for cases when known events coincide with construction activities. For example, we can use historic data for holiday travel dates to anticipate how heavier volumes or different peak periods over a holiday weekend might impact travel through a work zone. Adjusting work zone traffic control before problems occur helps to minimize delays for the traveling public.

Post Action Evaluation of Work Zone Decisions

Using RITIS, we can look back to see how drivers responded to different traffic control strategies and official detours. For example, RITIS can help to compare tradeoffs between complete highway closures to get the work done fast and partial closures that extend traffic impacts over a longer period. This forensic information helps us know where to focus attention on secondary roads if those same traffic management strategies are used again. And, if a certain strategy was not effective, RITIS can help us understand why, so the strategy can be altered, or avoided, in the future.

Example User Delay Cost Evaluation for OR-217, from US-26 to I-5

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	$2.4M	$2.1M	$2.2M	$2.2M	$2.6M	$2.4M	$1.9M	$1.7M	$2M	$2M	$2.2M	
2022	$0.9M	$1.4M	$1.5M	$2.7M	$2.2M	$2.5M	$2M	$3.1M	$2.8M	$2.6M	$2.4M	$2.8M
2021	$0.3M	$1M	$0.8M	$1M	$0.9M	$1.3M	$1.3M	$1M	$1.1M	$1.3M	$1.6M	$2.2M
2020	$1.5M	$1.2M	$0.4M	$0M	$0M	$0.1M	$0.2M	$0.3M	$0.4M	$0.6M	$0.6M	$0.9M

Event Management

Event management tasks that could be enhanced with RITIS

Benefits of using RITIS for Event Management:

- Better develop incident response strategies
- Clear incidents faster and more effectively with real-time monitoring of the incident and system network
- Evaluate the effectiveness of event planning, response and clearance to make corresponding improvements

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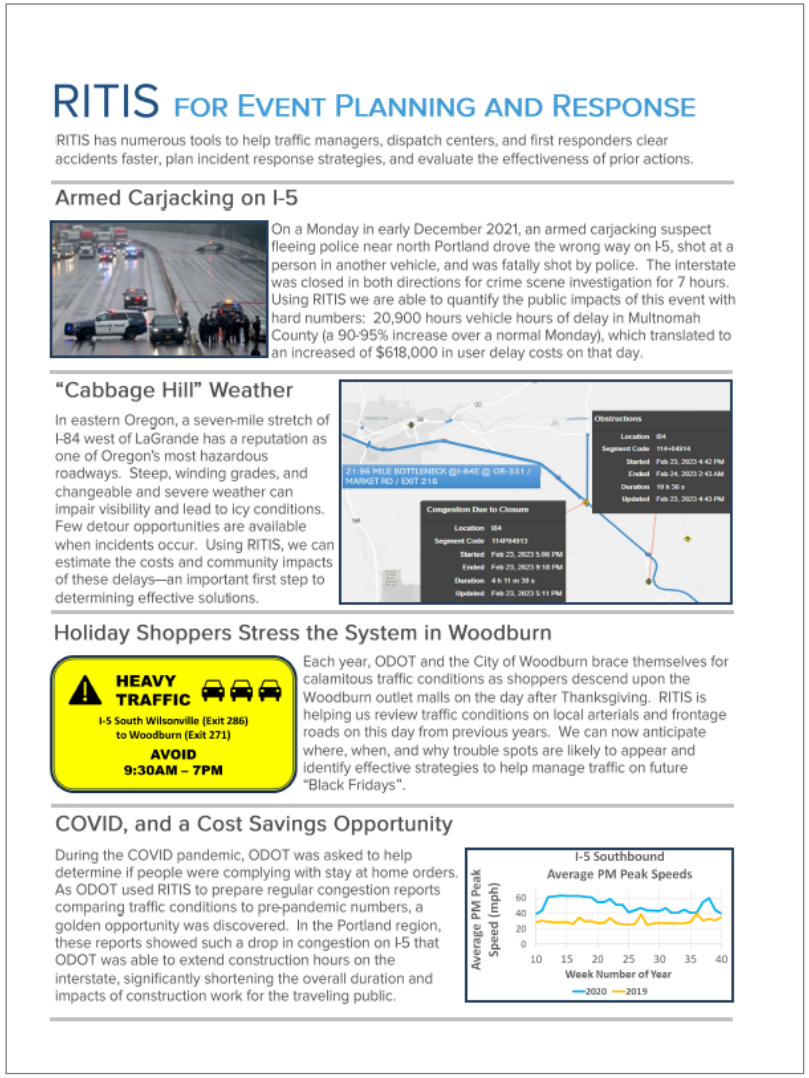


RITIS FOR EVENT PLANNING AND RESPONSE

RITIS has numerous tools to help traffic managers, dispatch centers, and first responders clear accidents faster, plan incident response strategies, and evaluate the effectiveness of prior actions.

Armed Carjacking on I-5

On a Monday in early December 2021, an armed carjacking suspect fleeing police near north Portland drove the wrong way on I-5, shot at a person in another vehicle, and was fatally shot by police. The interstate was closed in both directions for crime scene investigation for 7 hours. Using RITIS we are able to quantify the public impacts of this event with hard numbers: 20,900 hours vehicle hours of delay in Multnomah County (a 90-95% increase over a normal Monday), which translated to an increased of $618,000 in user delay costs on that day.

"Cabbage Hill" Weather

In eastern Oregon, a seven-mile stretch of I-84 west of LaGrande has a reputation as one of Oregon's most hazardous roadways. Steep, winding grades, and changeable and severe weather can impair visibility and lead to icy conditions. Few detour opportunities are available when incidents occur. Using RITIS, we can estimate the costs and community impacts of these delays—an important first step to determining effective solutions.

Holiday Shoppers Stress the System in Woodburn

HEAVY TRAFFIC
I-5 South Wilsonville (Exit 286) to Woodburn (Exit 271)
AVOID
9:30AM – 7PM

Each year, ODOT and the City of Woodburn brace themselves for calamitous traffic conditions as shoppers descend upon the Woodburn outlet malls on the day after Thanksgiving. RITIS is helping us review traffic conditions on local arterials and frontage roads on this day from previous years. We can now anticipate where, when, and why trouble spots are likely to appear and identify effective strategies to help manage traffic on future "Black Fridays".

COVID, and a Cost Savings Opportunity

During the COVID pandemic, ODOT was asked to help determine if people were complying with stay at home orders. As ODOT used RITIS to prepare regular congestion reports comparing traffic conditions to pre-pandemic numbers, a golden opportunity was discovered. In the Portland region, these reports showed such a drop in congestion on I-5 that ODOT was able to extend construction hours on the interstate, significantly shortening the overall duration and impacts of construction work for the traveling public.

Reaction to Oregon RITIS Flyers

- We’ve received many positive comments on the easy-to-read content and visual appeal of the flyers
- The flyers saves us time explaining RITIS uses cases, and helps others get up to speed fast
- We anticipate developing more flyers for other work focus areas, continuing to integrate RITIS into ODOT’s workflow

Contact

Chi Mai, PE
Transportation System Analysis Engineer
Oregon DOT, Transportation Planning Analysis Unit
Chi.Mai@odot.oregon.gov

Development of a Crash Event Summary Document

Ian Kilburn

TMC Supervisor

Vermont AOT

VERMONT

AGENCY OF TRANSPORTATION

Effort Background

Prior to May 2023, Vermont did not have access to Big Transportation Data. From May 2023, Vermont has been focused on building a Community of Excellence in this field and developing use cases. Part of that build is using RITIS Reporting templates, starting with After-Action Reviews.

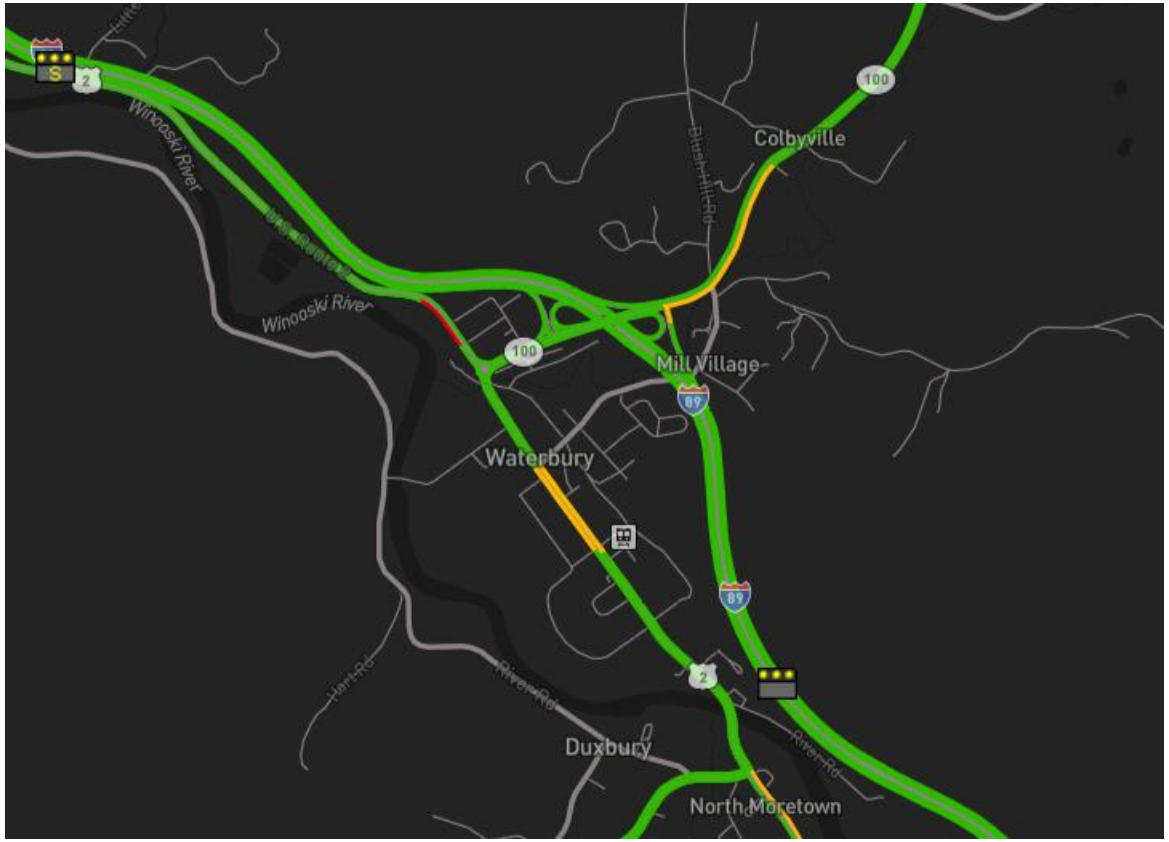
After-Action Review Template Goals:

- Easily digestible Executive Summary of incidents
- Provide data to incident responders
- Improve safety
- Improve traffic incident management
- Increase interagency communications
- Increase awareness of the data

Developing a Community of Excellence

How Vermont is building and supporting its Community of Excellence with Big Transportation Data:

- Formation of an Extended Core Team
- Extended Core regular meetings
- Email Updates
- Quarterly Data Workshops
- Running Survey
- Big Transportation Data MS Team
  - Regular postings
  - Training resources
  - Presentations
- Provide and develop more use case examples



RITIS Products Used

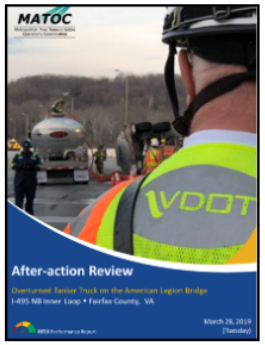
PDA Suite Tools

RITIS Performance Reporting Templates

After Action Review

Use this template package along with RITIS tool results and your agency's content to create an after-action review report, including front and back covers, an event high-level summary page and an impact evaluation page that graphically depicts mainline and regional impacts, delay costs, vehicle hours of delay, key takeaways, and more. There are also several use case examples with varying levels of event complexities and some more technically-oriented report examples.

Overview



1. **Click to download the PowerPoint template** to create an after action review of a major incident.

Download Template | Download Design Resources

2. **Download Agency Use Case examples** below to see how other agencies have used these templates or have created similar reports using content from RITIS:

- **MATOC** Overturned Tanker Truck on the American Legion Bridge (using this template)
- **GDOT** I-75 Pedestrian Fatality (executive-level template)
- **MATOC** Vehicle Collision and Truck Fire on the Woodrow Wilson Bridge (1 technical, 3 executive templates)
- **massDOT** Truck Bridge Strike I-95 SB at Exit 30B (includes Trend Map animation)
- **massDOT** Vehicle Collision on WB I-290 (executive-level template)
- **FDOT** Fuel Tanker Collision and Fire on I-95 (Major Incident Report)

3. **Scroll down to learn how to create this report** or click on the 'How To Create Report' in the navigational menu.

VERMONT
AGENCY OF TRANSPORTATION

Event Summary 2 Car Motor Vehicle Crash

SB at MM 71 in Bolton, VT • Tuesday, October 31, 2023

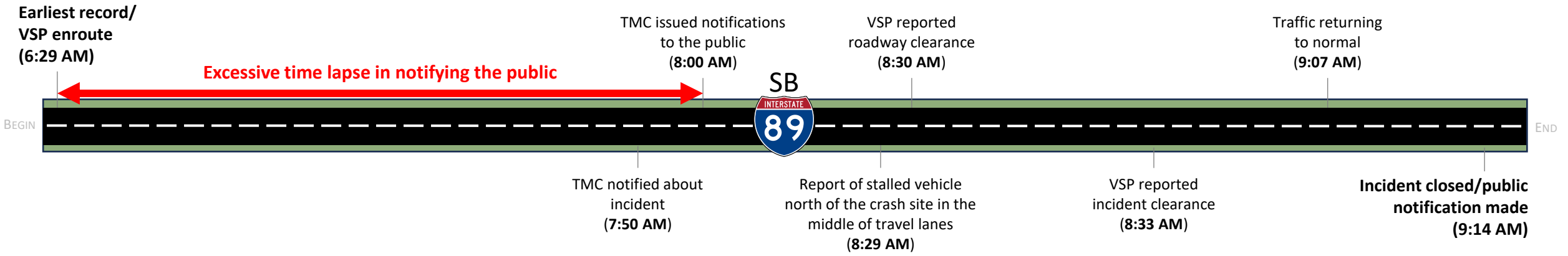
The incident occurred at about 6:30 AM, with traffic back to normal about 9:07 AM.

1 vehicle struck a guardrail and was subsequently struck by another vehicle.

The I-89 SB lanes were delayed for 2.5+ hours.

VSP, Bolton Fire, & Richmond Rescue actively participated in this incident.

Incident Timeline | Total Elapsed Time: 2 hours 38 minutes



VSP was the first on the scene to investigate this incident.

99.7min
(vs avg Tues of 12.8m)

Travel time increase to 99.7m (or 780%) on the day of the accident vs Tues. in October 2023 @ 7:30 AM.

Black ice and slippery conditions reported the morning of the incident.

1,095h
(vs avg Tues of 437)

Veh-hr. of Delay increase to 1,095 (or 350%) on the day of the accident vs an average Tues. in October 2023.

Backups persisted for 2.5+ hours

$46K
(vs avg Tues of $13K)

Delay cost increase to $46K (or 350%) on the day of the accident vs an average Tues. in October 2023.

Injuries reported:
- 1 minor injury

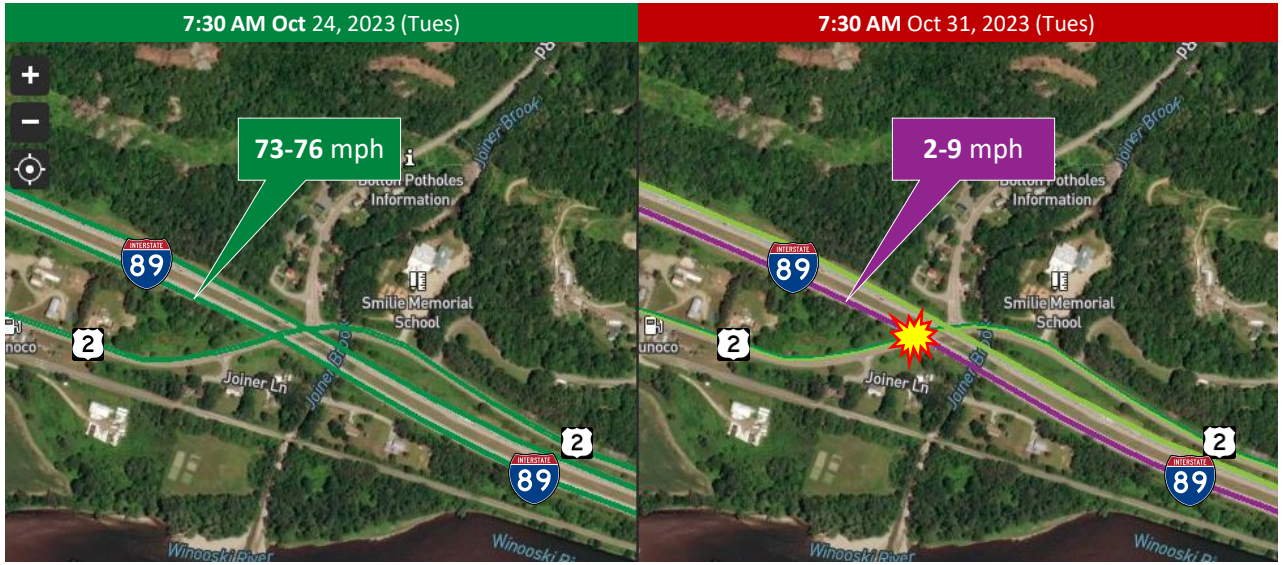
VERMONT
AGENCY OF TRANSPORTATION

Incident Impacts

2 Car Motor Vehicle Crash on I-89 SB

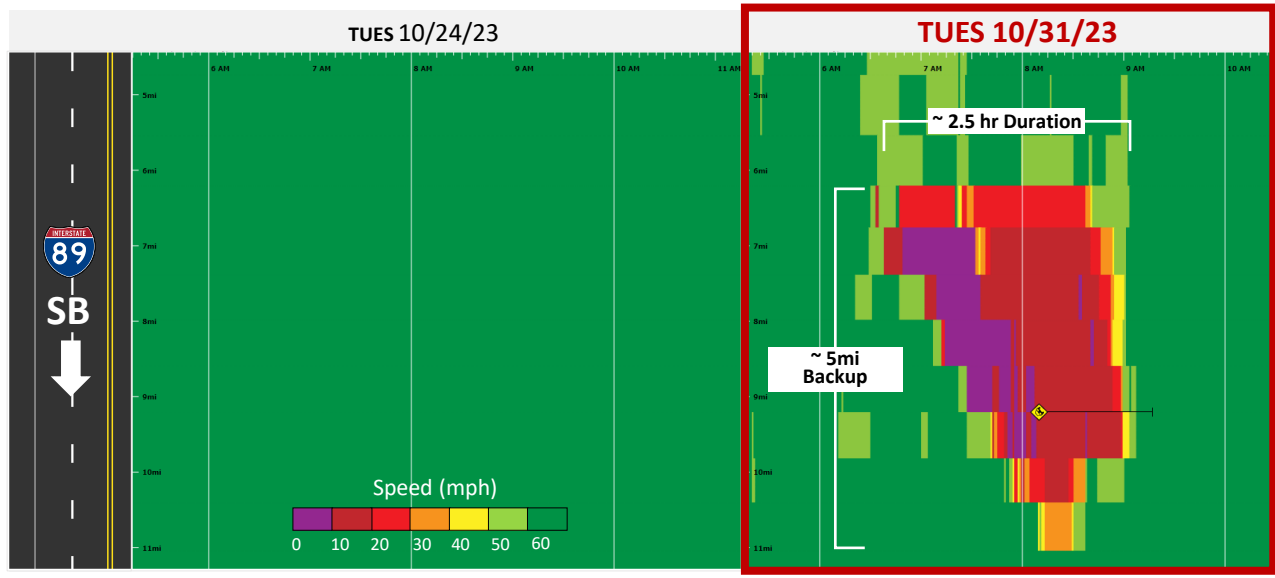
I-89 SB at MM 71 in Bolton, VT • Tuesday, October 31, 2023

Area Impacts (Click here to view Trend Map regional network animations)



Major congestion became apparent at around 7:30 AM as traffic back-ups and slow-downs increased significantly. Further along in the animations, note significant congestion along I-89 SB lasting for a few hours. The incident was cleared, and traffic was back to free-flow conditions at approximately 9:07 AM.

I-89 SB Bolton Impacts (Click here to open Congestion Scan)



Comparisons of the I-89 on the day of the incident vs the week prior to the incident shows substantial crash impact. **Backups of 3-5 miles lasted over 2.5+ hours were experienced** during the response & clean-up of the incident & subsequent reopening of the lane.

I-89 SB Bolton User Delay Cost (Click here to open full UDC results)

This section of I-89 SB from Exit 11 to Exit 10 - showed significant impact from the incident, in terms of user delay cost and vehicle hours of delay.

$41.2k
in delay costs

1,365
veh-hr. of delay

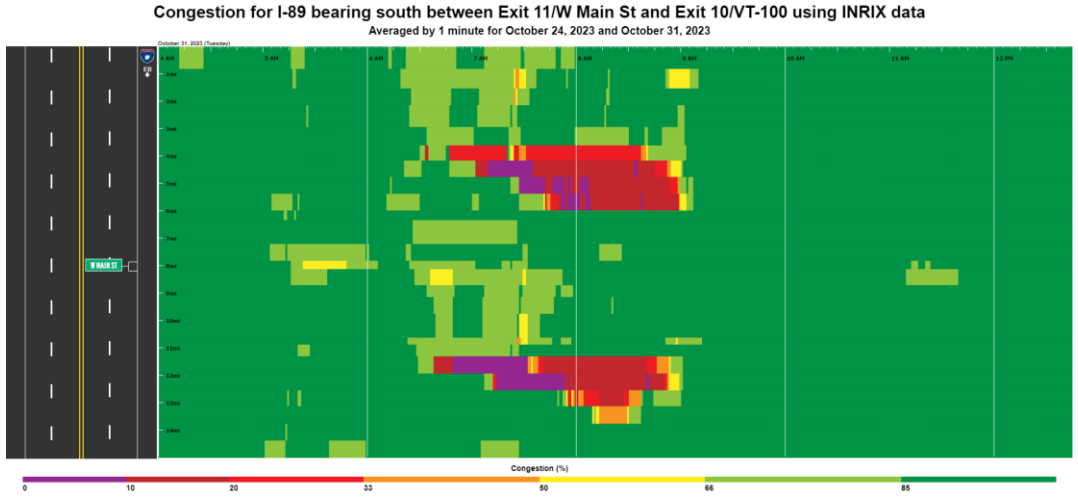
Takeaways

- **Messaging** – Due to the delays in notification to the TMC, effective messaging was not put out in a timely fashion, likely leading to further congestion and delays.
- **Management** – Improving incident clearance times and limiting unnecessary responders on scene would assist in limiting congestion.
- **Detours and Diversions** – With earlier notification, motorists could seek alternate routes (US-2) and avoid adding to congestion.

Effective inter-agency information sharing and coordination due to Unified Command structure
"Knowing your local and regional partners before you get to the scene is critical"

Some Reactions to Our Report

- *"Oooo, ahhh." – Someone probably…*
- *"The report is concise, aesthetically pleasing, and provides valuable information."*
- *"Provides a quick capture of the travel impacts in a clear, high-level overview."*
- *"Powerful depiction of challenges we have to resolve regarding AOT/VSP communications protocols."*
- *"Earlier notification would have enabled earlier deployment of CMS messaging and mitigation of travel delays and costs."*
- *"Absolutely fantastic, and what a story these slides tell."*



Next Steps

After-Action Specific

- Create AARs for the following:
  - Full or partial interstate closures
  - Full closures of major routes
  - Closures of extended duration
- Distribute AAR to involved agencies

More Globally

- Expand user groups
- Identify and empower champions
- Identify specific use cases and appropriate stakeholders
- Further develop dashboards

Contact

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Highway Division
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Quarterly Congestion Reporting for the Baltimore Region

Ed Stylc

Transportation Analyst

Baltimore Metropolitan Council

BALTIMORE METROPOLITAN COUNCIL

About Us

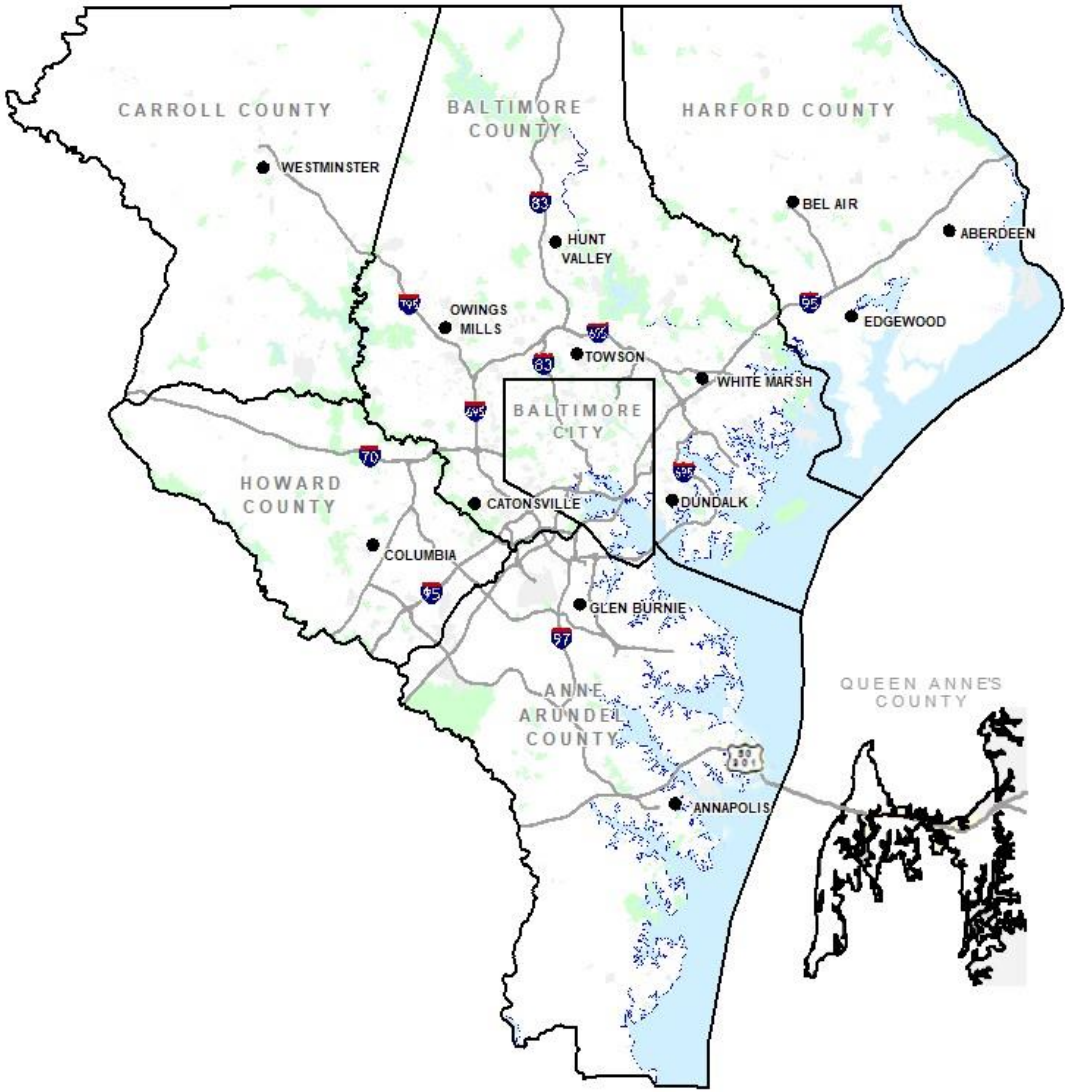
The **Baltimore Regional Transportation Board (BRTB)** is the federally designated metropolitan planning organization (MPO) for the Baltimore region.

The BRTB is housed at and staffed by the **Baltimore Metropolitan Council (BMC)**.

BRTB Baltimore Regional Transportation Board

BALTIMORE METROPOLITAN COUNCIL

Baltimore Region



Approximately 2.8 million residents live in the Baltimore region, the 20th most populated Metropolitan Statistical Area in the United States, according the U.S. Census Bureau.

Gross Domestic Product is $187.4 billion, which is half of Maryland's $378.3 billion GDP.

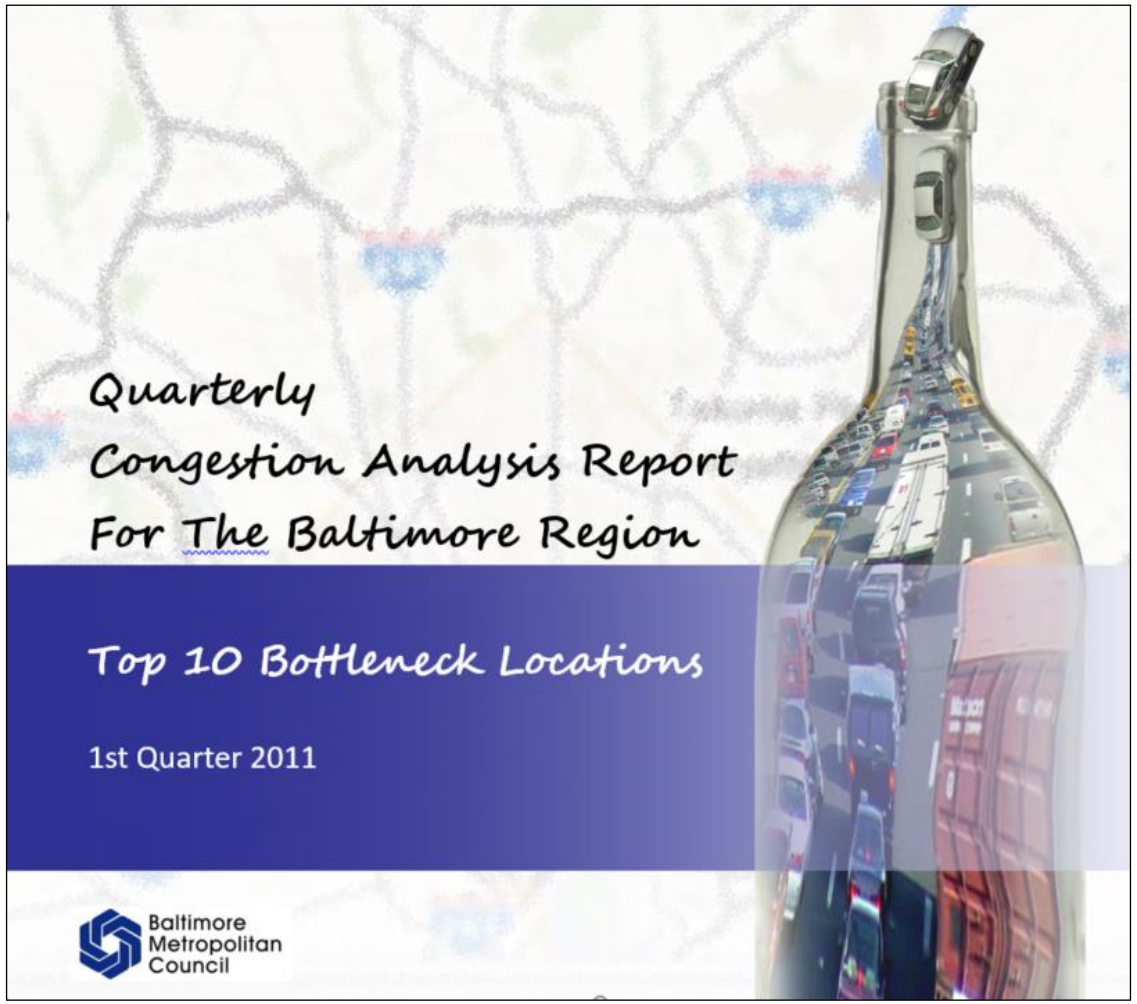
Why RITIS?

- BMC received access to RITIS in early 2011
- What to do with this data and new tools?
- A bottleneck report or "**Quarterly Congestion Analysis Report**" – used to help determine projects and programs - was initially developed as a static handout document
- There are multiple audiences for reporting that can benefit from RITIS visualizations:
    - BMC Technical Committee & member jurisdictions
    - Elected Officials (ITS Legislative Technology Fair)
    - MPO Certification Review
    - Local Press (Baltimore Sun, NPR Radio)
    - General Public

How the Report Size Evolved

Year	Pages	
2011	11	
2015	34	
2020	42	
2021	**75**	After CMP Committee review
2022	**41**	New templates implemented

Original Cover 2011



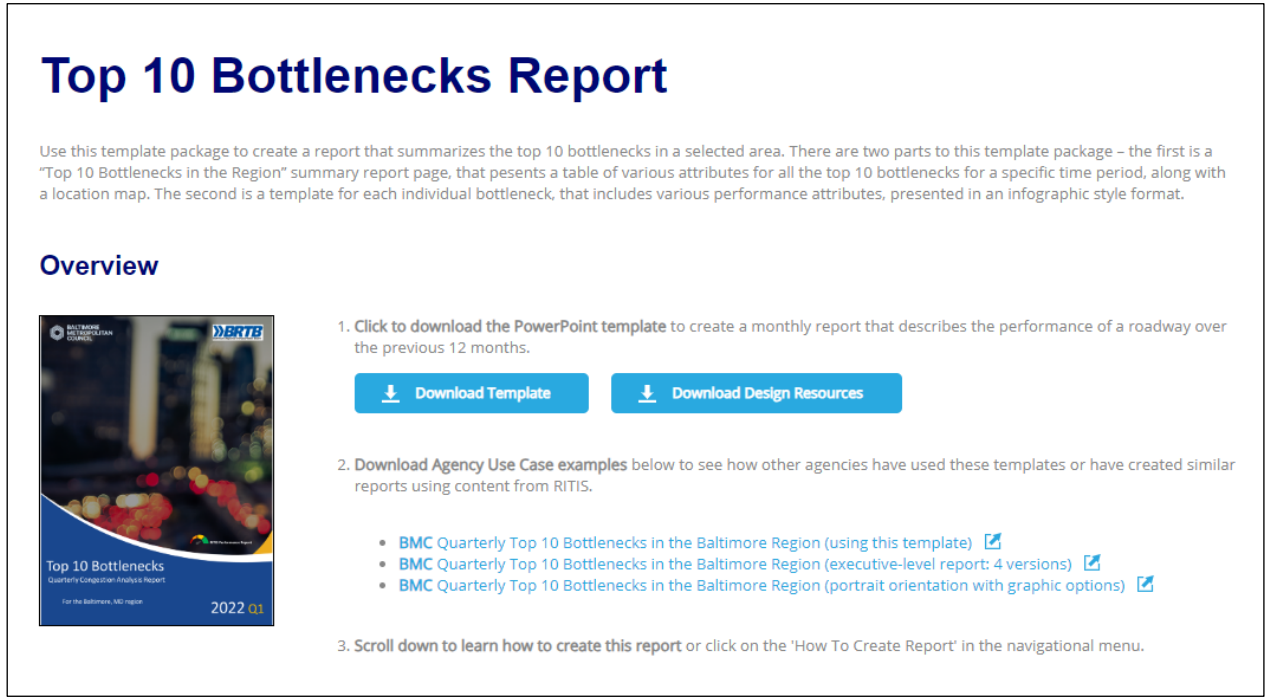
Reporting Improvement Timeline

- After several years of reporting, we were looking to “up our game”
- Interested in better graphics and more information in a more compact format
- Made several adjustments over the years as newer tools became available
- Development of templates by the Performance Working Group came at the perfect time as we looked to upgrade and streamline our process
- BMC Technical and CMP Committees drove the process approved the new report format
- **New look reports using templates from Performance Measures Group implemented in 2022**

RITIS Products Used

PDA Suite Tools

RITIS Reporting Templates



https://learn.ritis.org/reports/top-10-bottlenecks

Current Report Highlights

Quarterly Congestion Report Table of Contents

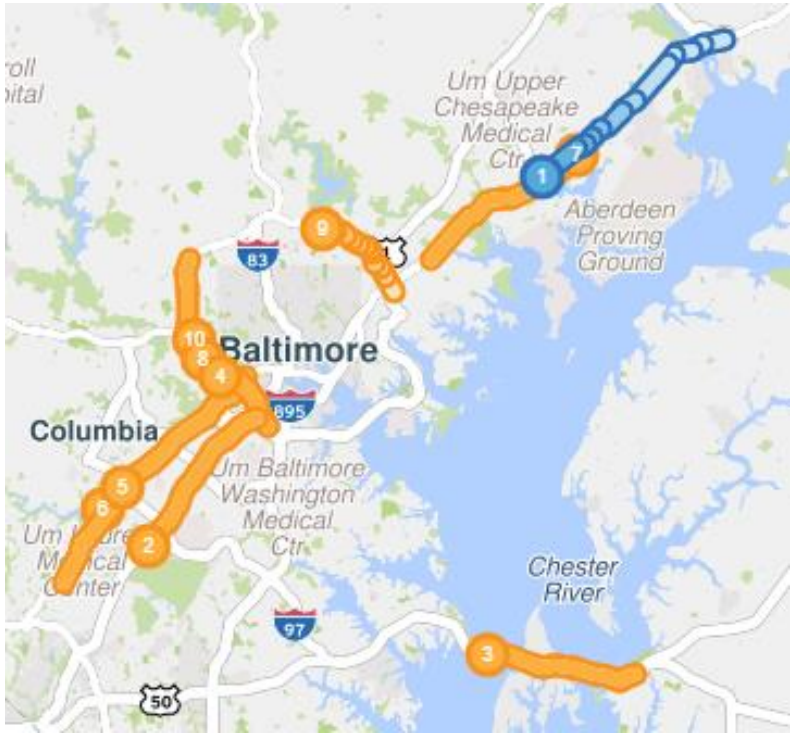
Top 10 Bottlenecks in the Region

Q3 2023

Rank	Location	Previous Quarter Ranking	Avg. Max. Length (mi)	Avg. Daily Duration	Volume Estimate (AADT)	Total Delay (Millions)
1	I-95 S @ MD-24/EXIT 77		5.54	2 h 59 m	56,258	**142.8**
2	MD-295 S @ MD-198	2	3.14	**6 h 07 m**	47,378	129.2
3	US-50 W @ BAY BRIDGE	6	4.84	1 h 50 m	32,168	92.1
4	I-695 IL @ MD-372/WILKENS AVE/EXIT 12	7	2.01	1 h 50 m	98,319	71.1
5	I-95 N @ MD-32/EXIT 38		3.58	1 h 26 m	99,120	61.6
6	I-95 S @ MD-216/EXIT 35	8	4.51	1 h 19 m	98,665	56.5
7	I-95 N @ MD-543/EXIT 80	9	**6.24**	55 m	70,960	53.4
8	I-695 IL @ EDMONDSON AVE/EXIT 14	5	2.27	1 h 17 m	100,902	52.4
9	I-695 OL @ PROVIDENCE RD/EXIT 28		3.21	1 h 10 m	79,461	46.8
10	I-695 OL @ I-70/EXIT 16		2.59	1 h 48 m	**102,997**	44.3

IL = Inner Loop OL = Outer Loop **Red #s** = highest value for that metric

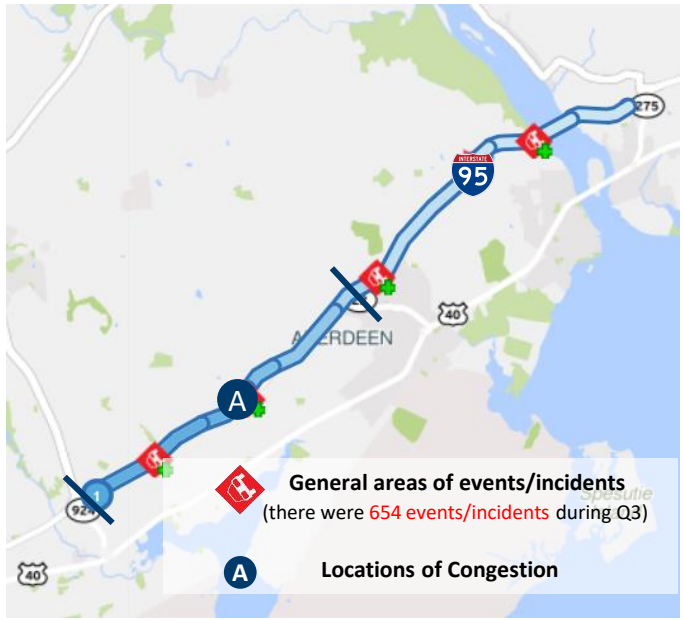
Total Delay = Raw Speed drop weighted by VMT Factor (in millions)



*Bottlenecks are ranked by **Base Impact** – the sum of queue lengths over the duration of the bottleneck and weighted by speed differential, congestion and **total delay**.*

1 I-95 S @ MD-24/EXIT 77

Quarterly Bottleneck Evaluation Summary Q3 2023



PK. AVG. SPEED

AM Peak | 9:00 AM
69.2 mph
(10% slower than free flow)

PM Peak | 2:55 PM
44.7 mph
(40% slower than free flow)

PK. TRAVEL TIME

AM Peak | 9:00 AM
13.7 min

PM Peak |2:55 PM
21.0 min

Q3 DELAY COST

Delay Cost
$3.032 M

Veh-hrs. of Delay
100,396 h

Congested Locations

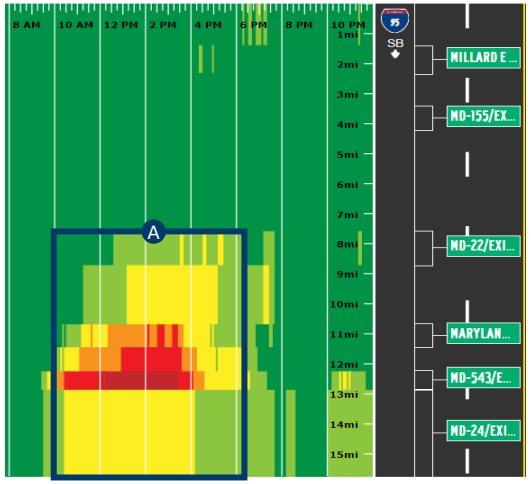
A **9:50AM – 6:30PM** MD-22/Exit 85 to MD-24/Exit 77

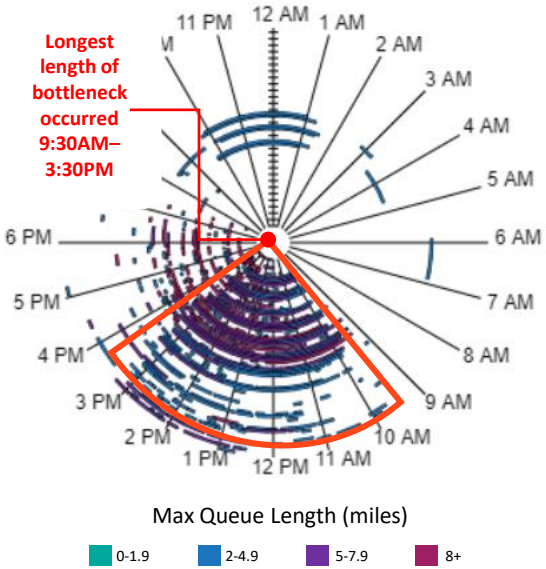
Bottleneck Occurrences

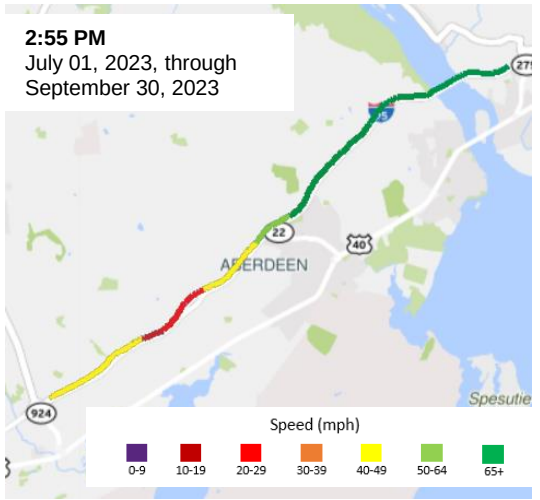
The center represents the beginning **of 07.01.23** and the outer edge the end of **09.30.23**

Corridor Speeds Over Time

For animated playback of corridor speeds over time, click anywhere on the map below







I-95 Express Toll Lanes Northbound Extension From MD 43 to MD 152 is responsible for shoulder and lane closures primarily in the daylight hours.

The extension is expected to be open to traffic by the end of 2023 to MD 152 , with the full extension to north of MD 24 open to traffic by the end of 2026. This includes the Old Joppa Road Overpass Replacement and off peak shoulder and lane closures.

BRTB Baltimore Regional Transportation Board

Top 20 Bottlenecks in Local Jurisdictions 3rd Quarter 2023

Anne Arundel County

Rank	Location
1	MD-295 S @ MD-198
2	MD-295 N @ CANINE RD
3	MD-295 N @ MD-175
4	US-50 E @ BAY BRIDGE
5	MD-295 N @ MD-100
6	I-695 OL @ MD-170/CAMP MEADE RD/EXIT 6
7	MD-2 N @ ROBINSON RD
8	MD-295 S @ A.A.-P.G. COUNTY BORDER
9	MD-295 S @ CANINE RD
10	I-97 S @ MD-178/EXIT 5
11	MD-3 N @ MD-424/CONWAY RD/DAVIDSONVILLE RD
12	MD-3 N @ MD-175/MILLERSVILLE RD/ANNAPOLIS RD
13	I-97 S @ US-301/US-50
14	MD-295 N @ PRINCE GEORGE'S/ARUNDEL CO LINE
15	US-50 E @ MD-648/BALTIMORE ANNAPOLIS BLVD
16	US-50 E @ WILLIAM P LANE BRIDGE TOLL PLAZA
17	US-50 E @ MD-70/ROWE BLVD/EXIT 24
18	MD-295 S @ MD-175
19	MD-2 S @ MD-253/MAYO RD
20	US-50 W @ BAY BRIDGE

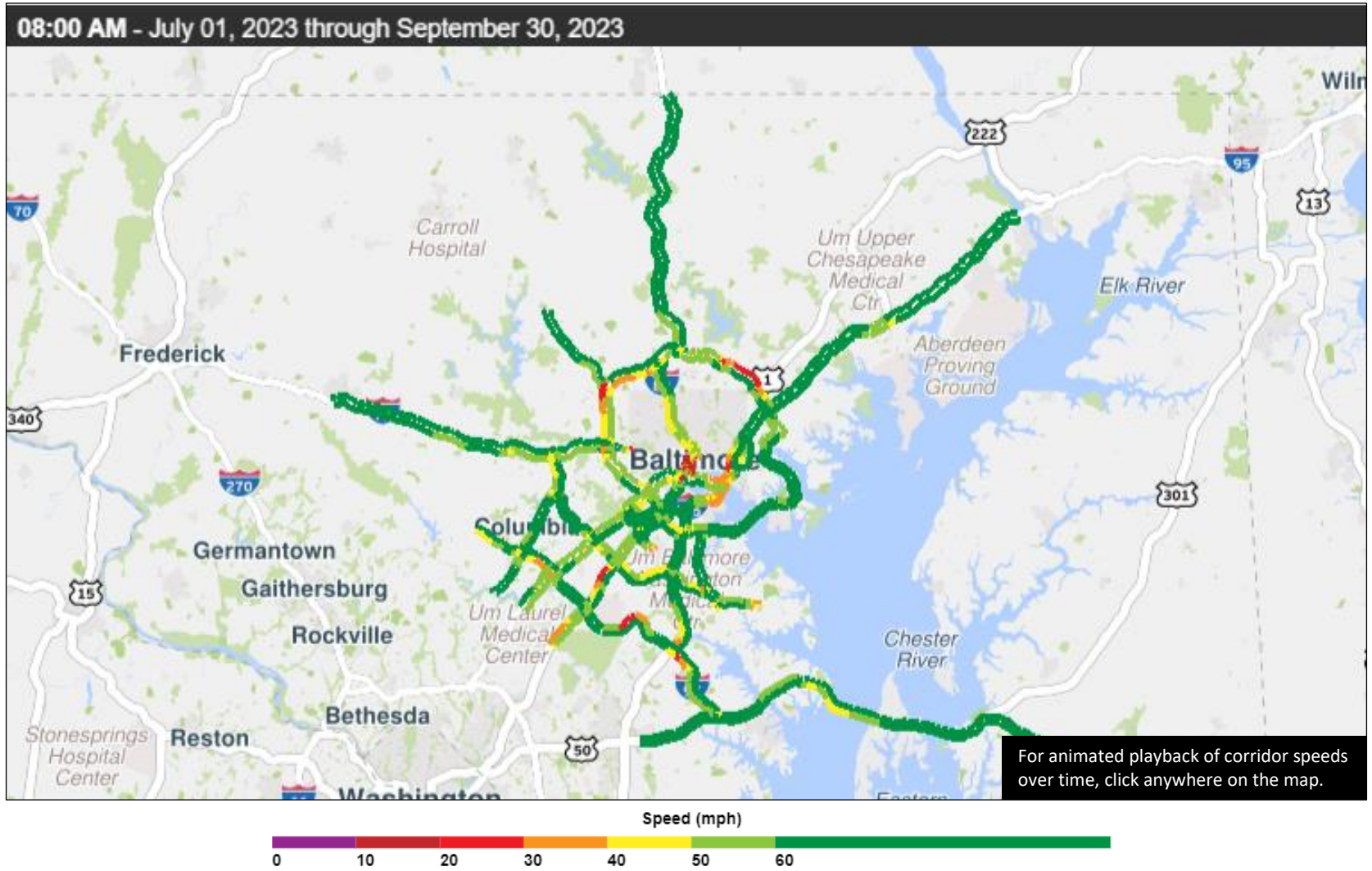
Baltimore City

Rank	Location
1	I-895 N @ HARBOR TUNNEL THWY (NORTH)
2	I-895 S @ HARBOR TUNNEL THWY (SOUTH)
3	I-95 S @ FORT MCHENRY TUNNEL
4	I-95 N @ FORT MCHENRY TUNNEL
5	MD-295 N @ BAYARD ST
6	I-95 N @ I-95 (EAST)
7	I-95 N @ I-95 (BALTIMORE)/FORT MCHENRY TUNNEL(EAST)
8	I-95 S @ I-95 (BALTIMORE)/FORT MCHENRY TUNNEL(WEST)
9	I-395 N @ W CONWAY ST
10	I-95 N @ MD-295/BALTIMORE WASHINGTON PKWY/EXIT 52
11	US-40 W @ COOKS LN
12	I-895 N @ HARBOR TUNNEL THWY (SOUTH)
13	I-895 S @ HARBOR TUNNEL THWY (NORTH)
14	I-895 N @ O'DONNELL ST/EXIT 11
15	MARTIN L KING JR BLVD N @ MULBERRY ST
16	W LOMBARD ST E @ S MARTIN LUTHER KING BLVD
17	I-83 S @ COLD SPRING LN/EXIT 9
18	I-95 S @ DUNDALK AVE/EXIT 58
19	FOREST PARK AVE N @ WINDSOR MILL RD
20	I-95 S @ WASHINGTON BLVD/EXIT 51

- **Ranked by Base Impact -** the aggregation of queue length over time for congestion at each location in mile minutes. It is then weighted by **Total Delay** – Raw speed drop weighted by VMT factor.

Regional Speed Maps

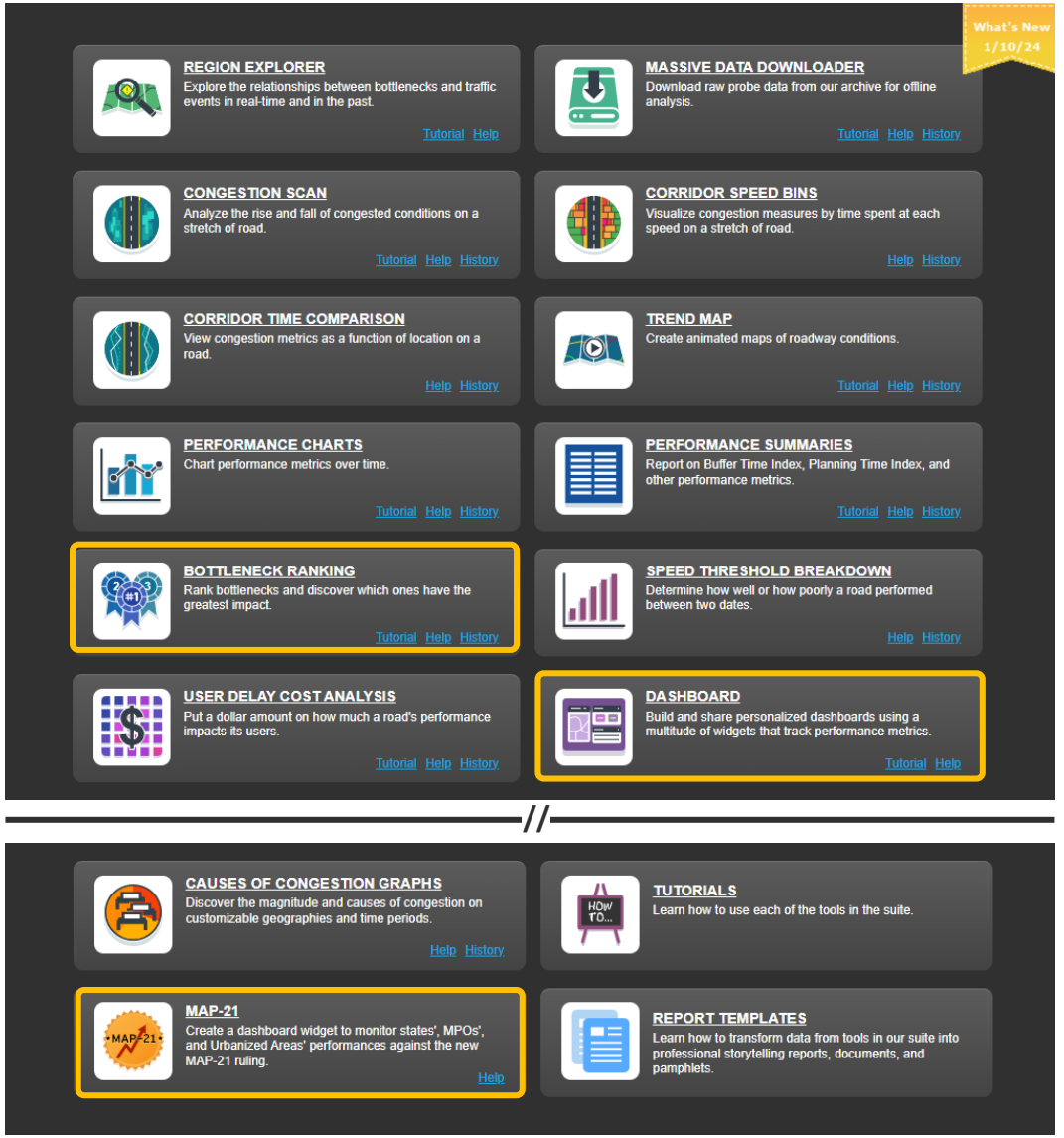
AM Peak Period Rush Hour: 3rd Quarter 2023



System Reliability Performance Measures

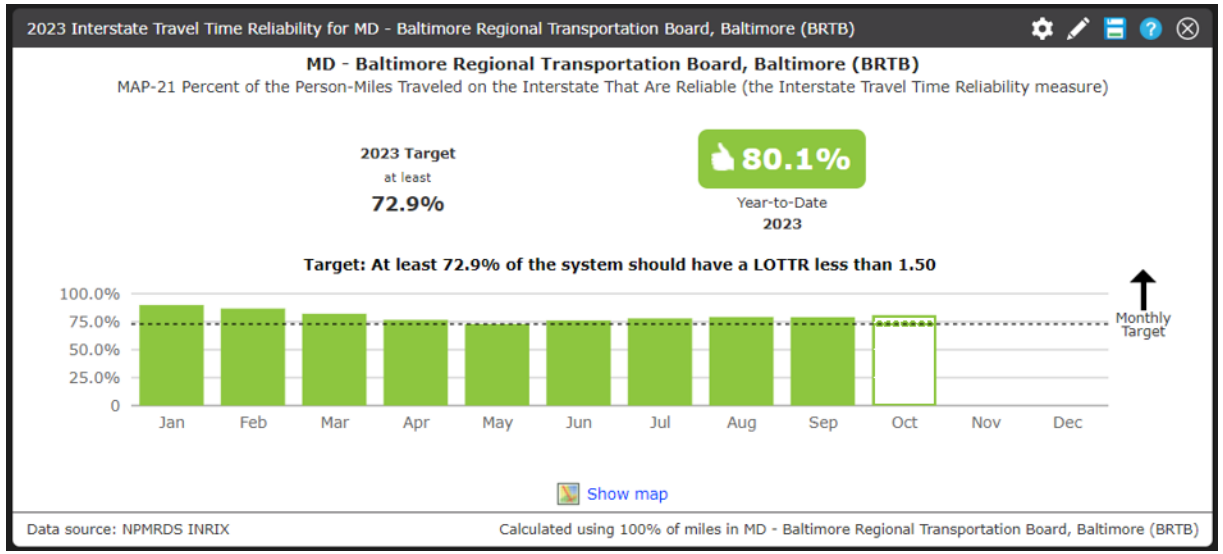
- Percent of reliable person-miles traveled on the Interstate
- Percent of reliable person-miles traveled on the Non-Interstate NHS
- Percentage of Interstate system mileage providing for reliable truck travel time (Truck Travel Time Reliability Index)

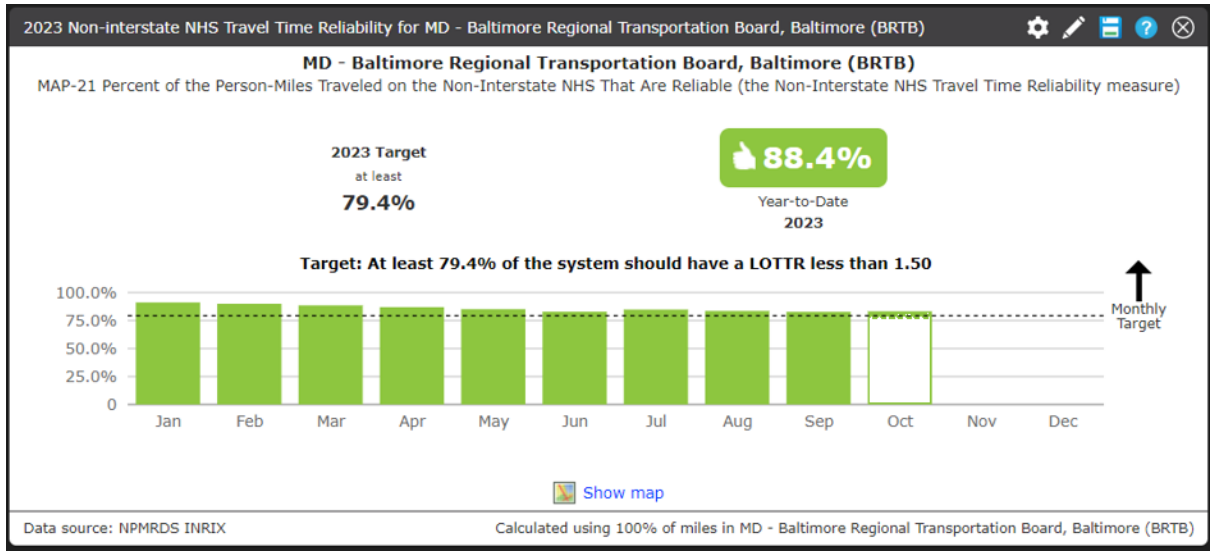
Each state must establish statewide targets and report findings to the Federal Highway Administration. Metropolitan Planning Organizations must either support the established state targets or develop regional targets of their own.

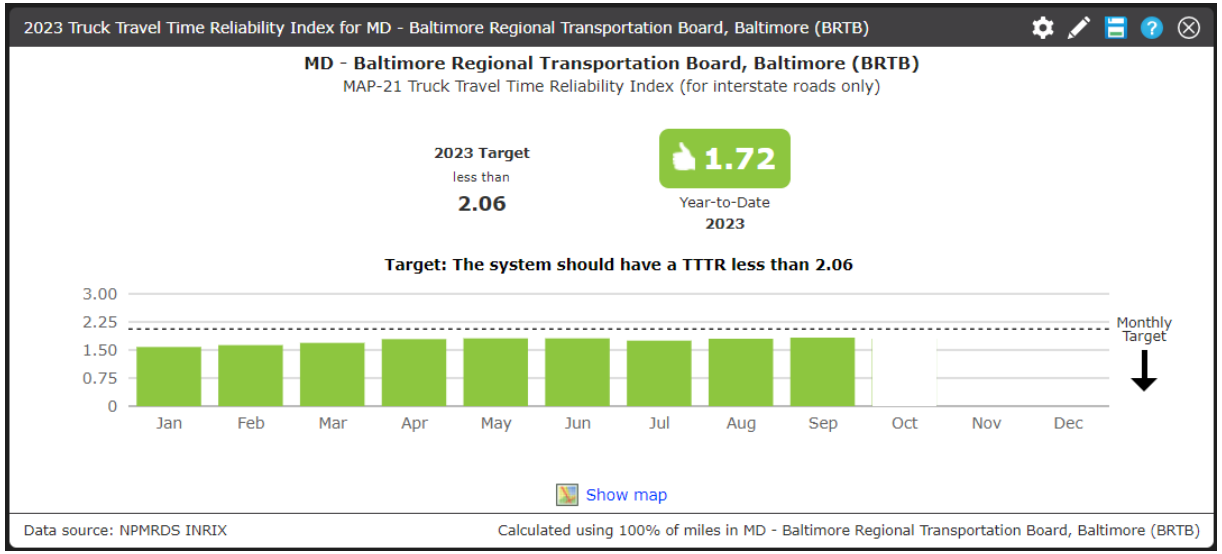


Level of Travel Time Reliability Interstates, Non-Interstates and Trucks

(Travel time reliability is the consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day)







Ranked Bottleneck Comparison

- Widget available in the dashboard (ends with current month)
- For end of quarter and annual comparison, use Bottleneck tool to:
  - create Top 20 for each of the 12 months, plus,
  - Current Quarter or Annual Average

Ranked Bottleneck Comparison

2023 - 2024											Current Month	
Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Location
8	11	14	-	-	4	18	5	-	-	9	1	I-95 N @ MD-32/EXIT 38
2	-	4	3	1	1	-	1	-	4	5	2	MD-295 S @ MD-198
-	6	12	16	15	-	-	18	6	20	2	3	I-695 CW @ I-83/MD-25/EXIT 23
14	2	11	1	-	3	5	-	2	2	4	4	I-95 N @ MD-100/EXIT 43
4	4	1	4	2	-	3	7	-	1	1	5	I-95 N @ MD-152/EXIT 74
13	10	15	18	19	10	15	6	16	12	14	6	I-695 CCW @ PROVIDENCE RD/EXIT 28
-	-	-	-	-	-	-	-	-	-	-	7	I-695 CW @ MD-45/YORK RD/EXIT 26
3	5	8	7	8	-	4	4	7	9	15	8	I-695 CW @ MD-372/WILKENS AVE/EXIT 12
-	-	-	-	-	-	-	-	-	-	19	9	I-695 CW @ MD-144/FREDERICK RD/EXIT 13
19	-	-	-	13	18	-	15	9	11	13	10	I-83 S @ I-695
10	-	19	12	14	8	17	20	8	8	7	11	I-95 S @ MD-175/EXIT 41
6	15	-	-	-	-	-	-	18	16	10	12	I-695 CW @ SECURITY BLVD/EXIT 17
-	-	-	-	-	-	-	-	-	-	-	13	I-70 E @ I-695/EXIT 91
-	16	13	15	-	14	-	-	17	19	11	14	MD-295 N @ MD-175
-	-	-	-	-	-	-	10	19	14	-	15	I-695 CCW @ I-795/EXIT 19
16	8	5	8	7	11	13	-	-	5	8	16	US-50 E @ WILLIAM PRESTON LANE BRIDGE
-	-	16	-	-	12	-	-	-	-	18	17	I-95 S @ MD-43/WHITEMARSH BLVD/EXIT 67
-	-	-	-	-	-	-	-	14	-	12	18	I-695 CW @ PROVIDENCE RD/EXIT 28
-	-	-	-	-	-	-	-	-	-	-	19	I-97 S @ US-50/US-301
-	-	-	-	-	-	-	-	-	-	-	20	US-50 E @ OCEANIC DR/EXIT 32

Ranking 1 2 3

ata source: INRIX — Updated Jan 22, 2024 8:16 AM (21s ag

Ranked Bottleneck Monthly Comparison

			2022-2023											
Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**July**	**Aug**	**Sep**	**Q3 Rank**	**Q3 Locations**
1		2		5	3	2	5			1		1	I-95 S @ MD-24/EXIT 77
3	4	5	2	2		4	3	1	1		1	2	MD-295 S @ MD-198
	20		12					5	2	2	11	3	US-50 W @ BAY BRIDGE
6		7	3	3	5	8	7	8		4	4	4	I-695 IL @ MD-372/WILKENS AVE/EXIT 12
	16			8	11	14			4	18	5	5	I-95 N @ MD-32/EXIT 38
10	7	9		11	13	9	10	6	6	12	13	6	I-95 S @ MD-216/EXIT 35
	12						20	3	5	6		7	I-95 N @ MD-543/EXIT 80
						6	6	4	7	7		8	I-695 IL @ EDMONDSON AVE/EXIT 14
		19	6	13	10	15	18	19	10	15	6	9	I-695 OL @ PROVIDENCE RD/EXIT 28
11		12		20	18		17				2	10	I-695 OL @ I-70/EXIT 16
	15	13	15	12			9		9	10	19	11	I-895 N @ HARBOR TUNNEL THWY (NORTH)
17	14	14	17	10		19	12	14	8	17	20	12	I-95 S @ MD-175/EXIT 41
15				7	12	18		17	20	14		13	I-695 OL @ I-83/MD-25/EXIT 23
	18								19	20	8	14	I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29
											3	15	I-695 IL @ STEVENSON RD/EXIT 21
2	1	1	4	1	1	3	2	11		16	12	16	I-695 OL @ MD-26/EXIT 18
		20	9	17	14	17	11		17	19	17	17	MD-295 N @ CANINE RD
		16	20		16	13	15		14			18	MD-295 N @ MD-175
18	9	11	18	19				13	18			19	I-83 S @ I-695
										8	14	20	I-95 S @ MD-32/EXIT 38

Inner Loop (IL)
Outer Loop (OL)

Conclusions/Observations: The September-2023 Monthly Average Vehicle Miles Traveled AVMT is down compared to September 2022 by -2.1%. The cumulative Year to Date change through September 2023 AMVT is up compared to last year 2022 by 2%. The number #1 bottleneck in the Baltimore region was I-95 S at Exit 77/MD-24 although it missed the Top 20 in July and September, its severity in August based on Total Delay values secured the top spot. This is primarily due to ongoing construction of the I-95 Express Toll Lanes (ETL) extension in Harford County in Bel Air.

Top 10 Bottleneck Reports Link

https://www.baltometro.org/transportation/data-maps/congestion-analysis-report

In order to track the most congested roadway segments in the region, BMC prepares a Quarterly Congestion Analysis Report that identifies the top 10 bottleneck locations. While many of these locations are the same throughout the year, we do find some variability, and we provide a description of the causes of the bottlenecks.

Congestion Analysis Reports aid the Congestion Management Process

Latest Reports:

2023

Congestion Analysis Report - Quarter 3
Congestion Analysis Report - Quarter 2
Congestion Analysis Report - Quarter 1

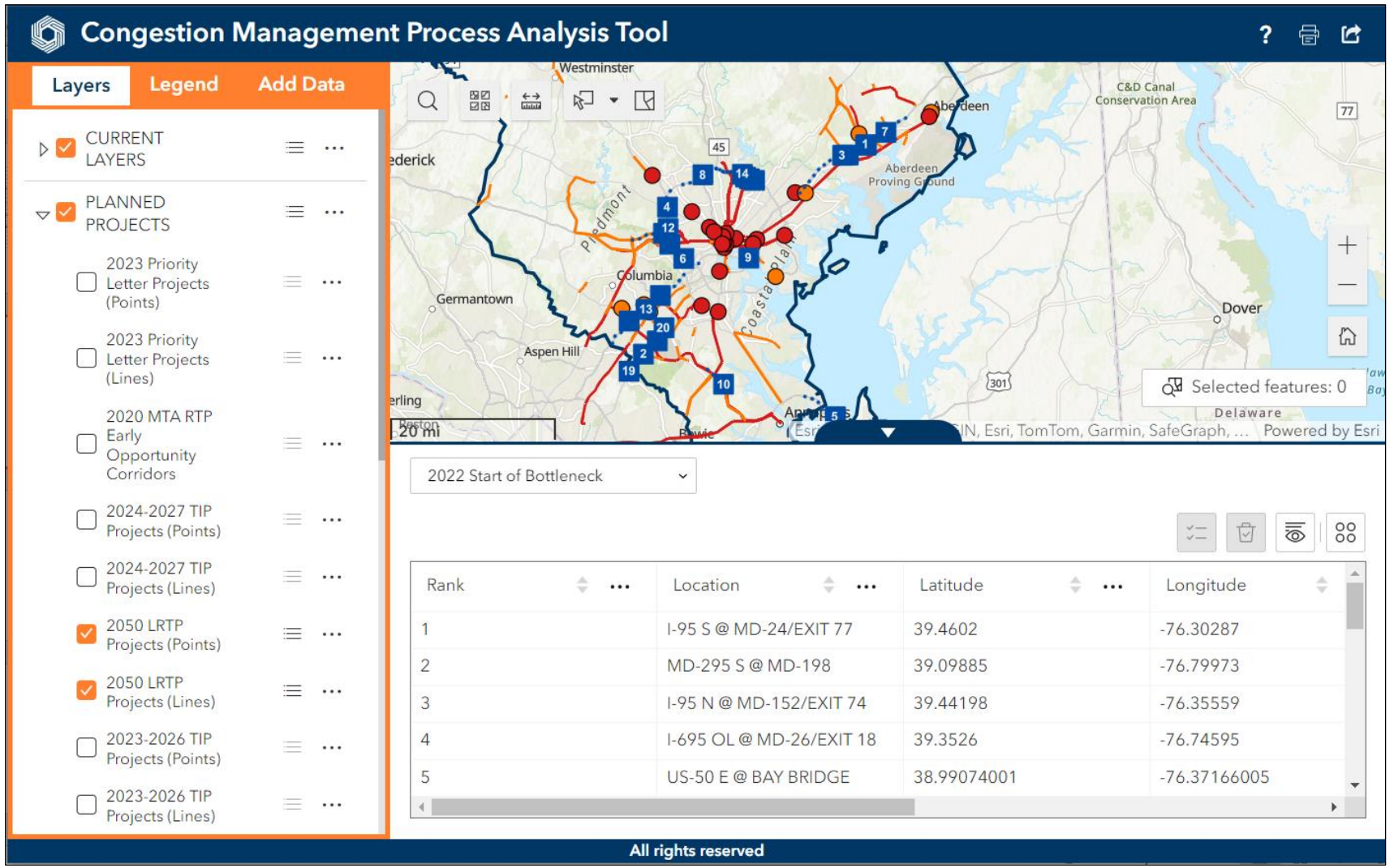
2022

Congestion Analysis Report - Quarter 4
Congestion Analysis Report - Quarter 3
Congestion Analysis Report - Quarter 2
Congestion Analysis Report - Quarter 1

New! Online CMP Analysis Tool

- Developed out of the Quarterly Congestion Analysis Report
- ArcGIS Experience Builder/ ArcGIS Online
- Allows overlay viewing of performance measure layers and bottleneck locations with Long Range Plan and Transportation Improvement Projects

https://experience.arcgis.com/experience/f9473095b9564bcaa357688cc59c943f



Benefits of using RITIS Tools & Templates

- "Ability to provide better reporting and turnaround time overcoming staffing limitations using RITIS tools and templates."
- "Better visualizations than the previous reports we used to do. More compact with more meaning."
- "RITIS templates allow plug and play with data for recurring reports without having to set things up each time."
- "Better able to assist local jurisdictions with their questions concerning their projects." US-40 Corridor Report – Harford County
- "Helped promote RITIS tools within member agencies." Anne Arundel County DPW/Traffic Engineering – Training class

Future uses: Holiday Travel Forecast, Corridor Performance Reports

For More Information

Ed Stylc
Transportation Analyst
(410) 732-0500 x1031
estylc@baltometro.org
www.baltometro.org

RITIS | PROBE DATA ANALYTICS SUITE

New RITIS & PDA Suite Updates and Demonstrations

Michael Pack
UMD CATT Lab
Director

RITIS Enhancements

(New Features Recently Deployed and In Development)

Michael Pack, CATT Lab

50+ Analytics Tools

RITIS

Detector Analytics

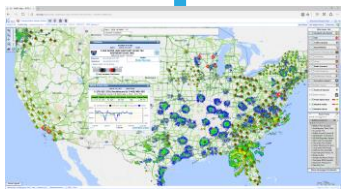
Weigh-in-Motion

Causes of Congestion

IMELINE

Incident Visualizations

ATMS Event Archive Analytics & Safety Analytics



Maps, Traveler Info, Transit, CCTV, Alerts, APIs, & Reporting Templates

Work Zone Dashboard

Work Zone Perf. Measures

PROBE DATA ANALYTICS SUITE

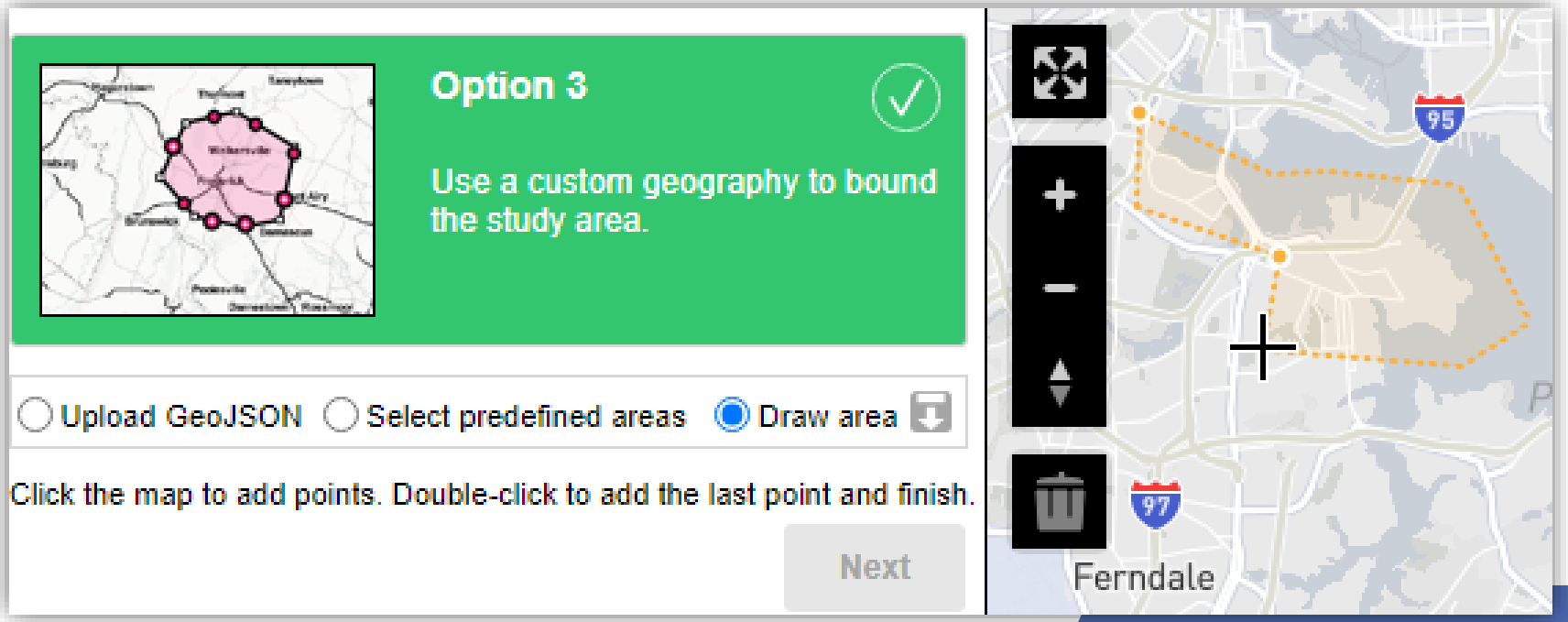
SIGNAL ANALYTICS

Trip Analytics

Trip Analytics
(New & In Development)

Shape Drawing & Editing

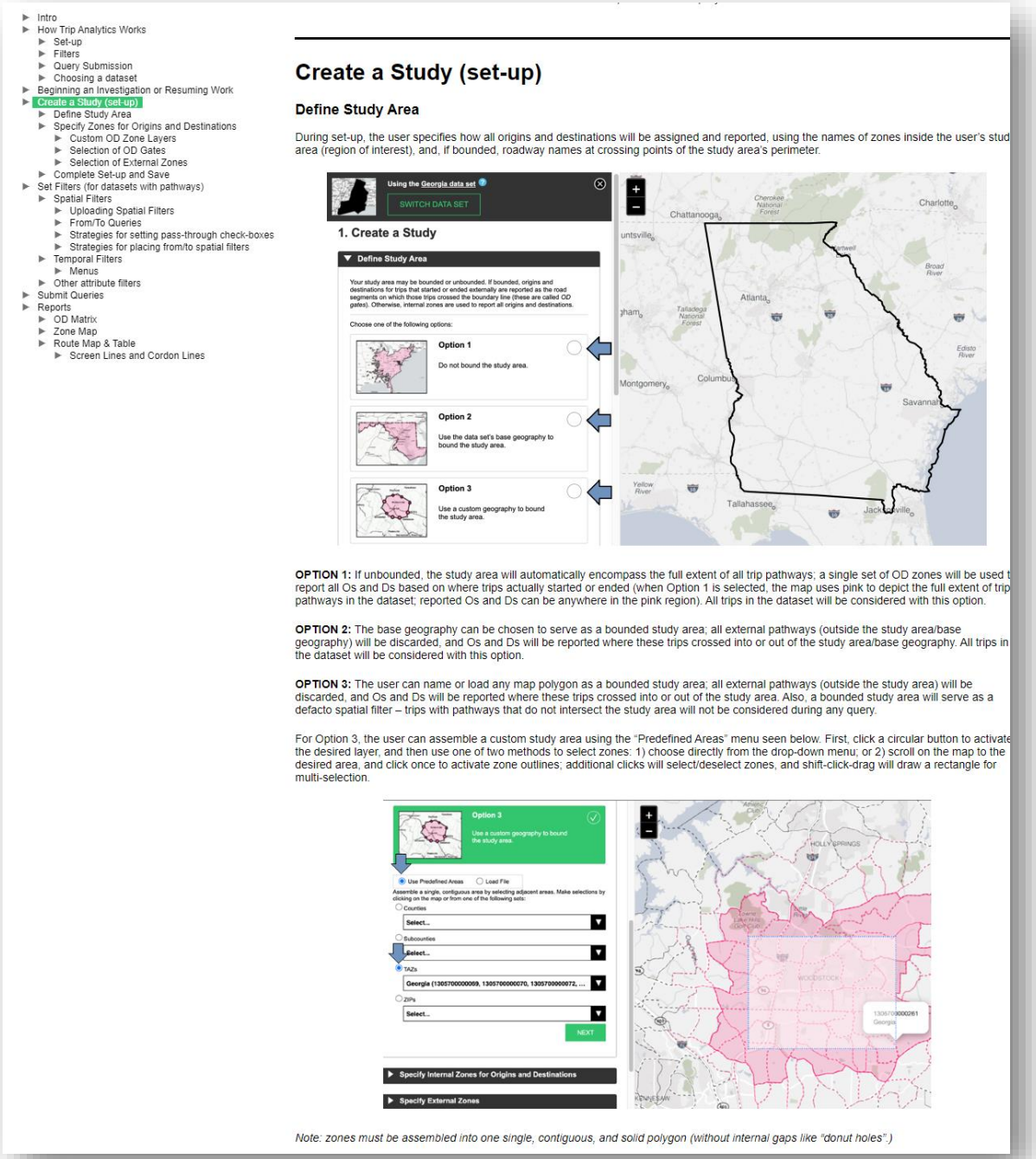
- made it easier to draw shapes for the study area and spatial filters, and **drawn shapes can now be edited**. If a shape is already on the map, clicking it will put you in edit mode, where you can move or modify the shape. Users can also start over by clicking the trash can button. If the shape hasn't yet been drawn, you'll immediately start in drawing mode. https://trips.ritis.org/new



In-Progress

- Mapping improvements
- Back-end architectural improvements for speed

- Need help? support@ritis.org
- https://trips.ritis.org/help
- Need Training? gjordan1@umd.edu

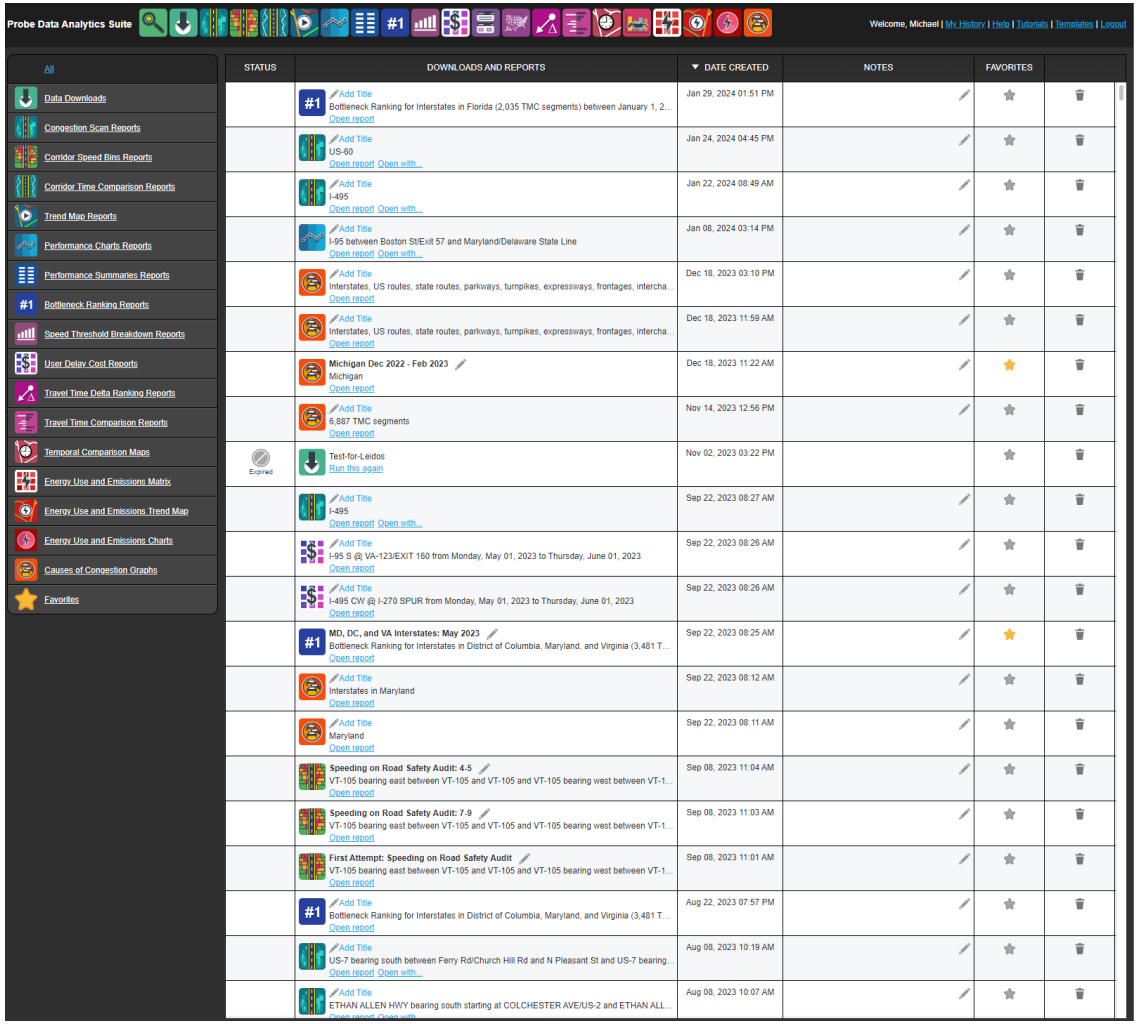


Probe Data Analytics

(New & In Development)

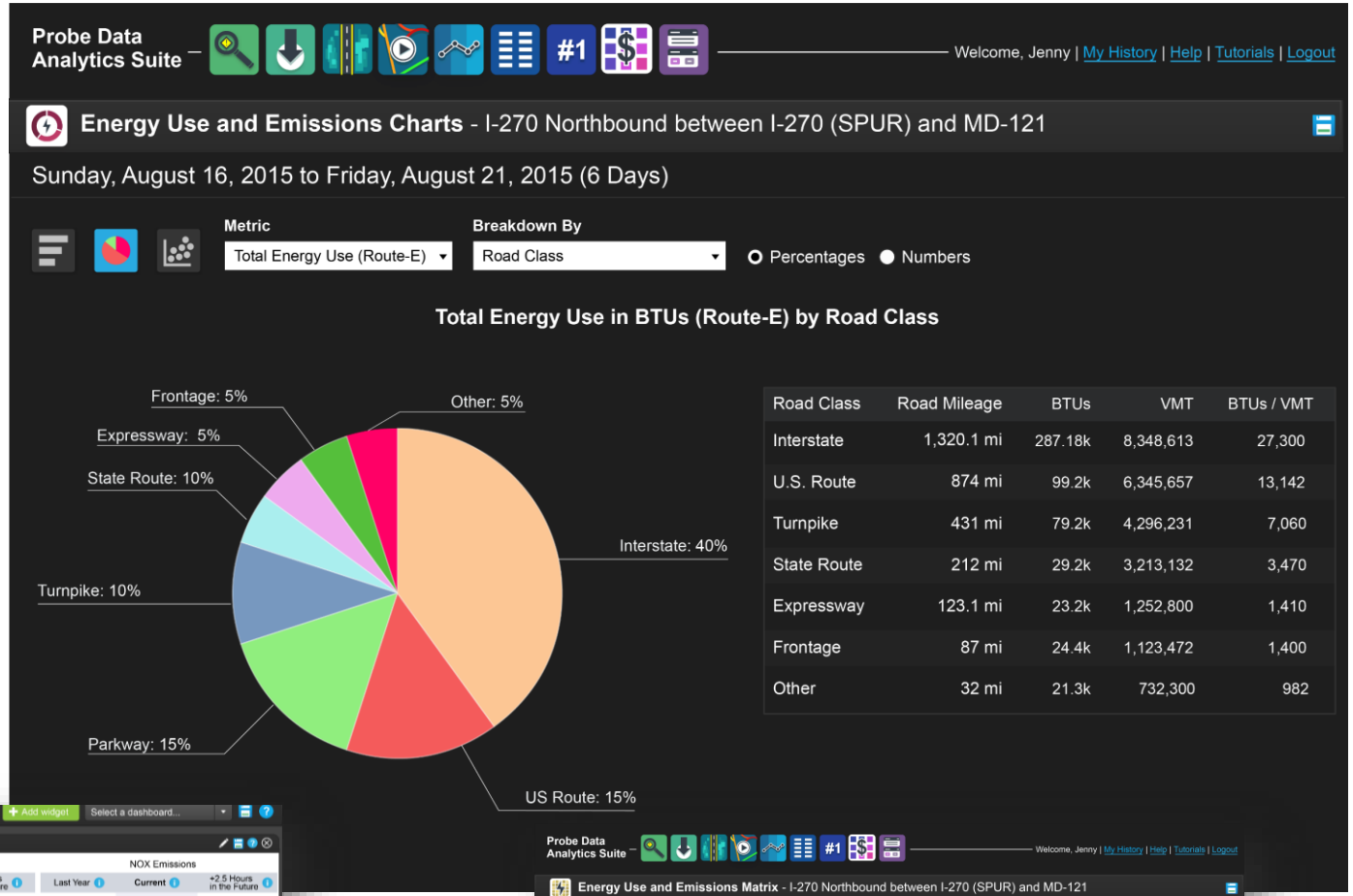
Recent Deployments

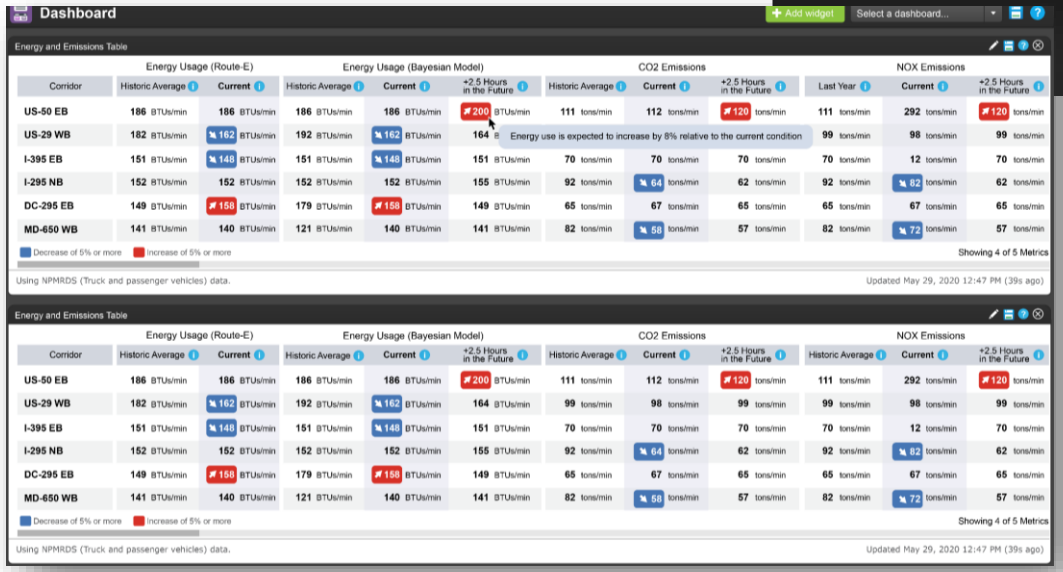
- UDC modernization
- My History load times
- Faster load-times for frequently used data/queries
- Stability Improvements
- Other small UI and performance upgrades as seen at https://pda.ritis.org/suite/updates/

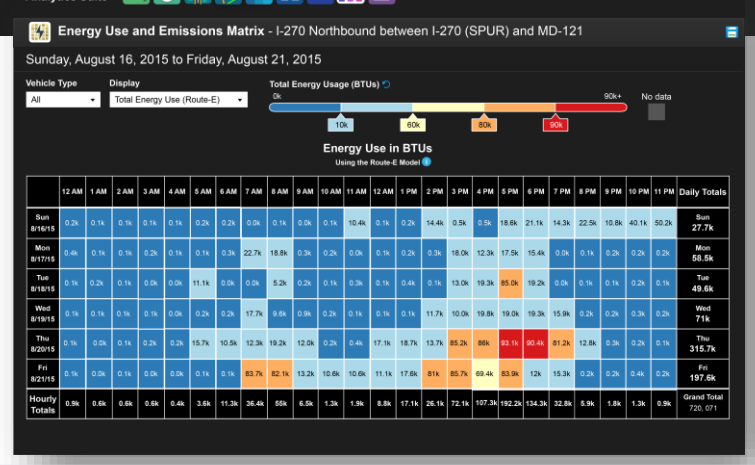


In-progress

- “Places” search
- Weather backend research
- Emissions & Energy Consumption Models
- Evaluation & Estimation of Working Group Enhancements



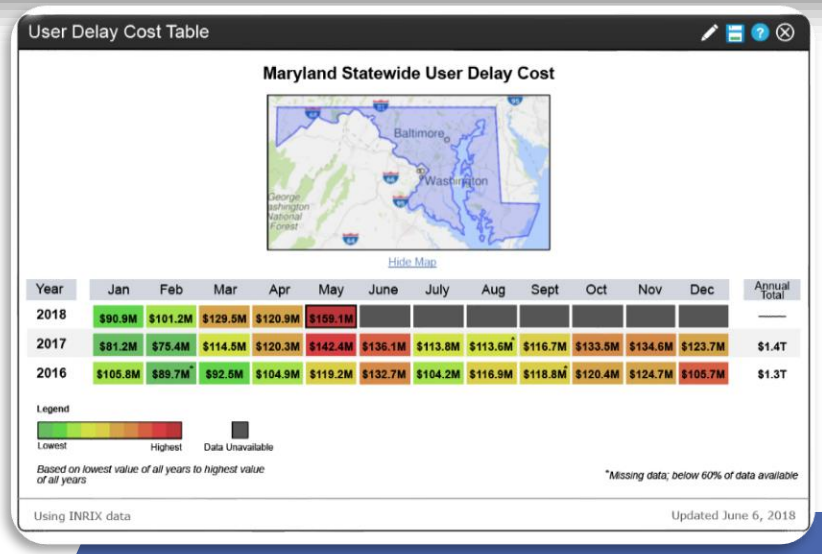




In-progress: UDC Algorithm Updates

Limits of the UDC Algorithm Today

- Volumes aren't updated by agencies frequently (at least, not in the format we can use)
- Volume profiles are used (because that's all that is available)
- With volume profiles, we must "limit" volumes during certain congested conditions.
- We need to have an understanding of the number of lanes on the road to understand impacts of congestion. This is not readily available today.
- Passenger vehicle occupancy is unchangeable.



UDC Upgrades in Process

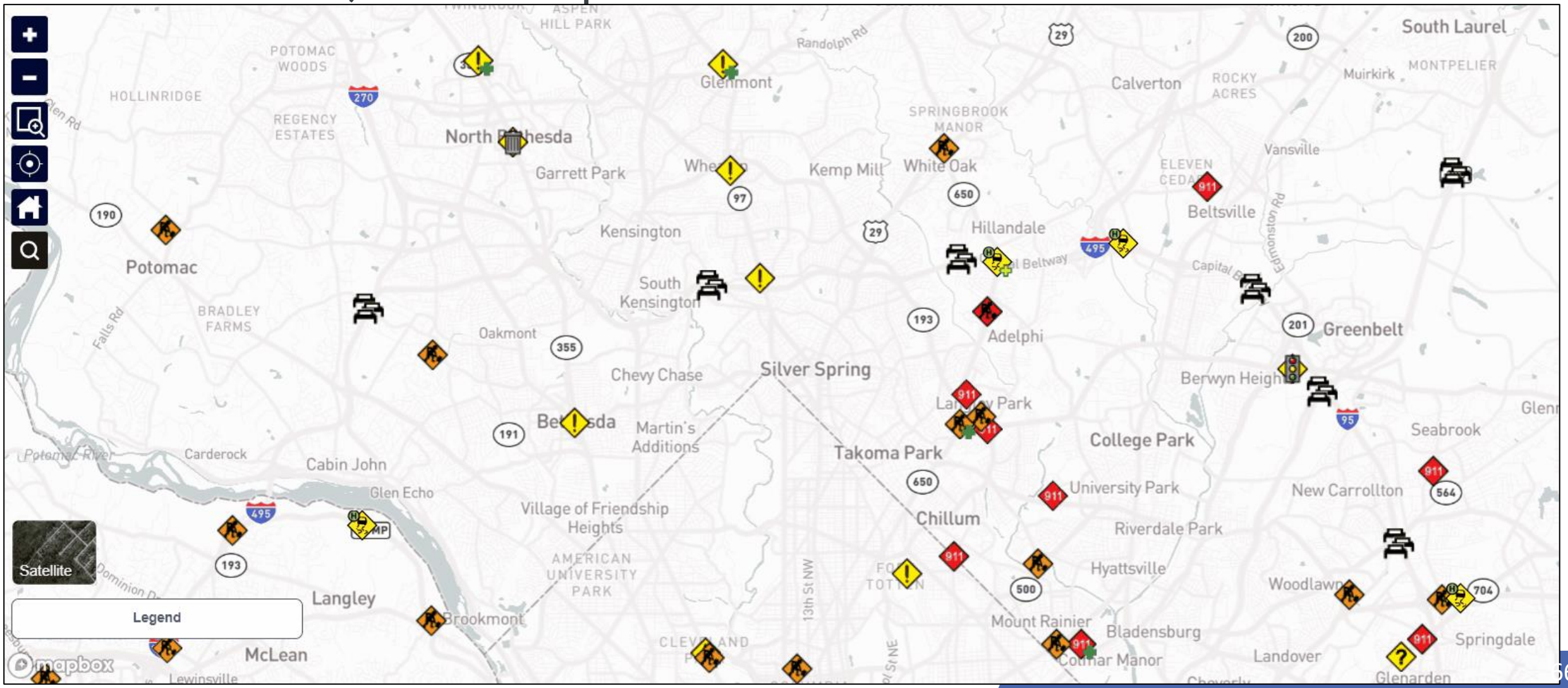
- Significant improvement to volume-limiting equations
- Updated # of lanes from OSM conflation
- Added ability for users to change passenger vehicle occupancy (default = 1.7)
- Result of these improvements is an increase in UDC seen on Interstates and larger roadways

Other RITIS

(New & In Development)

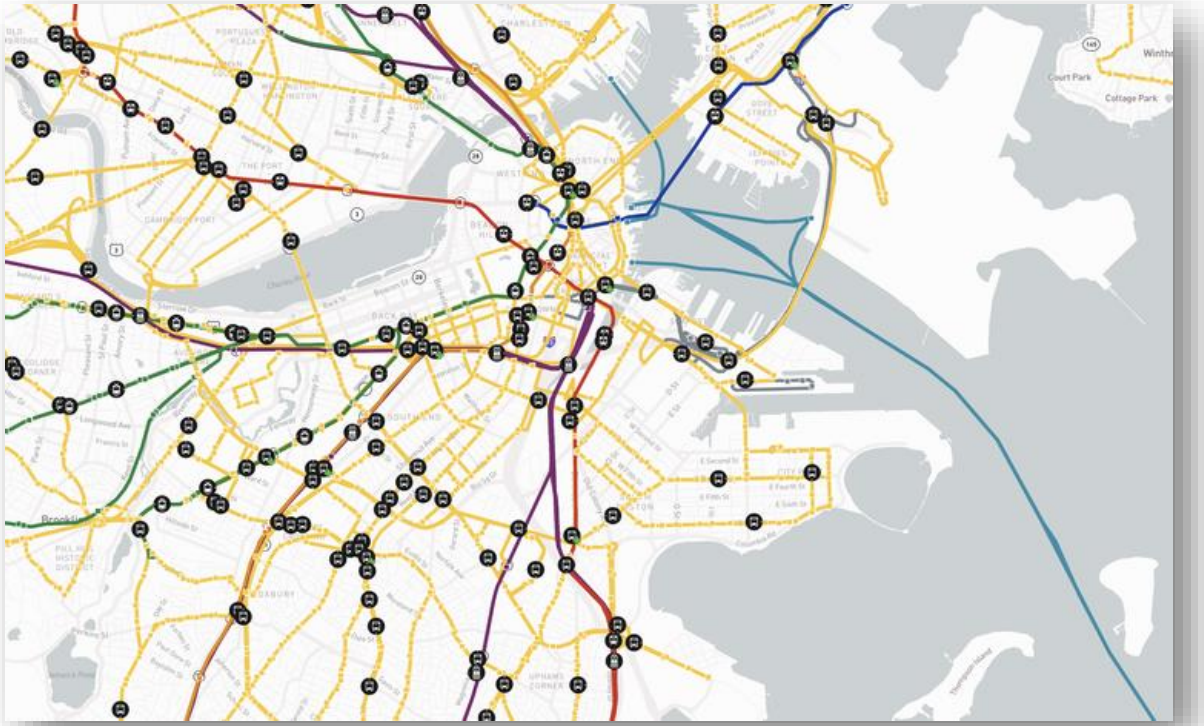
New Features

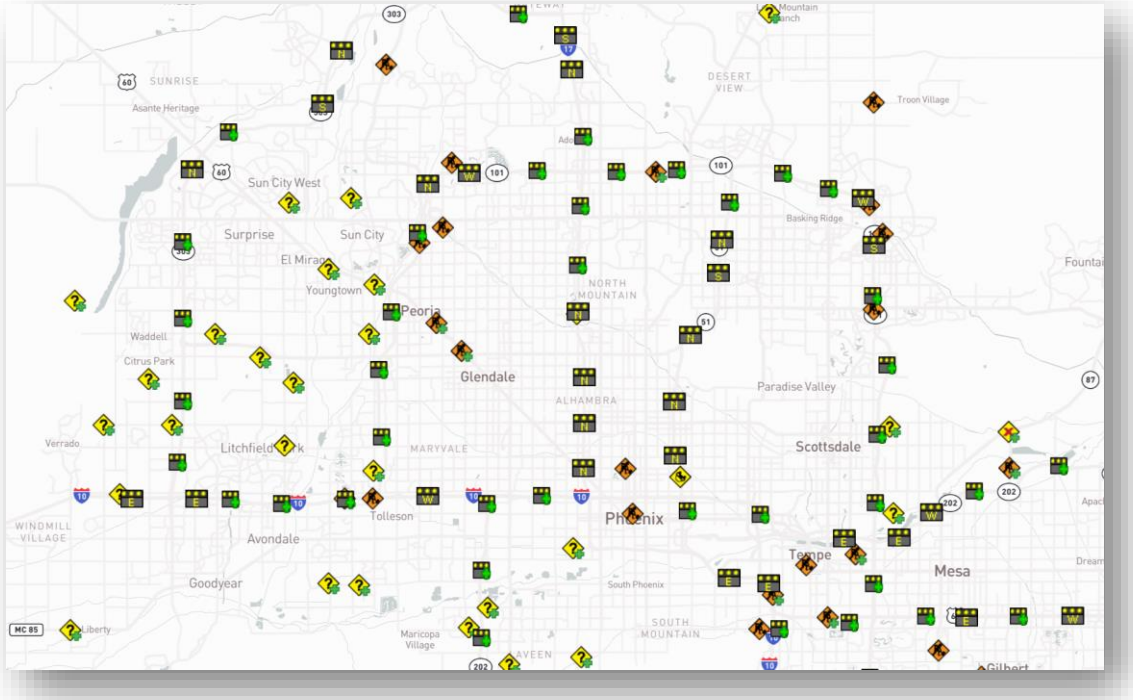
- **Experimental Search & Zoom:** for addresses, businesses, roads, intersections, and other points of interest



Bug Fixes & Minor Improvements

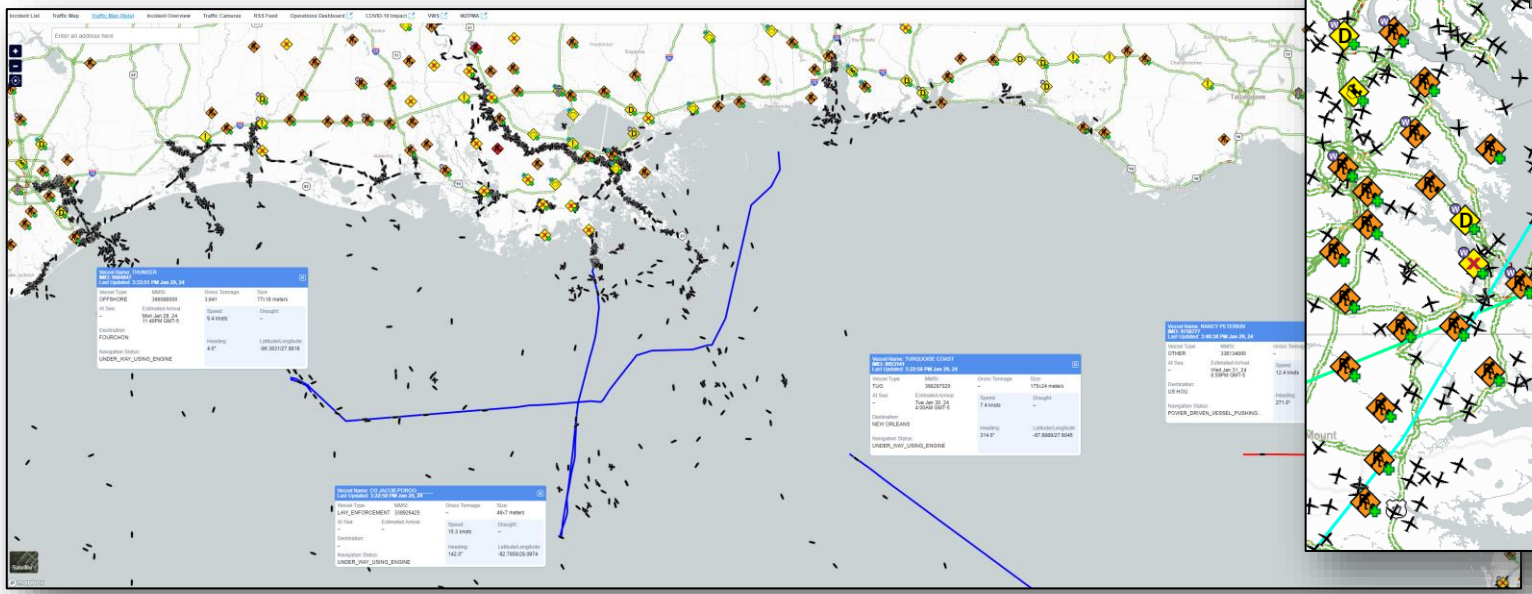
- https://www.ritis.org/release_notes?show=10
- New data feeds for agencies (including transit)
- Dozens of small performance improvements, stability items, security patches, and bug fixes.

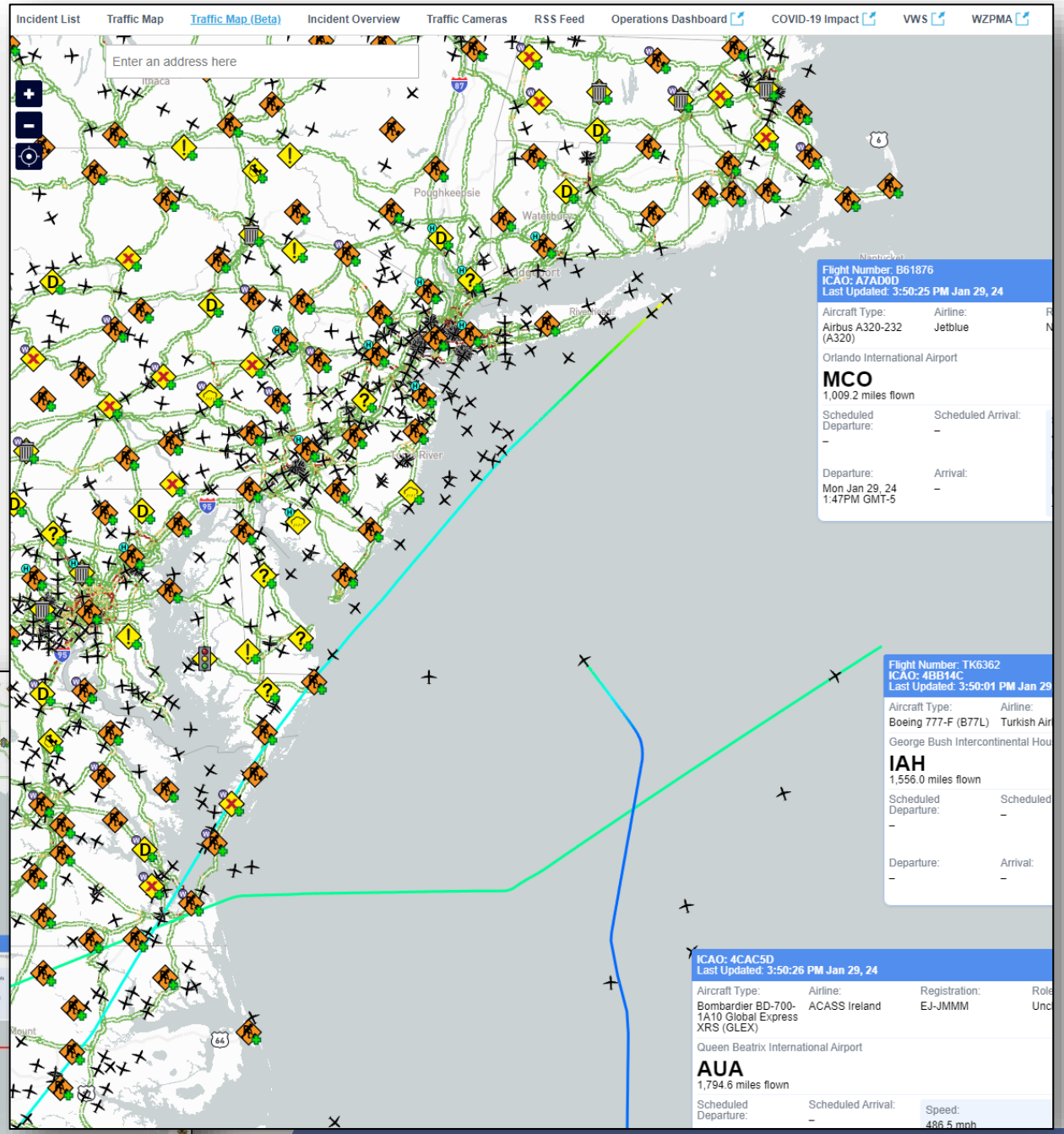




In progress

- Transit filtering and search capabilities
- Vector mapping for animations, performance, scalability, and usability
- Safety Data Integration into EQT
- Maritime & Flight data integration





RITIS | Probe Data Analytics suite

RITIS Product Enhancement Working Group Update & Future Enhancements

Bob Frey
Director of Project-Oriented Planning
Massachusetts DOT
RITIS Product Enhancement Working Group Chair

Enhancements Working Group Purpose and Goal

- Form and maintain a nimble “pooled fund” like group to:
  - Fund RITIS Enhancements
  - Assist with prioritization efforts for the CATT Lab
- Provide stable, annualized funding
- Connect agencies with similar needs

Confirmation of Agencies Providing Funds

- Georgia DOT
- Massachusetts DOT
- Oregon DOT
- Virginia DOT
- Michigan DOT (maybe)
- Nevada DOT (maybe)
- Tennessee (maybe)
- Silent Donor (Agency)

Confirming with agencies.
Always need more!

Reminder of what we accomplished last year.

RITIS Enhancement Working Group Funds supporting:

Enhancement	Estimated Cost	
Aerial Photography in RITIS Maps	$10k	✓
Additional Reporting Templates	$35k	✓
Speed Tile Layers	$30k	✓
Sharing of Dashboards and Reports	$125k	✓
Automated Work Zone Reports Scoping	$25k	✓
Causes of Congestion Enhancements	$50k	✓
Total =	$275k	

Other funds (grants) are supporting:

Enhancement	Estimated Cost	
Freight Movement & Safety Avoidance Analytics	$1M+	In-development
Safety Analytics (police crash reports) Partially funded	~$250k	In-development
Signal Analytics Enhancements	TBD	✓
Trips Analytics Enhancements	TBD	✓
Energy Analytics Geographic Expansion	TBD	In-development
Speed Bins Visualization (time permitting)	$75k	✓
Map Click Corridor Selection	TBD	✓
Total =	$$$	

Initial Voting / Ranking (Tell us your Top 5)

1. Safety Analytics
2. Map-based Search & Zoom
3. XD API Enhancements
4. XD Bottlenecks
5. Weather in C-Scan
6. Weather in Trend Maps
7. DMS in C-Scans
8. Weather in historic Region Explorer
9. Advanced Time Selection in PDA
10. Custom/Shareable Color Scales
11. Embedding/Publishing of Dashboards
12. Automated WZ Reporting Tool
13. ATSPM Integration with other data
14. PM3/MAP-21 Project Prioritization & Target Setting Support
15. Mirror directions in XD map selection tools
16. Updated/More Video Tutorials
17. Detour Analytics for Work Zones or other disruptions
18. Business use-case handbook
19. Event Duration Prediction
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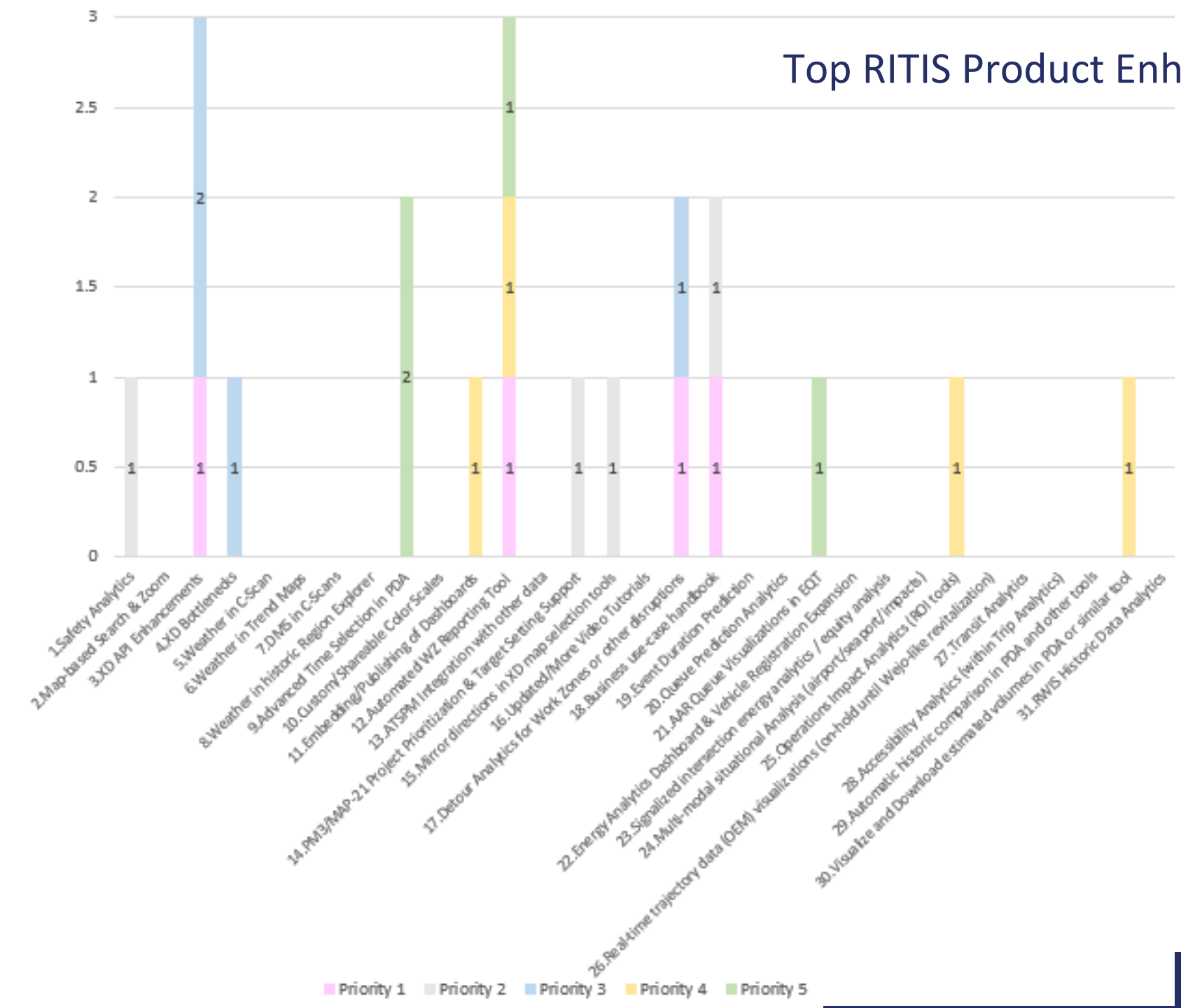
23. Signalized intersection energy analytics / equity analysis
24. Multi-modal situational Analysis (airport/seaport/impacts)
25. Operations Impact Analytics (ROI tools)
26. Real-time trajectory data (OEM) visualizations (on-hold until Wejo-like revitalization)
27. Transit Analytics
28. Accessibility Analytics (within Trip Analytics)
29. Automatic historic comparison in PDA and other tools
30. Visualize and Download estimated volumes in PDA or similar tool
31. RWIS Historic Data Analytics

Top RITIS Product Enhancements (Contributors only)



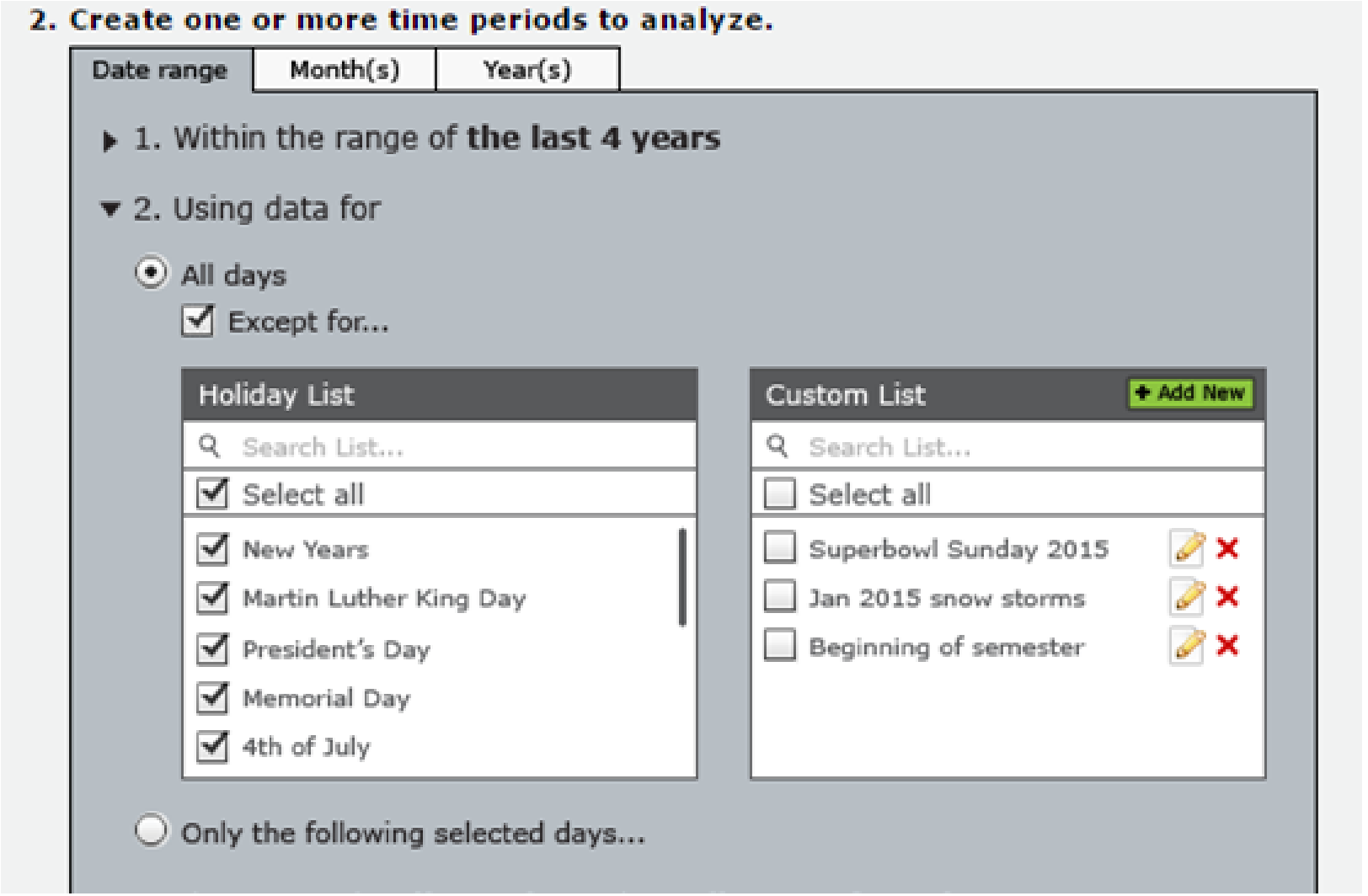
Quick Takes on Preferred Features

3. XD API Enhancements

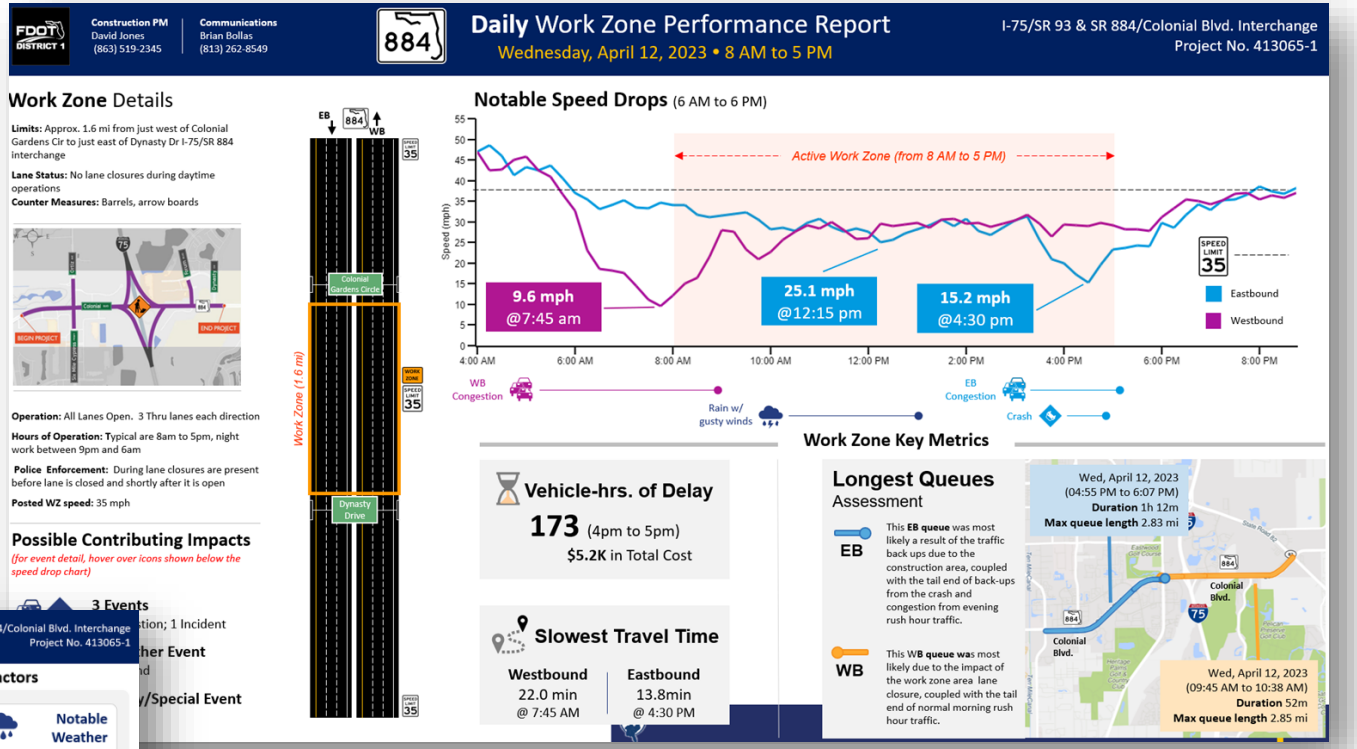
- Adding XD support to road search and analysis endpoints
- Adding Merge-Time PM job (used for Travel Time tools)
- Adding MAP-21 support
- Adding support for dashboard tools

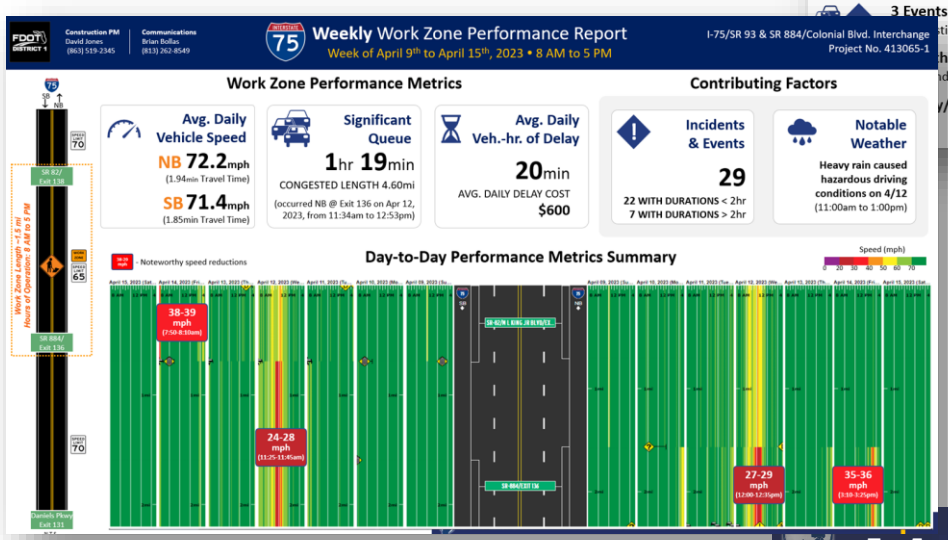
9. Advanced Time Selection in PDA

- Exclude dates (holidays, football games, anomalous events, etc.) from a date range.
- Add these functions to APIs



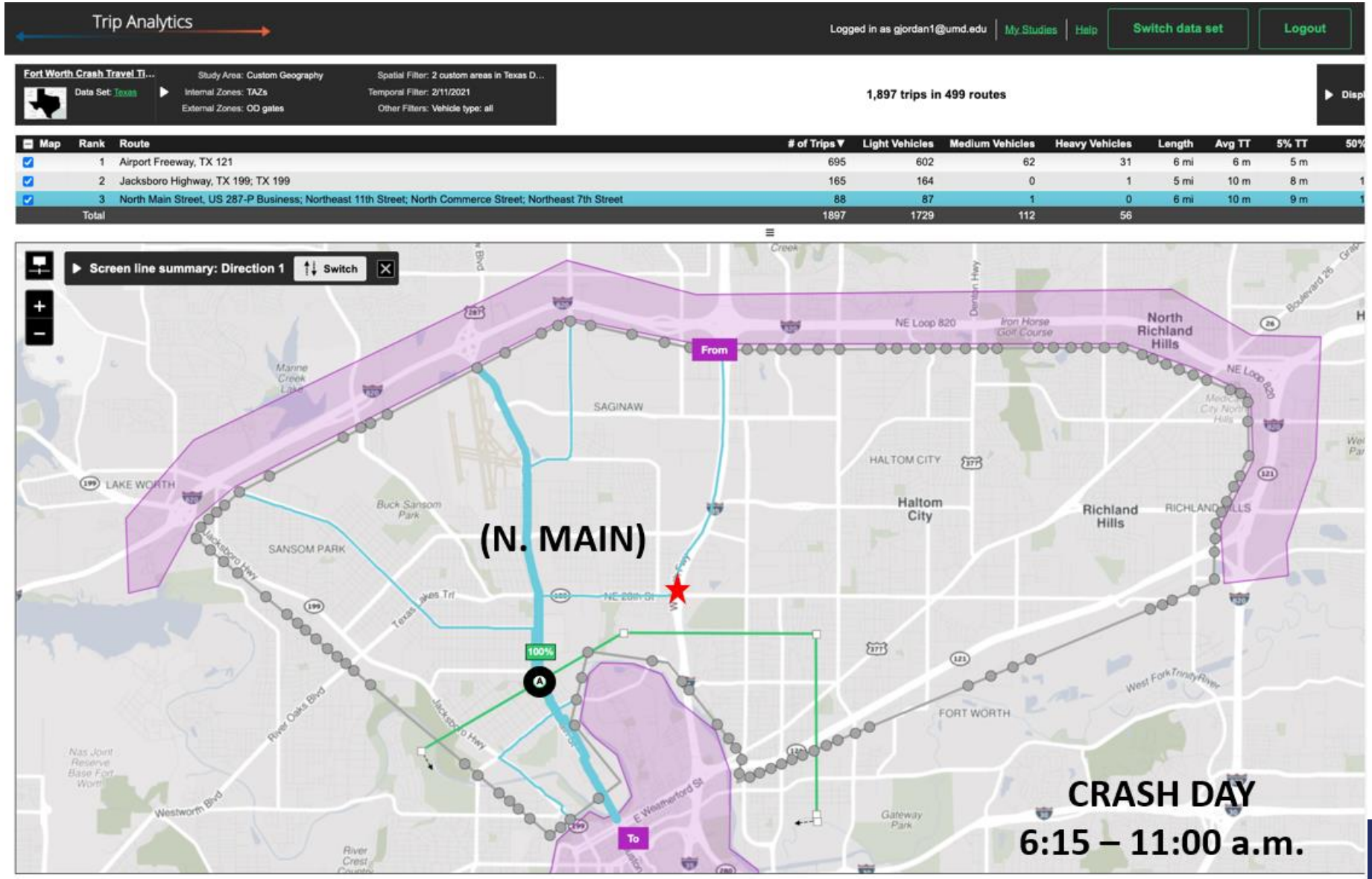
12. Automated WZ Reporting Tool





17. Detour Analytics for Work Zones, weigh stations, weather, incidents, or other disruptions

- Abnormal routing analysis



18. Business use-case handbook

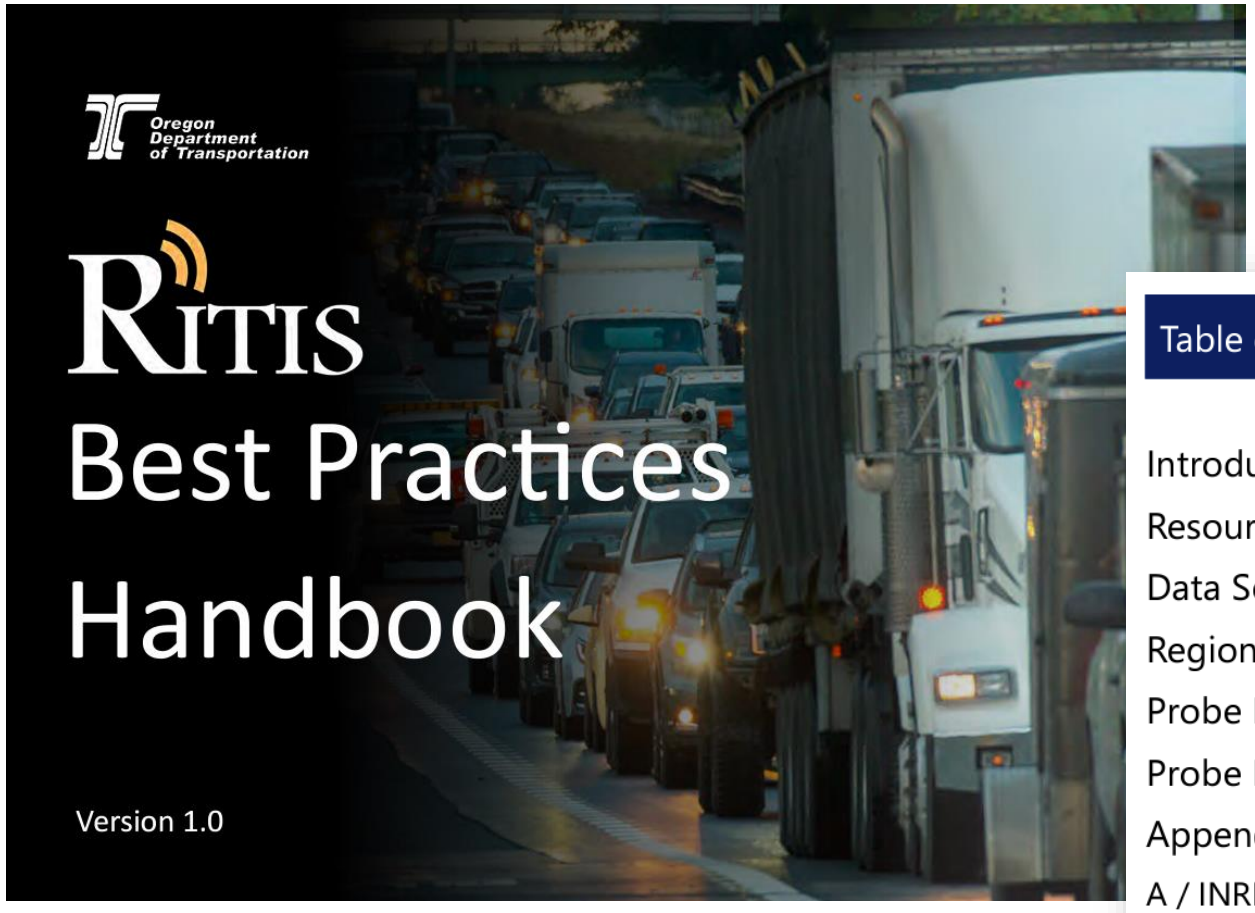


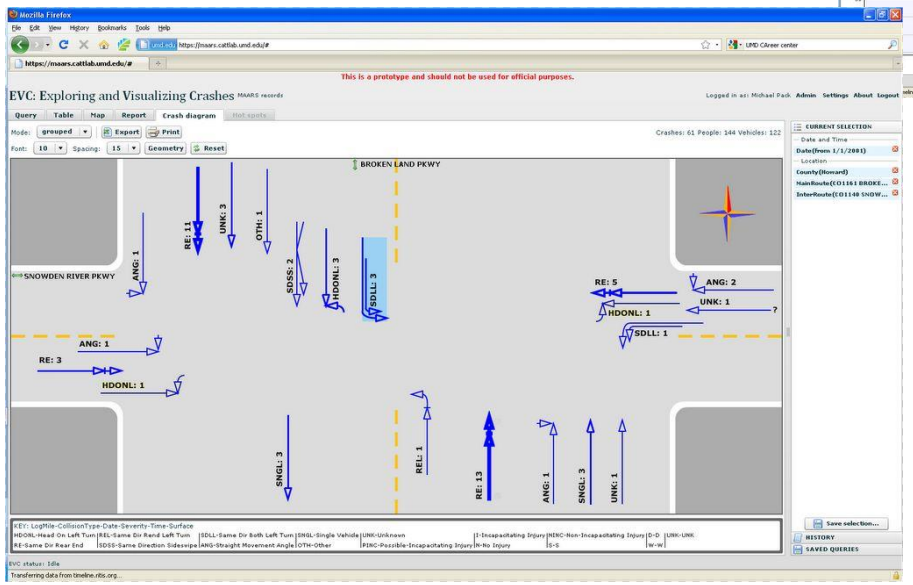
Table of Contents

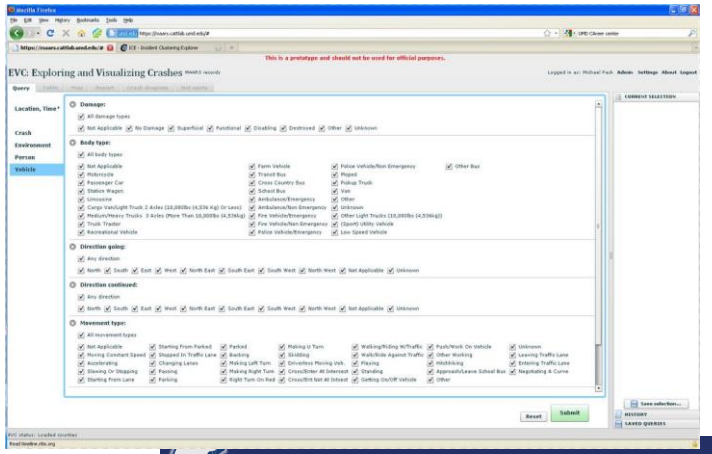
Click on a heading in the table of contents to go to that section. Click on back arrows next to page numbers ◀ to jump back to this table of contents.

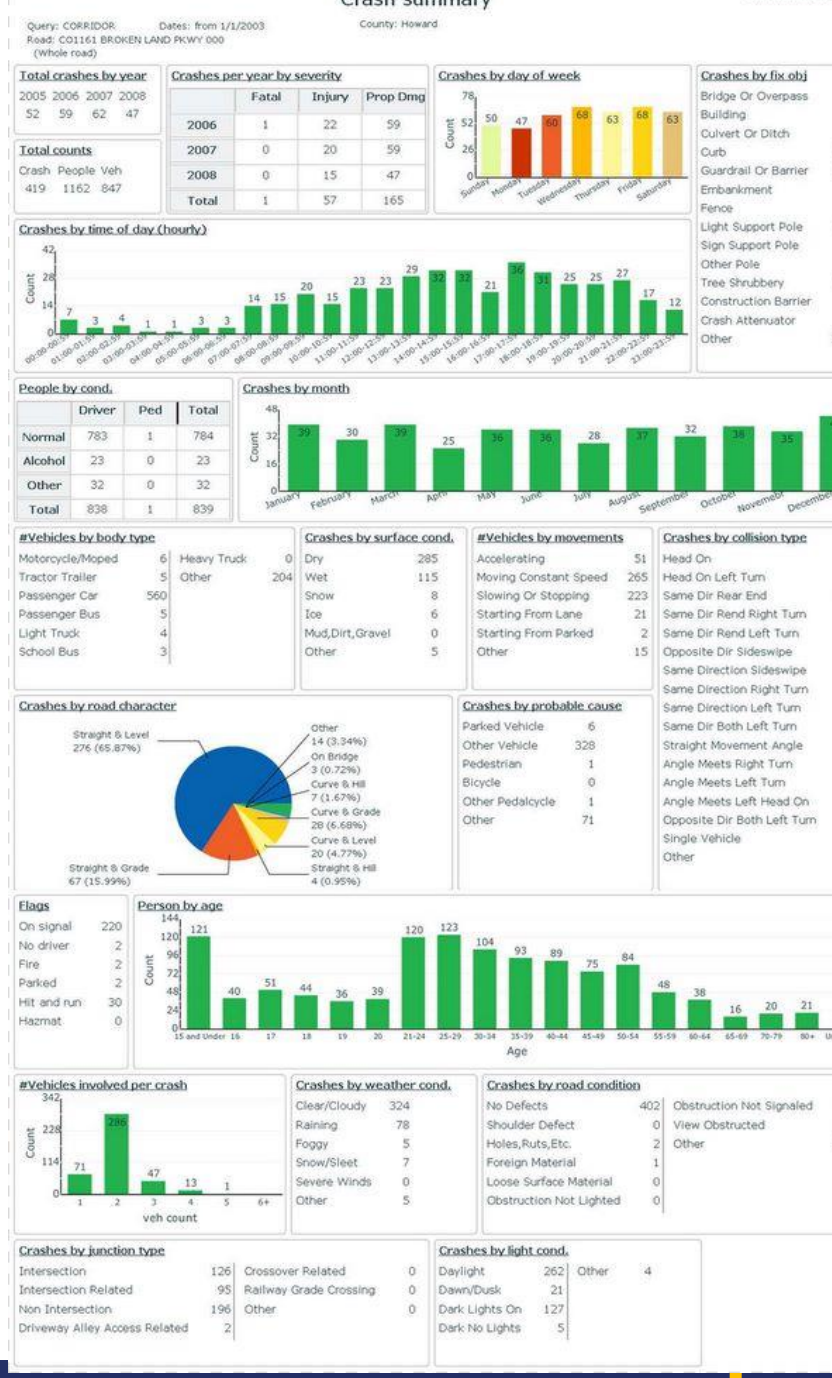
Other Potential Features Receiving Votes

1. Safety Analytics

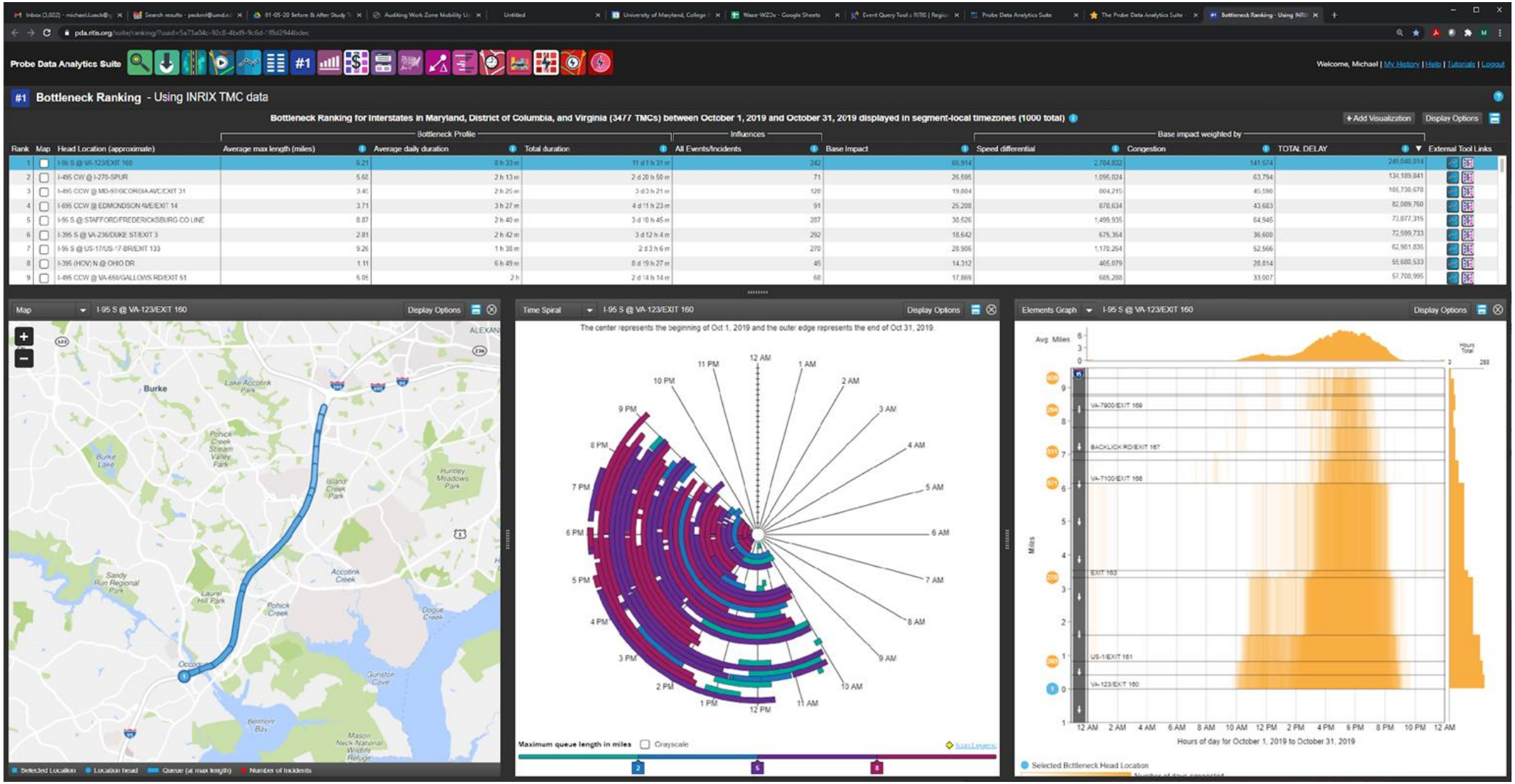
- Extremely detailed query functionality for police crash records
- Crash Diagraming
- Hot Spot Analysis
- Partially funded





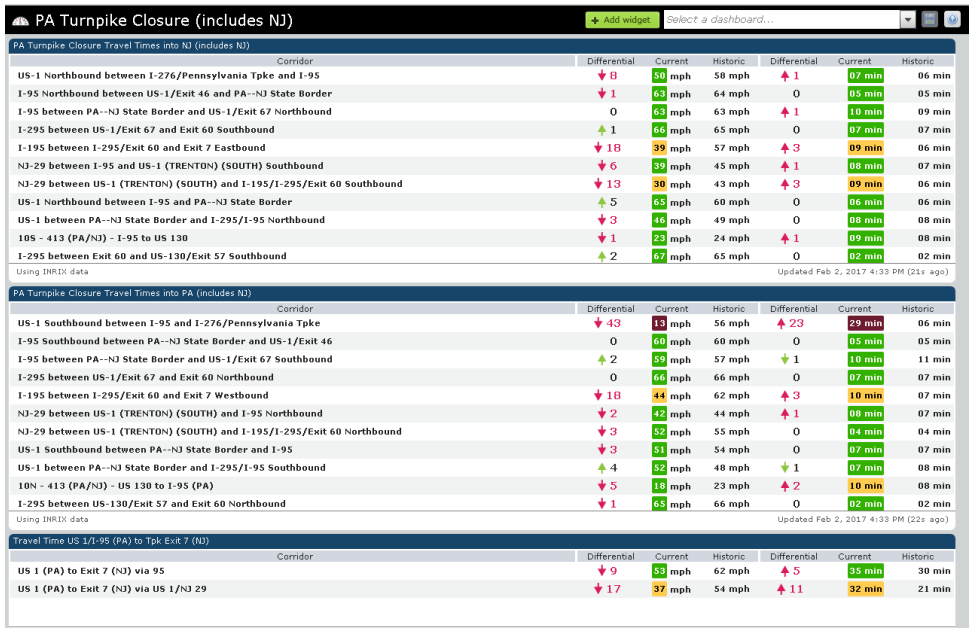


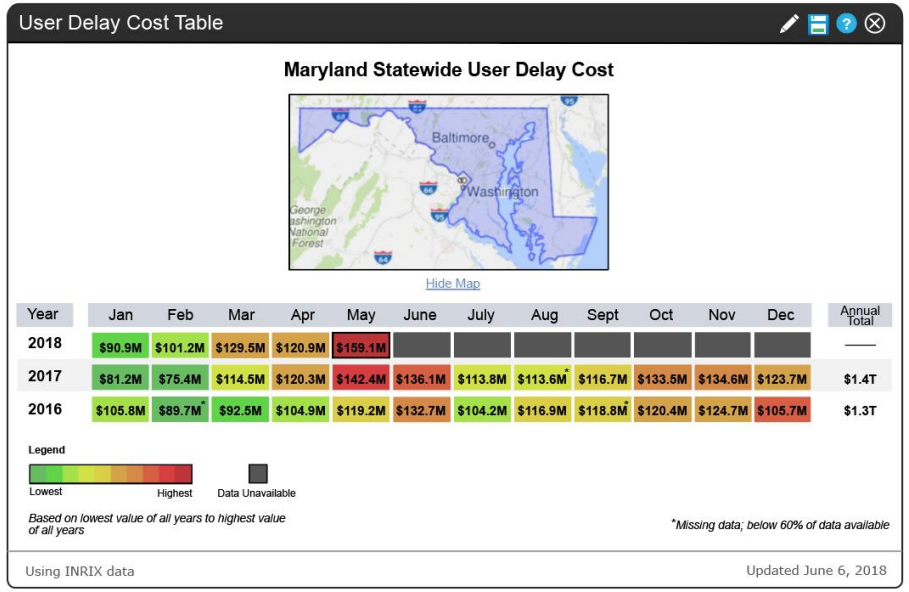
4. XD Bottlenecks

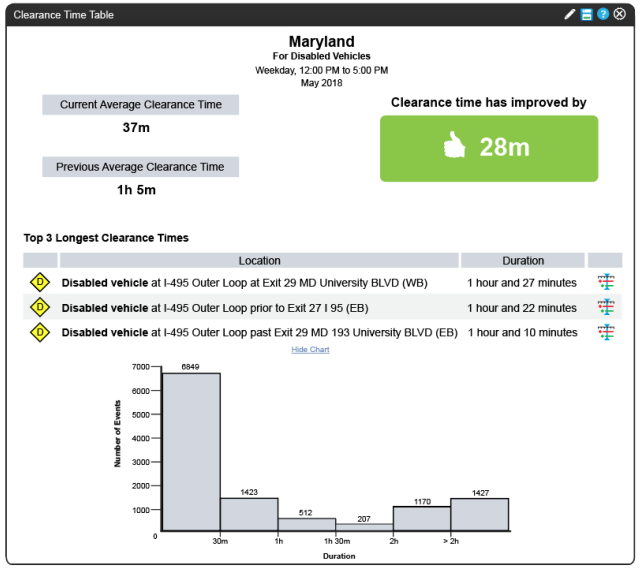


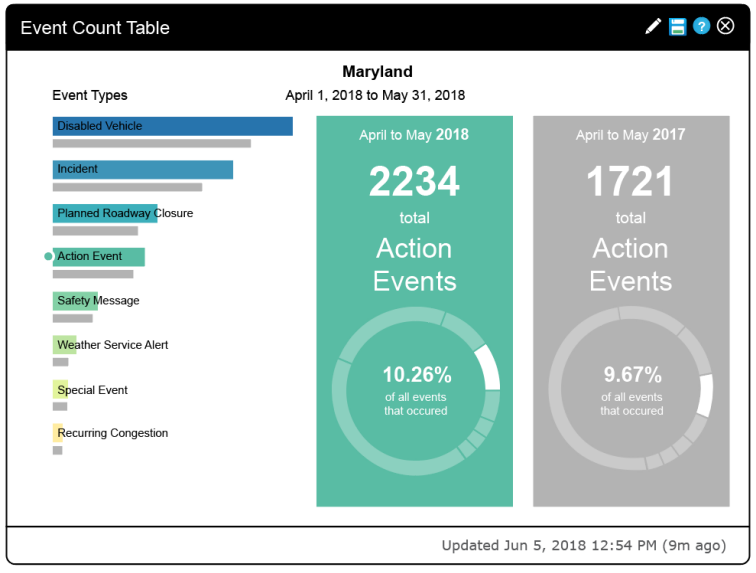
11. Embedding/Publishing of Dashboards

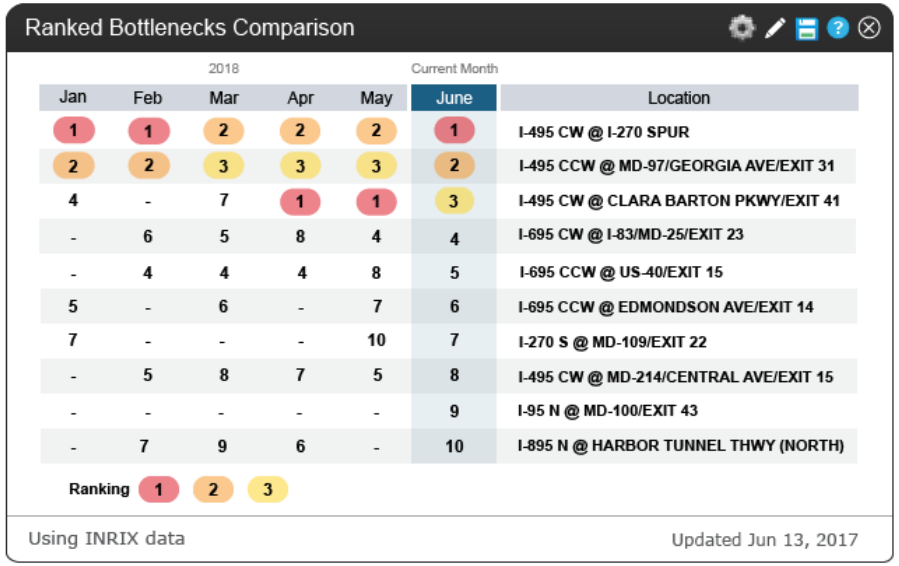
- Publishing tools
- Embedding tools









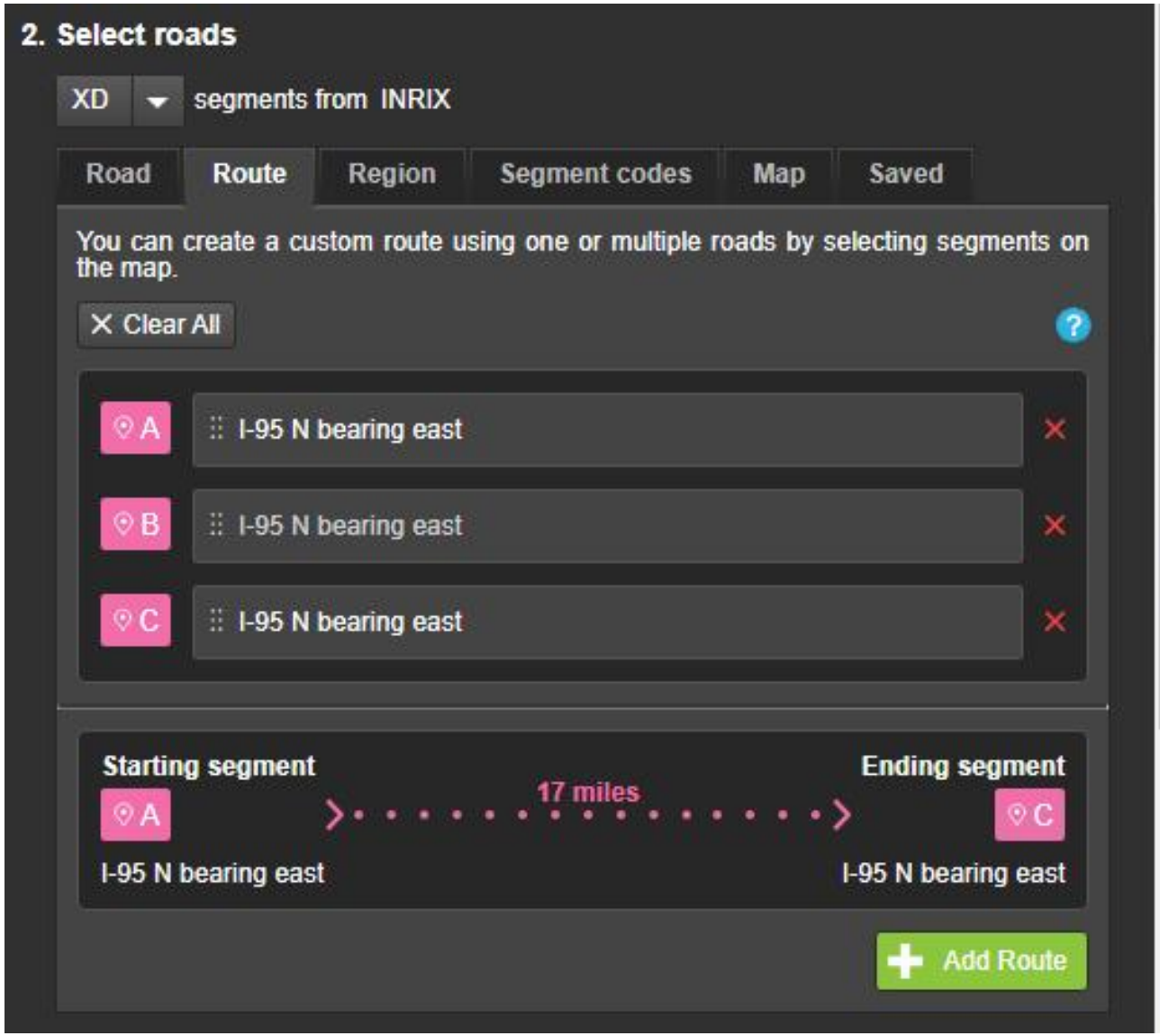


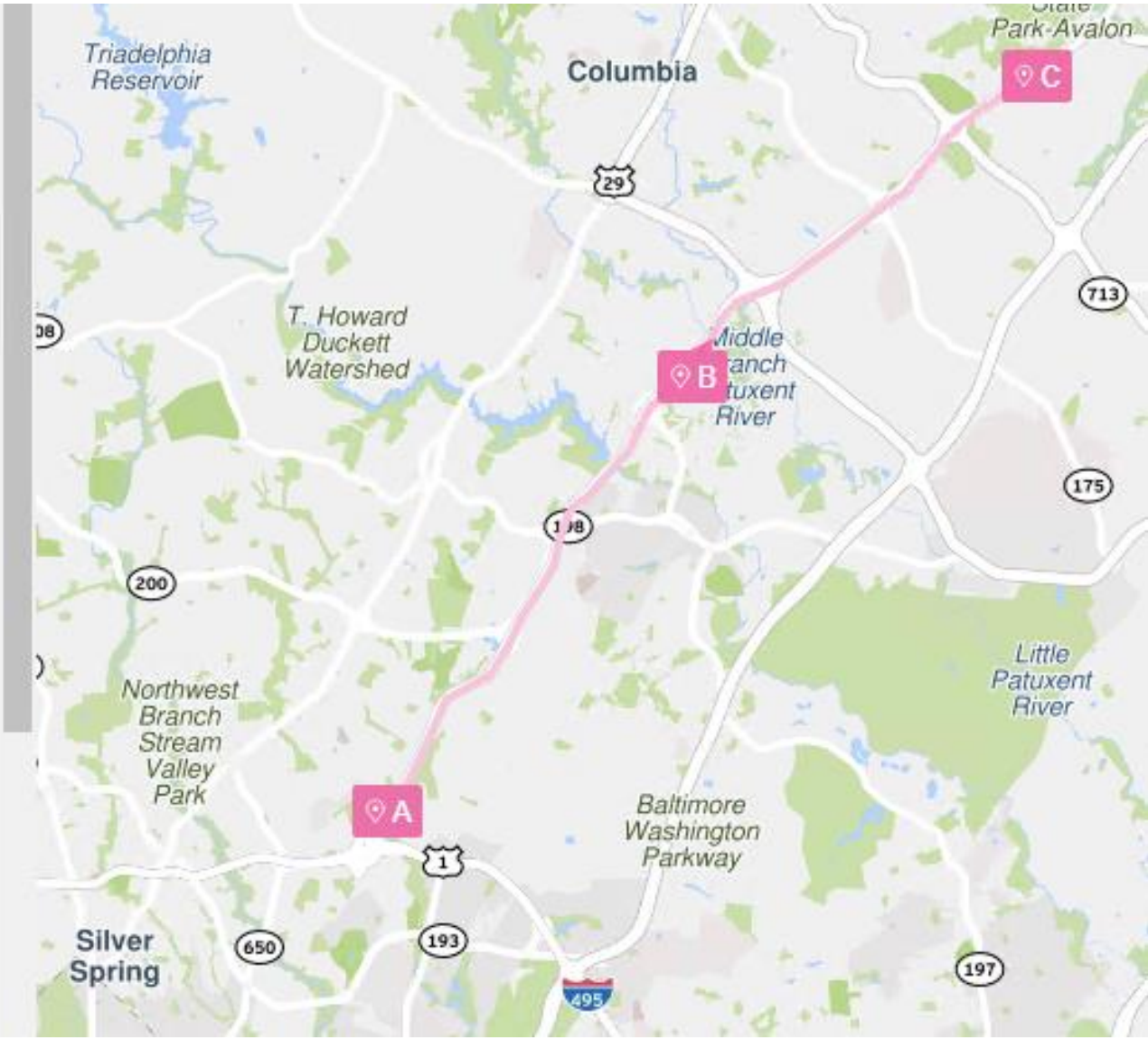
14. PM3/MAP-21 Project Prioritization & Target Setting Support

- The MAP-21 Easy Button shows performance and formats federally mandated reports; however…

- Can it analyze potential impacts of projects?
- Can it analyze your target setting and areas of importance and sensitivity?

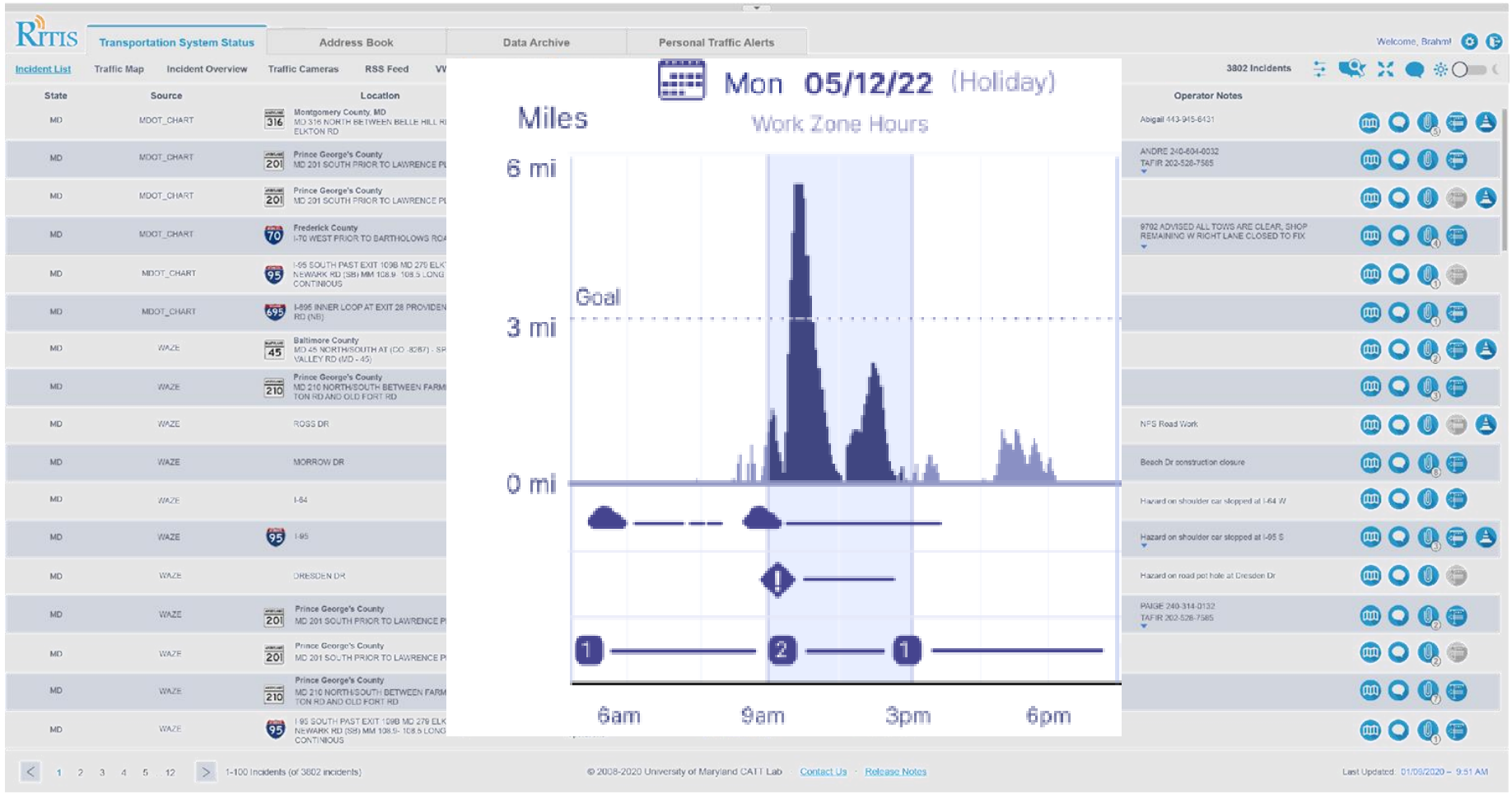
15. Mirror directions in XD map selection tools





21. Real-time and historic Queue Visualizations

- Real-time queue measurement behind incidents
- Historic Queue Analytics in EQT

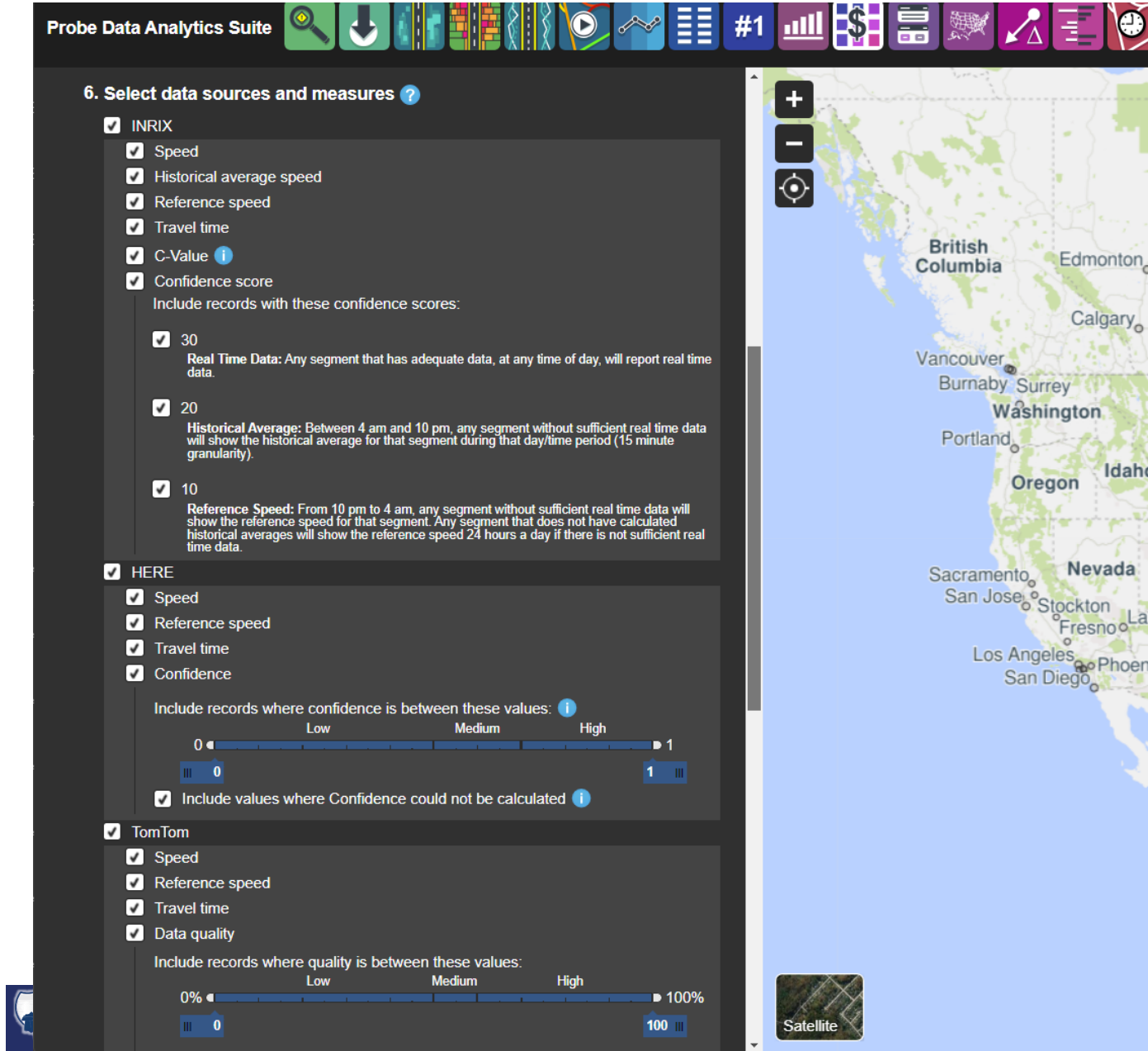


25. Operations Impact Analysis (ROI tools)

- Automatically evaluate UDC for events and estimate cost savings due to operations activities/actions where possible

30. Visualize & Download estimated volumes in PDA or similar tool

- Download Raw Volume Estimates
- Visualize in other tools like:
  - UDC (modified/limited)
  - Performance Charts
  - Other???



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Next Steps

- Review Results
- Put together cost estimates
- Finalize funding availability

Thank you!

CATT LABORATORY

THE EASTERN TRANSPORTATION COALITION

RITIS | PROBE DATA ANALYTICS SUITE

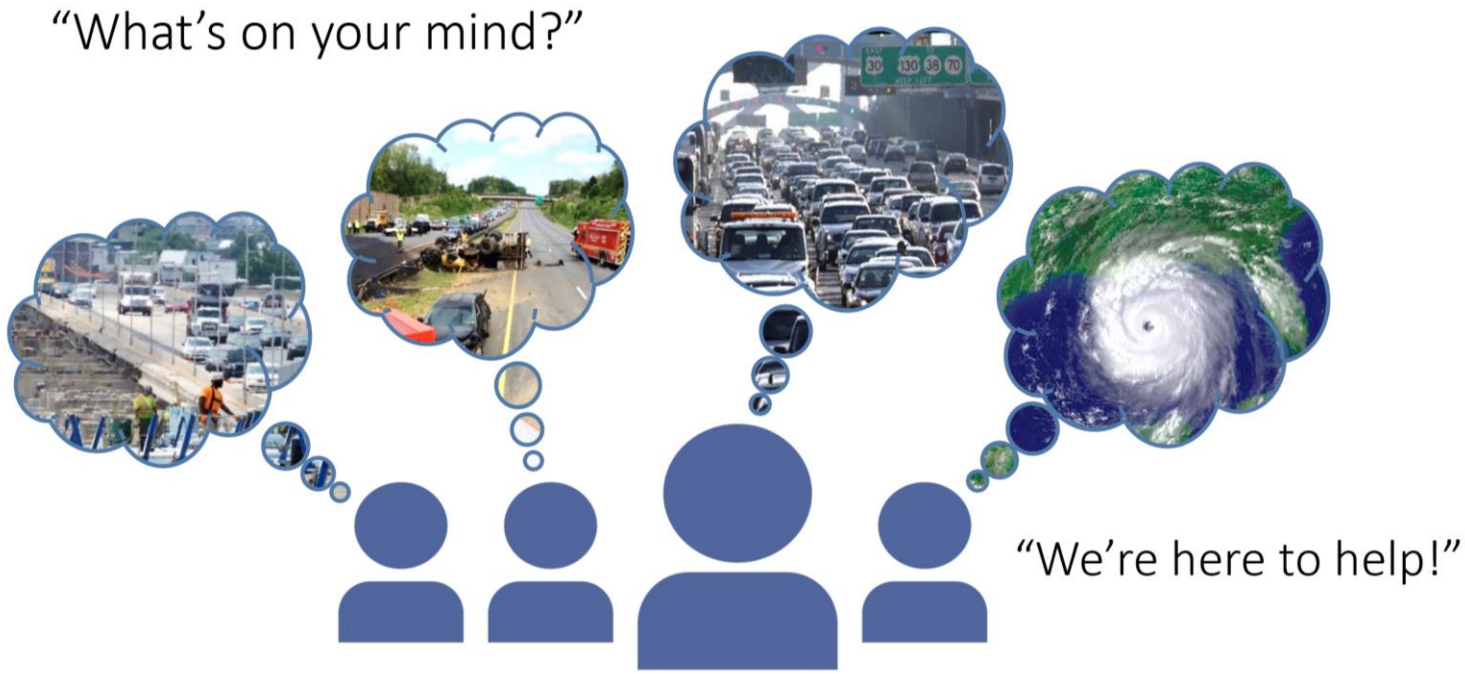
User Feedback Session, Q/A & Wrap Up

Michael Pack
Director
UMD CATT Lab

Matt Glasser
National TSMO Account Lead
Arcadis
RITIS User Group Co-chair

We want to hear from you!

- 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 Q&A box or with an email to support@ritis.org

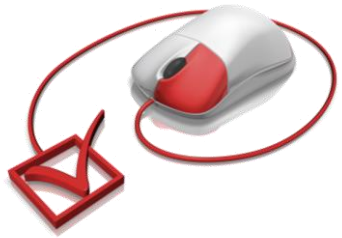


Agency Input – Polling and Open Discussion

Please type your answer under the question in the pop-up box.

Poll 4 - What kinds of things are you currently doing with RITIS - Planning/Ops, presentations, project/funding justification, etc.- that you'd be willing to share at a future meeting?

Poll 5 - Is there any topic you would like to see added to a future User Group meeting?



Wrap Up

Matt Glasser
National TSMO Account Lead
Arcadis
RITIS User Group Co-chair

Questions?

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PDA Suite Tech Support	pda-support@ritis.org