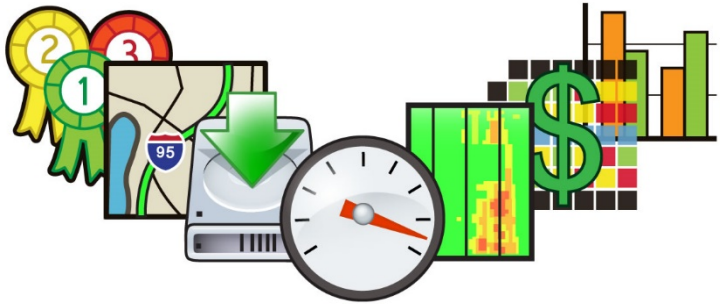
VPP Suite User Group



April 8, 2015

I-95 CORRIDOR COALITION

Meeting Protocols

- Questions will be answered at the end of each presentation
- Ask your question verbally
- Give your name and agency before asking your question (at least the first time)
- Keep your phone muted until asking a question or speaking (press *6 to mute/unmute individual phone lines)
- Do not place call “on hold” as your hold music may be heard by the group
- Call **610-662-5569** for difficulties with the web or audio application.

Please confirm that your line is muted *6

Thank you!

Agenda

Time	Topic	Speaker
10:00am to 10:10am	**Welcome** **Introduction of new VPP Suite User Group Co-Chairs**	George Schoener, I-95 Corridor Coalition, Exec. Director
10:10am to 10:15am	**Purpose of this Meeting**	New co-chairs
10:15am to 10:25am	**VPP Suite Funding Status & Cutoff dates for those states/agencies who are unable to continue funding**	Michael Pack, UMD CATT Lab
10:25am to 10:45am	**Review of VPP Suite Features/Tools/Timeline** • New functionality since last meeting • In-progress development efforts • MAP-21 & NPMRDS updates • VMT-UDC changes	Michael Pack, UMD CATT Lab
10:45am to 10:50am	**Working Group Update** • Establishing new working groups • Introduction of working group leader	Michael Pack, UMD CATT Lab
10:50am to 11:20am	**Agency Input Session** to learn about what is working & what needs some attention	All
11:20am to 11:25am	**Other Issues**	Michael Pack, CATT Lab
11:25am to 11:30am	**Next Steps and Meeting Wrap Up**	George Schoener, I-95 Corridor Coalition, Exec. Director

Meeting Participants

#	Agency	Name(s)	#	Agency	Name(s)
1	Florida DOT	Russell Allen	8	MWCOG	Andrew Meese
2	Georgia DOT	Mark Demidovich	9	North Jersey TPA	Keith Miller
3	New Jersey DOT	Bill Kingsland, Amir Ibrahim, Gail Yazersky, Neha Galgali, Sudhir Joshi, Ira Levinton, Simon Nwachukwu, Kelly McVeigh, Jim Hadden	10	Richmond Regional MPO	Greta Ryan
4	Rhode Island DOT	Dan Herstine, Bill Nordstrom (Jacobs), Deanna Peabody (TranInfo)	11	South Jersey TPO	Andrew Tracy
5	Virginia DOT	Rose Lawhorne, Ram Venkatanarayana	12	I-95 Corridor Coalition	George Schoener
6	Baltimore Metropolitan Council	Ed Stylc, Victor Henry	13	UMD CATT Lab	Michael Pack, John Allen
7	DVRPC	Jesse Buerk, Zoe Neaderland (and others)	14	KMJ Consulting (Coalition Support)	Karen Jehanian, Joanna Reagle

Welcome

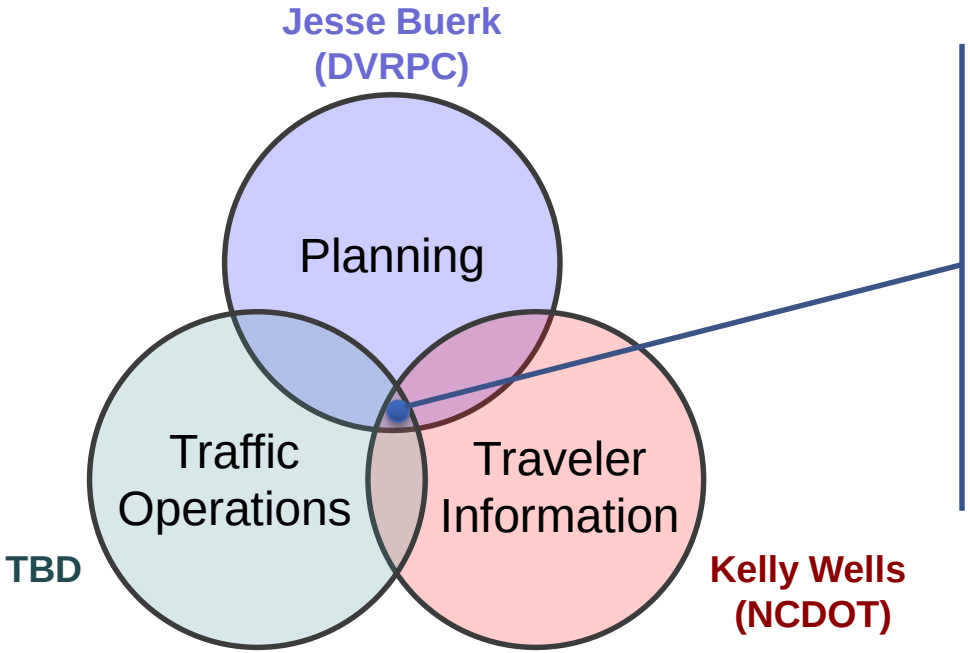
George Schoener
I-95 Corridor Coalition

Many Thanks, John Allen!

Introduction of new VPP Suite User Group Chairs

- With John Allen joining the CATT Lab, there was a need to fill the vacant User Group chair
- The thought was to fill the position with co-chairs, for more a complete perspective (State/MPO, Planning/Operations, etc.)
- So please welcome:
  - Kelly Wells (NCDOT)
  - Jesse Buerk (DVRPC)

The new co-chairs will create a cohesive synergy



The co-chair's vision, leadership and guidance will help provide for:

- A more comprehensive State & MPO perspective…
- that leads to better integration of Planning-Ops-Travel Info needs & considerations…
- for improved tools and products.

VPP Suite User Group Goals

Use a collaborative approach to expand and improve the use and benefit of the Suite by:

- **Addressing User Needs**
  - Assistance with software issues
  - Detailed explanation/guidance on using the tools
- **Addressing Developer Needs**
  - Gain feedback on the usability
  - Gather requests for additional functionality

Funding Status and Cutoff Dates

Reminder: Federal funding expired in Jan. 2015.

On July 1, 2015, the suite will be disabled for agencies that have not worked out a funding plan with the CATT Lab for their 2015 contributions.

States, MPOs, etc. who have already contributed (or worked out a plan) will continue to have unrestricted access.

States/MPOs/users will receive follow-up calls next week to confirm participation.

Review of VPP Suite Features/Tools/Timeline

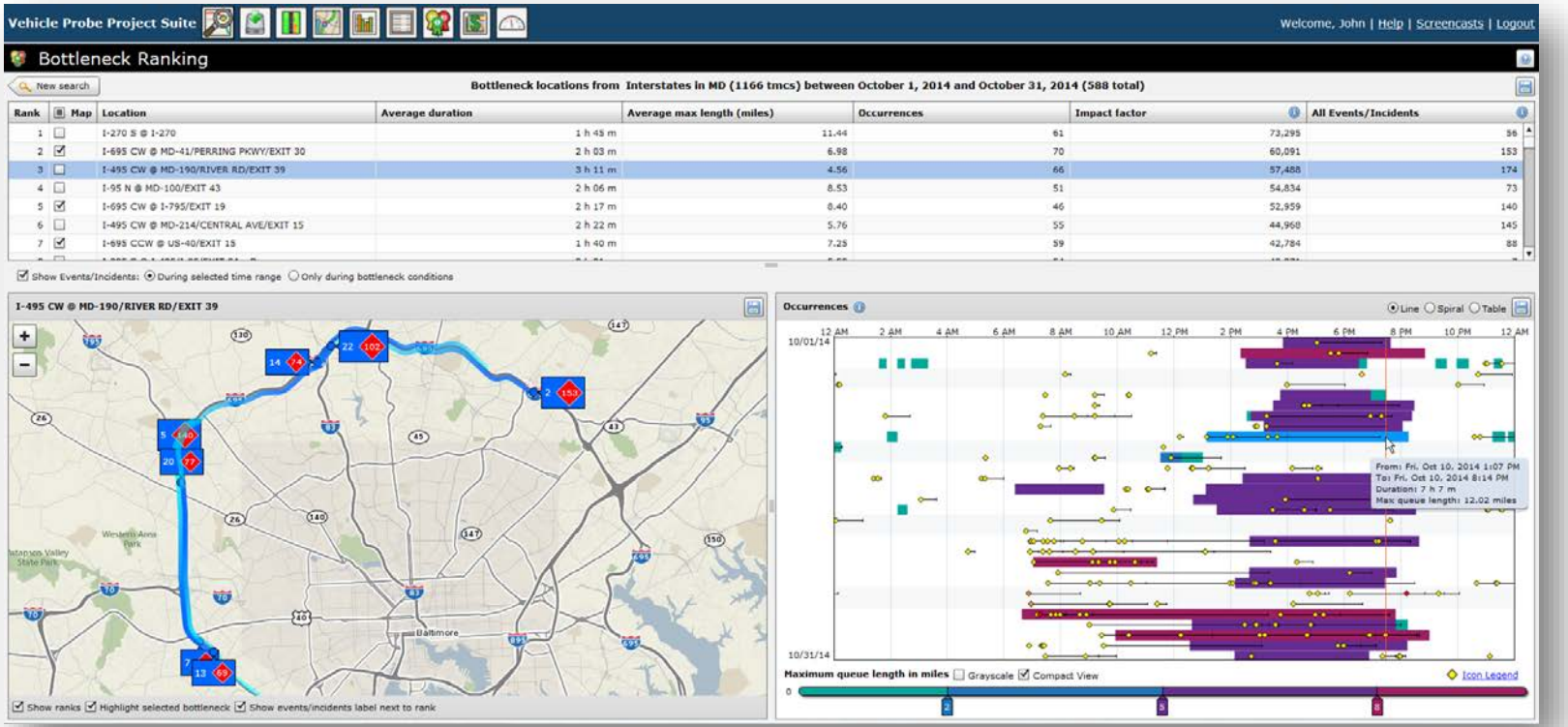
Michael L. Pack
CATT Laboratory

Topics for Today

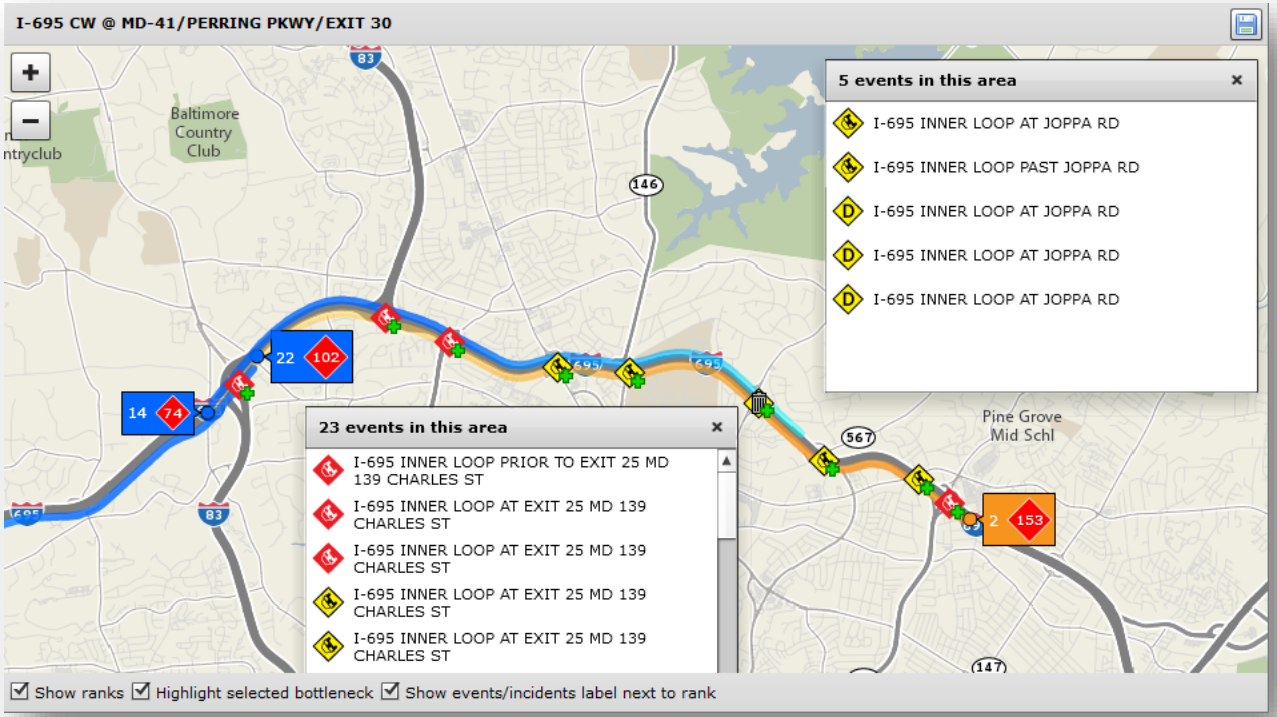
- **Review of VPP Suite Features/Tools/Timeline**
  - New functionality since the last meeting
  - In-progress development efforts
  - MAP-21 &NPMRDS updates
  - VMT-UDC changes
- **Working Group Update**
  - Establishing new working groups
  - Introduction of working group leader
- **Agency Input Session**
  - What's working/what needs attention

Bottleneck Ranking – Bottleneck/Event Data

Bottleneck Ranking now includes traffic event and incident data from RITIS and aligns those events to bottlenecks, with new features added into the Impact Factor table, map and 3 visualization choices



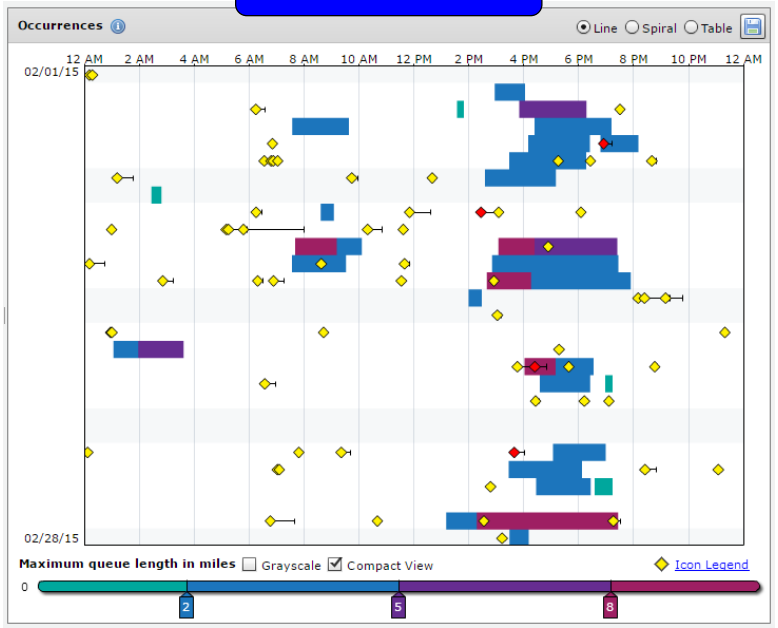
Map Bottleneck/Event Detail



- Total number of events are shown in red diamonds
- Use zoom to reveal more event detail
- Clicking on the green crosses (areas of multiple events) opens a detail box for that location

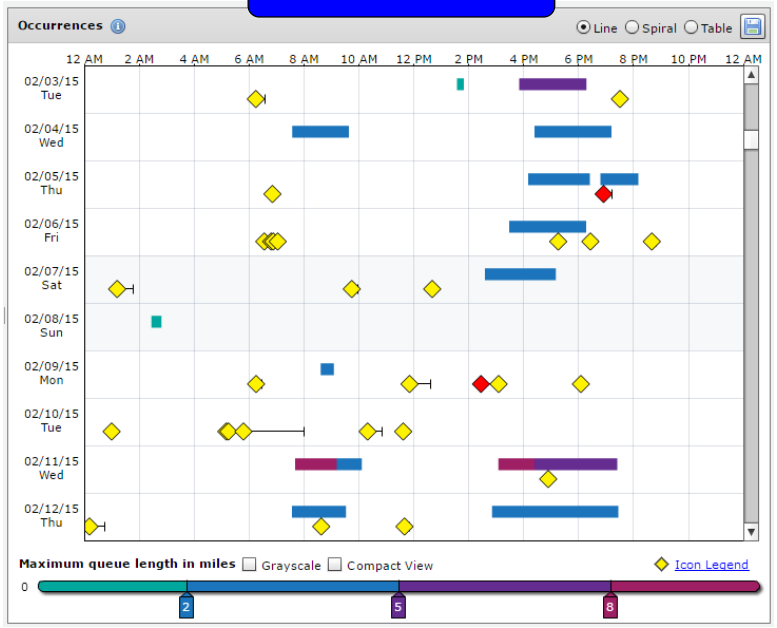
Time-Table Visualization

Compact View



Get an overview-level understanding of the data

Multi-Screen View



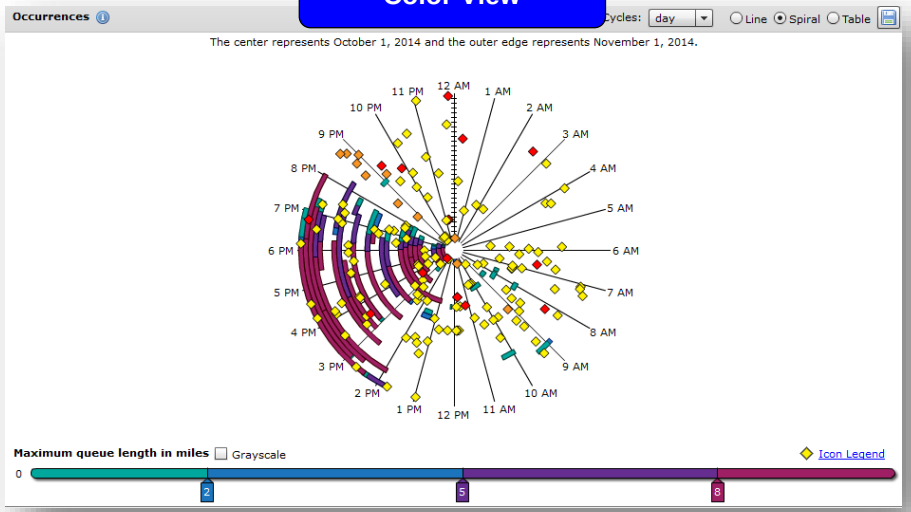
Scrollable to dig into the details

Incident Icons Legend

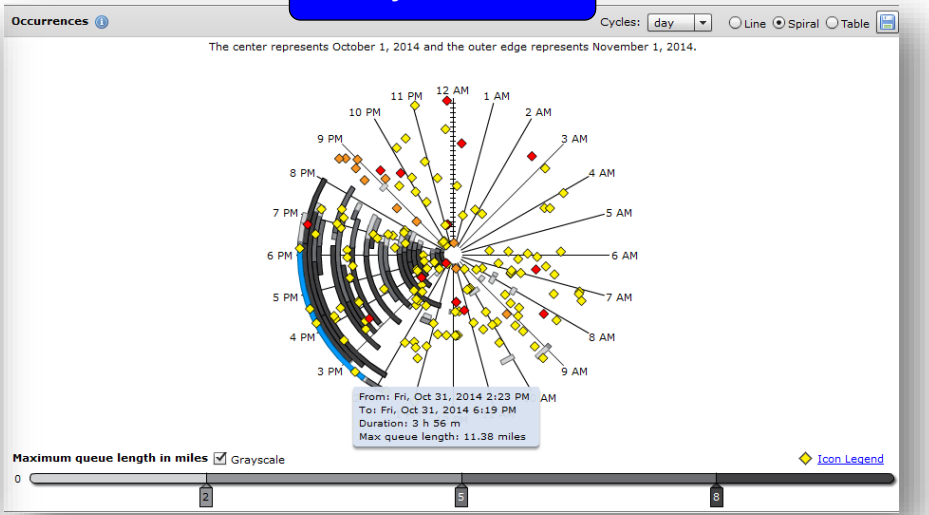
Red — Severe events and incidents Orange — Roadwork Yellow — All other events and incidents

Time Spirals & Event Icons

Color View



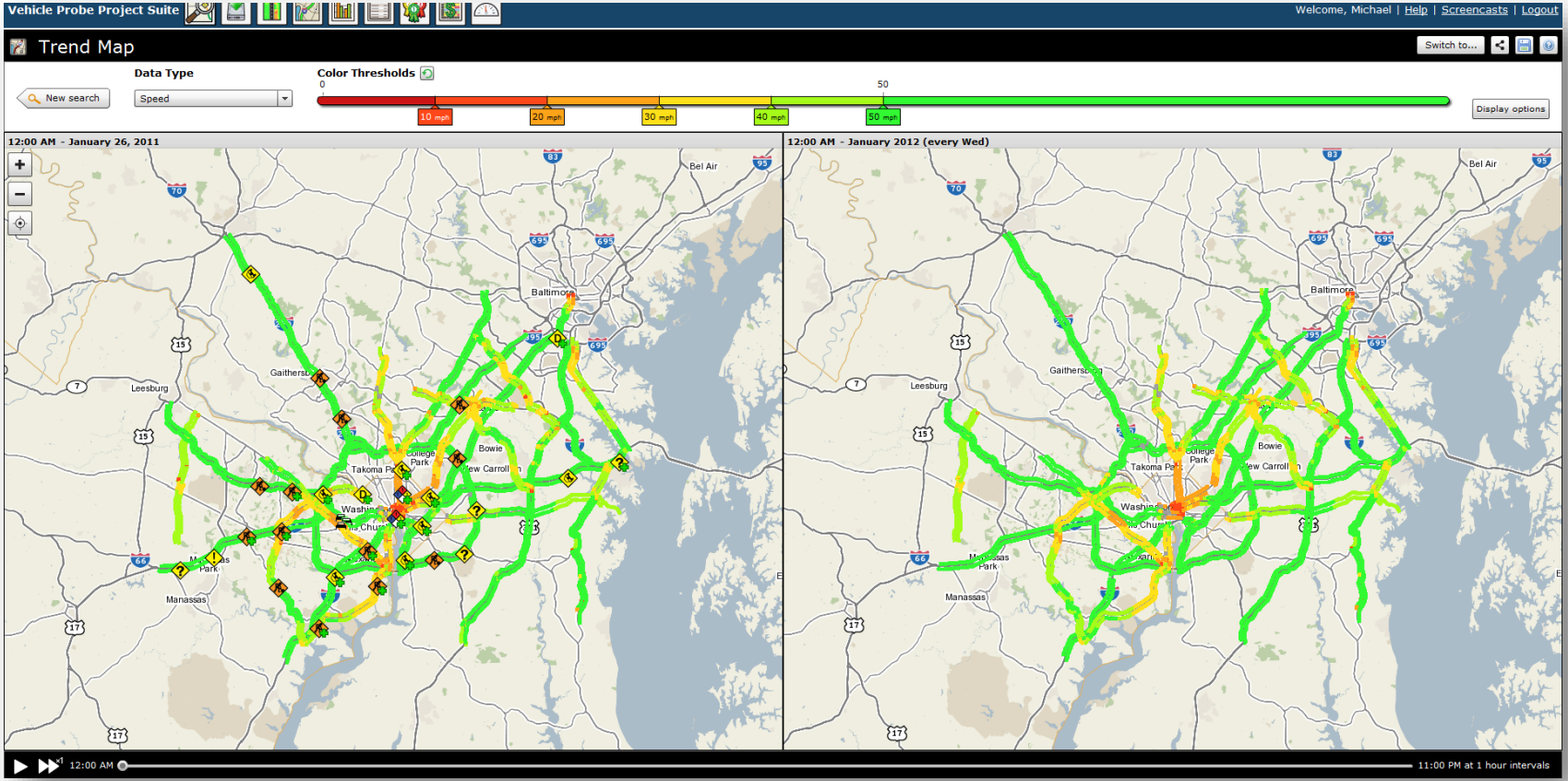
Grayscale View



Incident Icons Legend

Red — Severe events and incidents Orange — Roadwork Yellow — All other events and incidents

Events on Trend Maps



Harmonic Mean

- Improves upon how average speeds are calculated across our tools
- Has the benefit of preserving the relationship between speed and travel time
- Impacts the calculations of the **buffer time index**, **planning time index**, **user delay cost**, and all other performance metrics
- You will need to recreate any previous reports to take advantage of the harmonic mean

User Documentation

Vehicle Probe Project Suite

Welcome, John | Help | Screencasts | Logou

Help

General Information

- The Vehicle Probe Project Suite
- ▶ Data Types
- ▶ Bottlenecks
- ▶ TMC Codes
- ▶ Incident/Event Icons
- Support

Tools

- ▶ Region Explorer
- ▶ Massive Raw Data Downloader
- ▶ Congestion Scan
- ▶ Trend Map
- Performance Charts
- Performance Summaries
- Bottleneck Ranking
- ▼ User Delay Cost Analysis
  - ▶ User Delay Cost Report Parameters
  - ▶ Preferred Volume Formats
  - ▼ **How User Delay Cost is Calculated**
    - Using AADT Counts
    - Limiting Volumes
    - Applying Vehicle Percentages
    - Vehicle-Miles of Travel
    - Travel Delay
    - Delay Cost
    - UDC Report Totals
    - Hourly Volume Distribution Charts
  - User Delay Cost Warnings
- ▶ Dashboard

User delay calculations are performed hourly at the TMC level, then aggregated across the requested geographic region for each day in the analysis period.

Calculating User Delay Cost with AADT Counts

When calculating Average Daily Traffic counts (ADT) from Annual Average Daily Traffic (AADT) counts, daily factors must be applied.

Day of Week	Adjustment factor
Monday to Thursday	+5%
Friday	+10%
Saturday	-10%
Sunday	-20%

Some TMC segments may span across two or more defined volume link locations, and vice versa (as shown in Figure 1). In order to obtain a single AADT measurement for TMCs that fall under this case, the AADT of the overlapped detector locations must be weighted by the distance of the portion of the TMC that falls into the range of each link location.

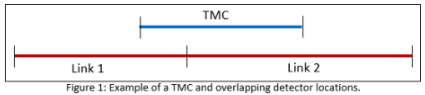


Figure 1: Example of a TMC and overlapping detector locations.

In order to be able to calculate many of the delay analysis measures, hourly profiles must be found for each TMC to give an hourly volume. In order to find these, the following calculations must be performed (assuming the necessary data is provided):

Define the functional class of the TMC — the functional class (Freeway or Non-Freeway) is defined based on TMC information. If the road class is Interstate, the functional class is Freeway. Any other road class is Non-Freeway.

Day type — weekday or weekend, the day of week determines which hourly profile to use. Note that all hourly weekend delay calculations rely solely on the two unique weekend profiles, regardless of congestion level or directionality (see Exhibit A-5).

Congestion level — can be one of: Low, Moderate, or Severe. Congestion level is found for each TMC segment through multiple steps:

- Calculate an average peak period speed using speed data from 6am - 10am and 3pm - 7pm. The days to select this data from depend on the desired outcome of the reports. If looking at a whole year and you only want to see annual values, each TMC will need to have the average speed calculated for all weekdays (giving one result). If looking at a week of data and you want to see values for every day of the week, the average speed would be calculated per weekday (giving 5 results), therefore five hourly profiles for each day of week.
- Get the free-flow speed for each TMC.
- Calculate a peak period speed reduction factor that will determine the congestion level. This is done by dividing the average peak period speed by the free-flow speed.
  speed reduction factor (SRF) = (average peak period speed ÷ freeflow speed) × 100
  For Freeways:
  - SRF is greater than or equal to 90 (low congestion)
  - SRF is between 75 and 90 (moderate congestion)
  - SRF is below 75 (severe congestion)

  For Non-Freeways:
  - SRF is greater than or equal to 80 (low congestion)
  - SRF is between 65 and 80 (moderate congestion)
  - SRF is below 65 (severe congestion)

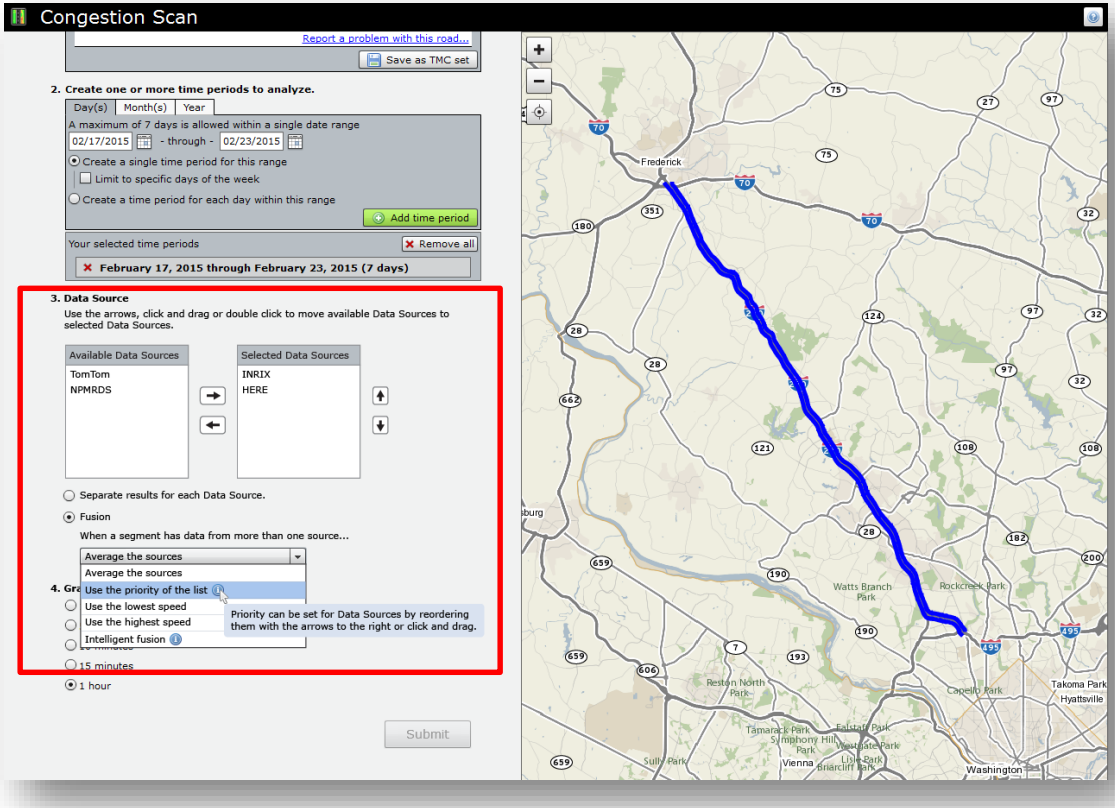
Determine the directionality of the TMC — Directionality defines which peak period (AM or PM) this TMC segment is congested worse during. This is found by calculating both peak period speeds (AM being 6am - 10am and PM being 3pm - 7pm). The lowest speed of the two determines the directionality. If the difference between the two speeds is less than or equal to 6, the directionality is considered Even. The same day selection rules for average peak period speed apply here.

Assign the hourly profile to the TMC — See the hourly volume distribution charts for percentages of the ADT for the day. For single days, the ADT for that day must be multiplied for each of the hourly factors in the profile.

Tutorials


Vehicle Probe Project Suite
Help | Screencasts | Login
Tutorial
RITIS
Sign in to your RITIS account
Email address
Password
Submit
Forgot your password?
The Vehicle Probe Project Suite
Access to the Vehicle Probe Project Suite is linked to your RITIS account. If you do not have a RITIS account, you can request one here.
In addition, only members of public sector agencies that have signed the Vehicle Probe Data Use Agreement will be granted access to the Vehicle Probe Project Suite.
In the meantime, you can see demonstrations and tutorials of the tools in the suite in the screencasts.
0:06 / 0:25
Getting Access
00:25
The Tools Available
01:20
Road Selection
02:53
Time Period Selection
01:44
The Region Explorer
04:21
The Massive Data Downloader
01:42
Retrieving Exports
00:48
Congestion Scan
03:52

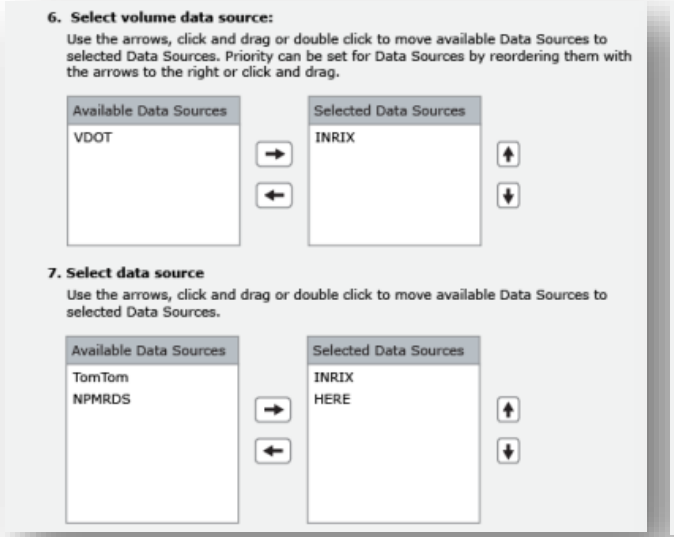
Multi-vendor Integration Status



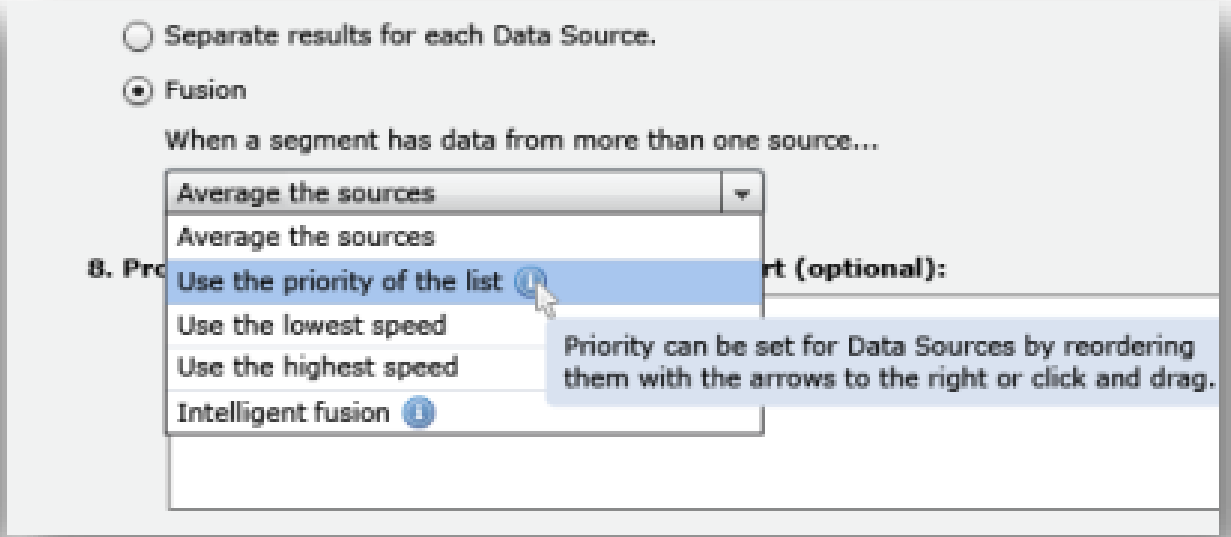
- Data downloader is live.
- Users will soon be able to choose from different data sources for all other tools.
- Will be able to prioritize how the data is used and presented
- A fusion option will give users the ability to average the sources in a number of ways

Multi-vendor Integration over Multiple Tools

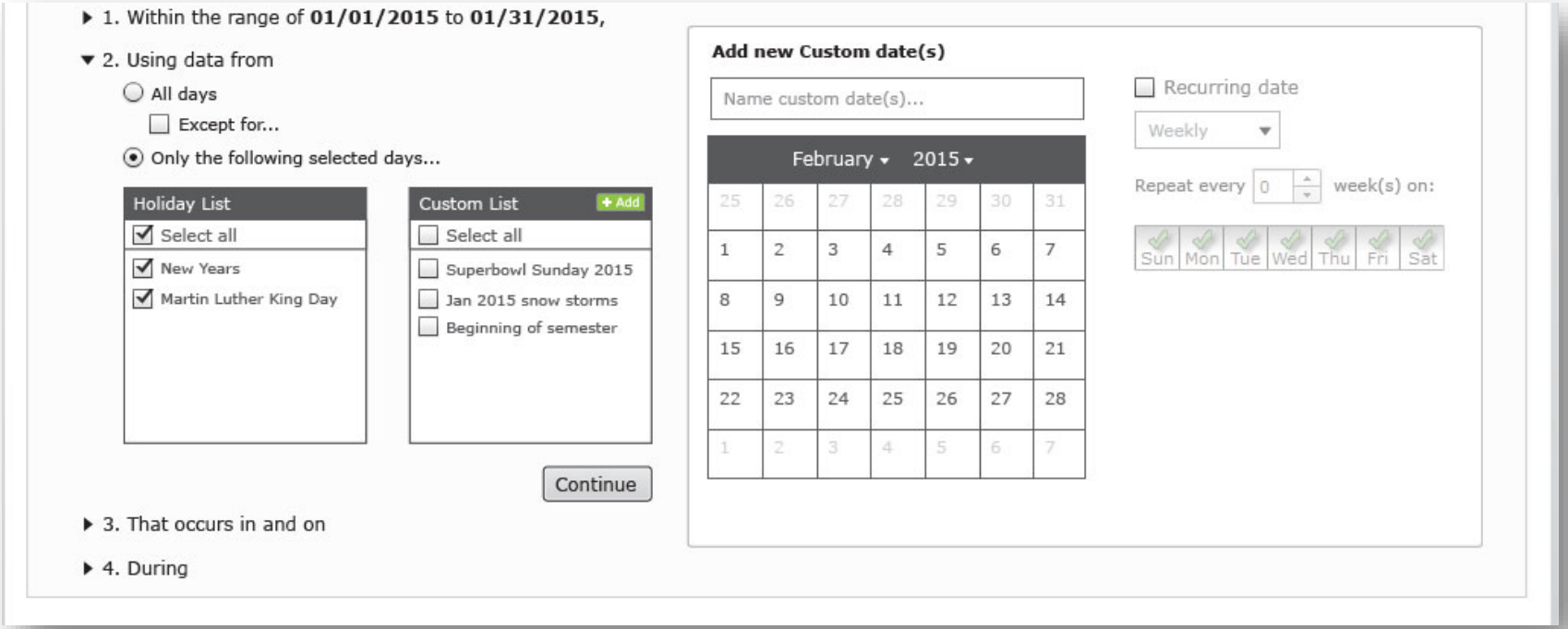
UDC



Future Functionality

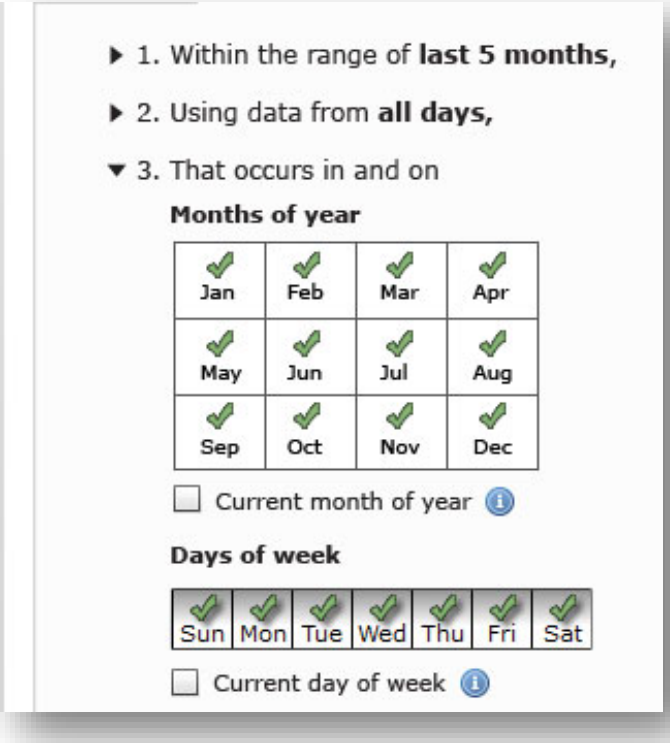


Date-filtering Options (in-progress)



All Days, or; Excluding certain days (holidays/custom list), or; Including only certain days

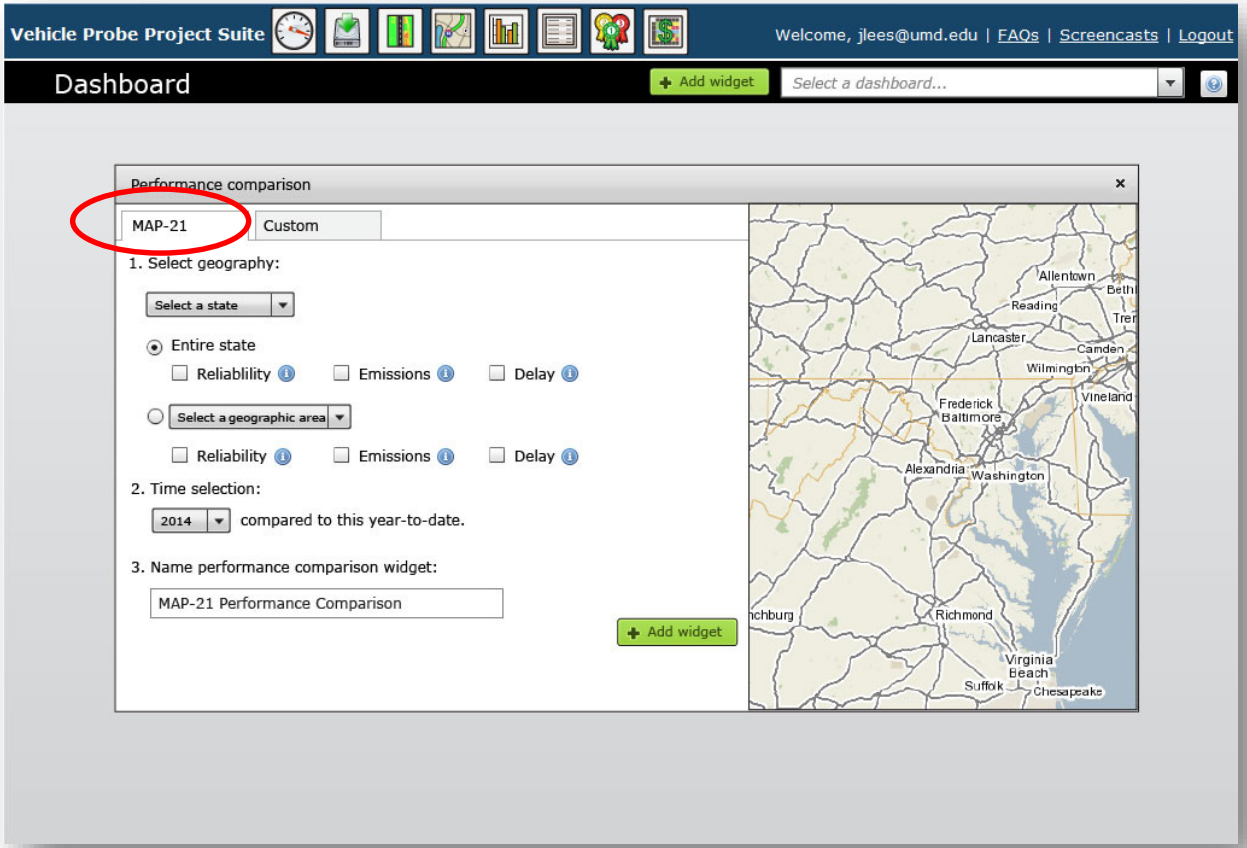
Date-filtering Options (in-progress)



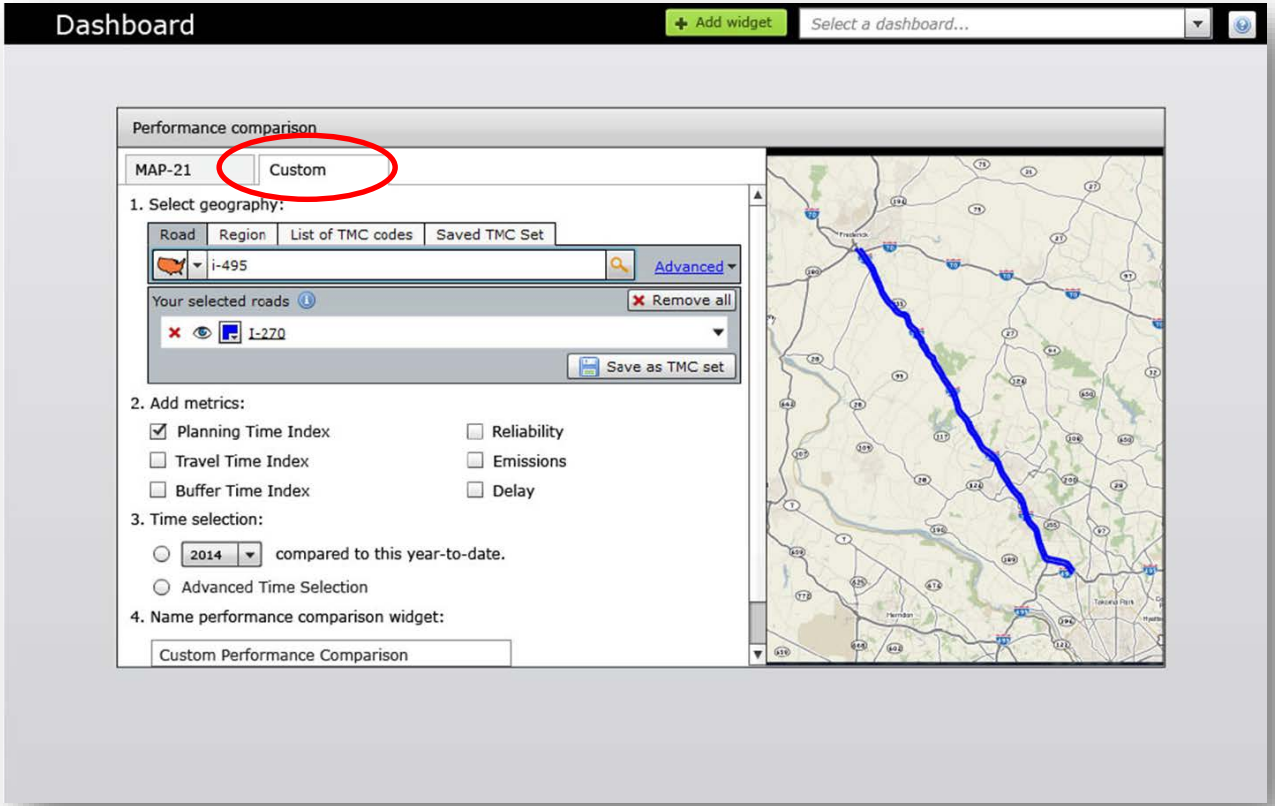
- Exclude certain days/months, etc.

MAP-21 Dashboards (Coming Soon)

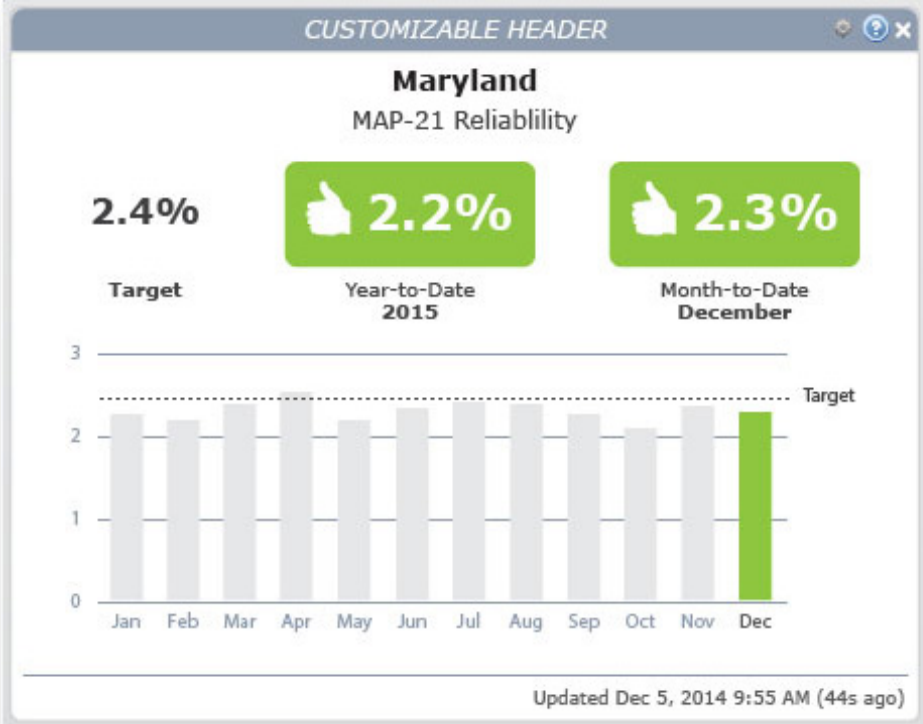
The Dashboard Includes MAP-21 Performance Comparisons…

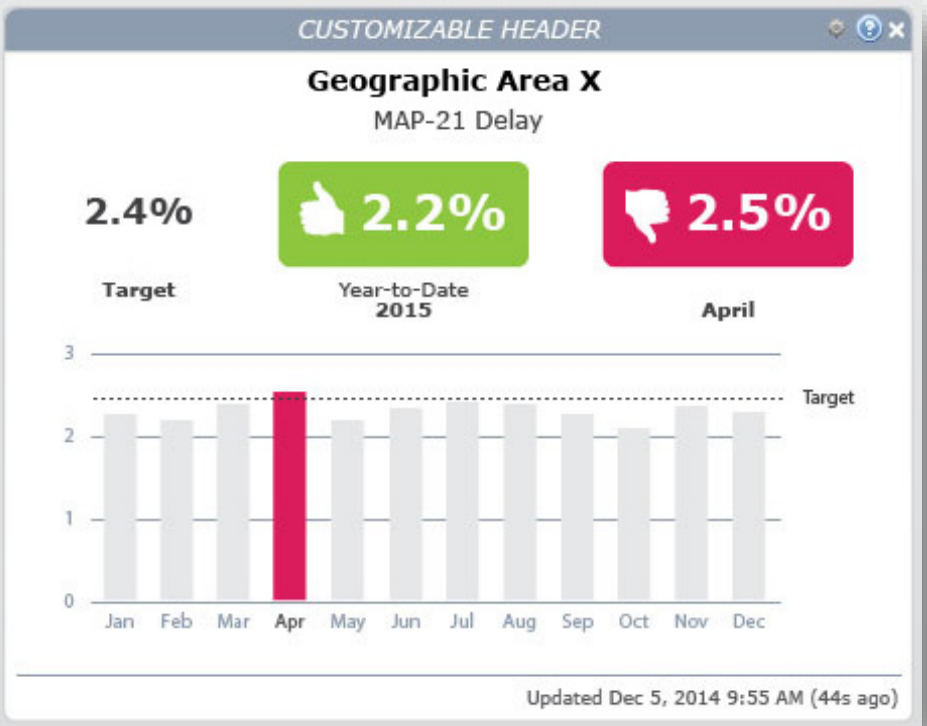


…and Custom Comparisons

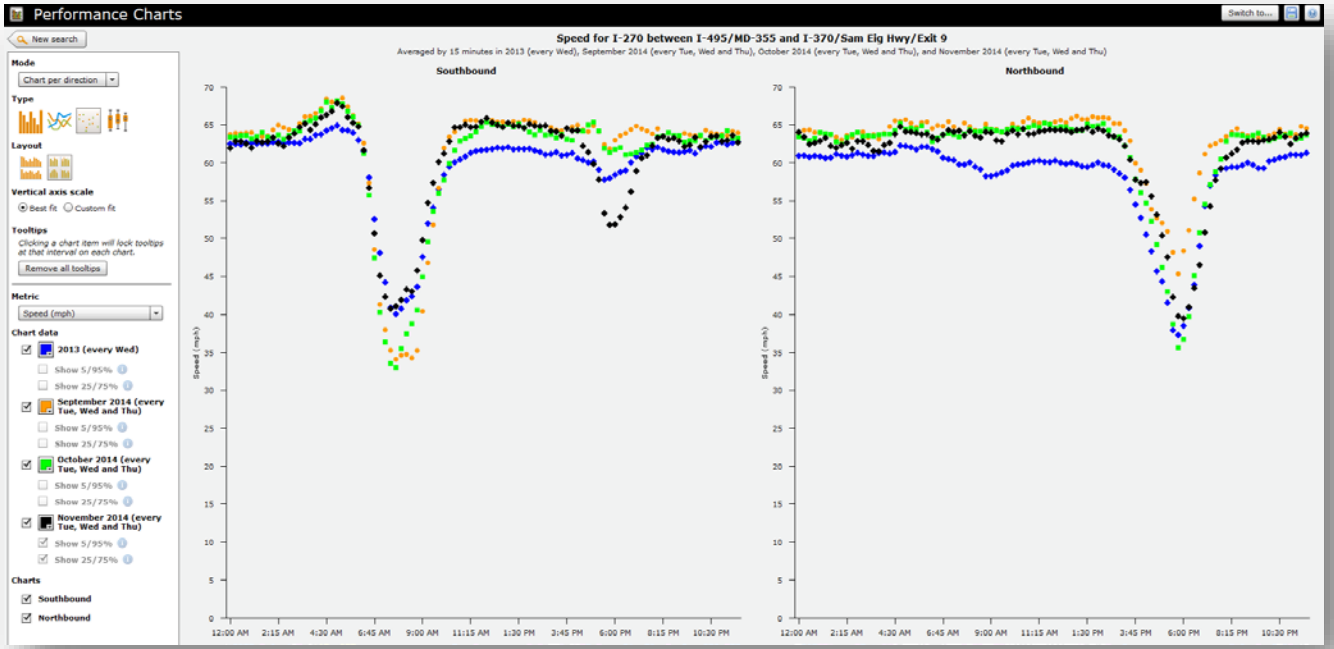


Reliability Widgets at a State and Geographic Area Level





NPMRDS Integration



- Where appropriate, NPMRDS data has been integrated into all of the previously mentioned tools
- NPMRDS data produces meaningful results when looking at a month and/or an entire year's worth of aggregated performance measure data
- The Probe Data Analytics Tools show where gaps exist in the NPMRDS when viewing individual days and/or weeks worth of data

VMT-UDC Changes

- *On-going confusion with "Volume" aggregation*
- *Working groups have identified a number of improvements/changes*
- *Moving away from per-person UDC, and switching over to some form of VMT-based measures. Clarifying how volume data is used and presented.*

Working Group Update

Michael L. Pack
CATT Laboratory

A New Working Group that Emphasizes *User Experience*

- There is a desire to engage the User Group more intimately in the development of interfaces and end products
- We propose a **User Focus Group** that will help shape and guide final development
- John Allen (CATT Lab) will lead the effort

Agency Input Session

Focus on New Features

Event Data Integration

Dashboard Functionality

MAP-21 Working Group

Committed to ★MAP-21★ Coming Soon

Any Other Topics of Interest

Other Issues?

Next Steps & Meeting Wrap Up

George Schoener
I-95 Corridor Coalition

Next User Group Meeting:
July 16, 2015

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Thank You

I-95 CORRIDOR COALITION