VPP Suite User Group

September 24, 2014

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.

Agenda

Time	Topic	Speaker
10:00am to 10:05am	**Welcome and Introductions**	George Schoener, I-95 Corridor Coalition, Exec. Director
10:05am to 10:10am	**Purpose of this Meeting**	John Allen, NJDOT & VPP Suite User Group Chair
10:10am to 10:30am	**Review of VPP Suite Features/Tools/Timeline** • **Software development efforts/new functionality since last meeting** • **Multi-year Roadmap of Enhancement Implementation Discussion of User Delay Cost (UDC) tool issues**	Michael Pack, CATT Lab
10:30am to 10:35am	**Working Group Update – Bottleneck Algorithm**	Michael Pack, CATT Lab
10:35am to 11:10am	**Agency Input Session to learn about what is working and what needs some attention**	All
11:10am to 11:25am	**Funding Discussion** • **O&M Funding** • **New features** • **Current funding status and future funding**	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

#	Name	Agency	#	Name	Agency
1	Gene Glotzbach	Florida DOT	13	Ed Stylc	Baltimore Metropolitan Council
2	John Allen	New Jersey DOT	14	Zoe Neaderland	DVRPC
3	Dennis Motiani	New Jersey DOT	15	Jesse Buerk	DVRPC
4	Amir Ibrahim	New Jersey DOT	16	Wenjing Pu	MWCOG
5	Todd Trautz	Pennsylvania DOT	17	Andrew Meese	MWCOG
6	Dan Herstine	Rhode Island DOT	18	Sutapa Bhattacharjee	NJTPA
7	Bill Nordstrom	Rhode Island DOT	19	Keith Miller	NJTPA
8	Deanna Peabody	Rhode Island DOT	20	Jo Ann Oerter	Atkins (Florida DOT)
9	Sanhita Lahiri	Virginia DOT	21	George Schoener	I-95 Corridor Coalition
10	Ramkumar Venkatanarayana	VA Ctr. for Transportation Innovation & Research	22	Michael Pack	UMD CATT Lab
11	Rose Lawhorne	Virginia DOT	23	Karen Jehanian	KMJ Consulting (Coalition Support)
12	Mena Lockwood	Virginia DOT	24	Joanna Reagle	KMJ Consulting (Coalition Support)

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Welcome and Introductions

George Schoener
I-95 Corridor Coalition

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Purpose of this Webcast

John Allen,
NJDOT & VPP Suite User Group Chair

VPP Suite User Group Goal

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

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Topics for Today

- **Suite Features/Tools/Timeline Review**
  - Software development efforts/new functionality
  - Multi-year Roadmap of Enhancement Implementation: are we still hitting the key issues?
  - User Delay Cost issues
- **Working Group Update**
  - Bottleneck Algorithm
- **Agency Input Session**
  - What's working/what needs attention
- **Funding Discussion**
  - O&M Funding/New features/Current funding status and future funding

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Review of VPP Suite Features/Tools/Timeline

Michael L. Pack

CATT Laboratory

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VPP Suite Roadmap: Our Progress & Future.

June '14

- 25th/75th/min/max values on all charts
- Provide volume data in UDC table
- Faster basemap tiles
- *Revamped base map tiles (Possibly July)

Aug. '14

- Hadoop backend work to support future:
  - New bottleneck tracking and ranking algorithm
  - Longer date ranges
  - More TMCs and/or larger geographies
  - Smaller temporal aggregation levels & increased Speed
- Agency Website Embedded Interactive Trend Maps to support pre-Holiday travel Press Releases
- Configurable Dashboard-style Displays – backend work
- UDC-per-interchange chart (Request from SC DOT)
- Standardize and organize controls within the headers of each existing tool
- Video output for the trendmap

Dec. '14

- Store results of queries from all tools in a "My Reports" list and send emails when reports are ready so users do not have to leave the suite open for long duration queries
- Scheduling output of Performance Reports and Bottleneck Rankings
- Congestion Scan enhancement to allow you to join multiple roads together
- New bottleneck algorithm
- Longer date ranges and larger TMC sets
- Incident/event overlays on certain graphics/tables including Bottleneck Ranking
- VPP Suite Forum
- Configurable Dashboard display elements
- FAQ updates
- Tutorial Updates
- MULTI-VENDOR INTEGRATION!

March '15

- Support MAP-21 reporting requirements including dealing with potential issues related to handling multiple thresholds and target-setting for congestion, variable speeds, averaging, etc.
- Evaluate which reports could support ignoring low quality data
- Add enhanced data quality graphics to existing reports
- Configurable Dashboard display elements

TBD

- Experienced Travel Times
- Graphics to depict % of time at certain speeds (D. Bullock/Purdue PM graphs)
- CDF Plots
- New Reliability graphics
- Use volume data from real-time detectors
- VPP Suite for detector data
- Trend Graphics (a la Hans Rosling)
- Transition away from Flex to support mobile devices and newer web technologies.
- Integrate Treeversity features/functionality into the VPP Suite for bottleneck trend analysis
- Trend Map Movie Creator
- Configurable Dashboard display elements

Notes

1. The above roadmap represents milestone goals for the CATT Lab development team. Achieving each milestone is dependent on a number of variables—some of which are outside of the control of the CATT Lab.
2. Achievement of these goals is dependent on aggressive hiring strategies.
3. MAP-21 reporting goals will be highly dependent on the finalization of FHWA rule-making and complexity of the measures.
4. Dates are based off of rough estimates of levels of effort. As each project officially begins, timelines and budgets may need to be adjusted accordingly.
5. MCOM/I-95 Funding may not be sufficient to cover 100% of above mentioned functionality
6. I-95 User Group timely input and consensus building is critical
7. Items in RED are considered riskier but necessary investments with significant cost and more unknowns and/or external dependencies

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Summer Progress

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Volume Display Option in User Delay Cost (UDC)

Volume Display Option in UDC Tables

25th/75th & 5th/95th Percentiles
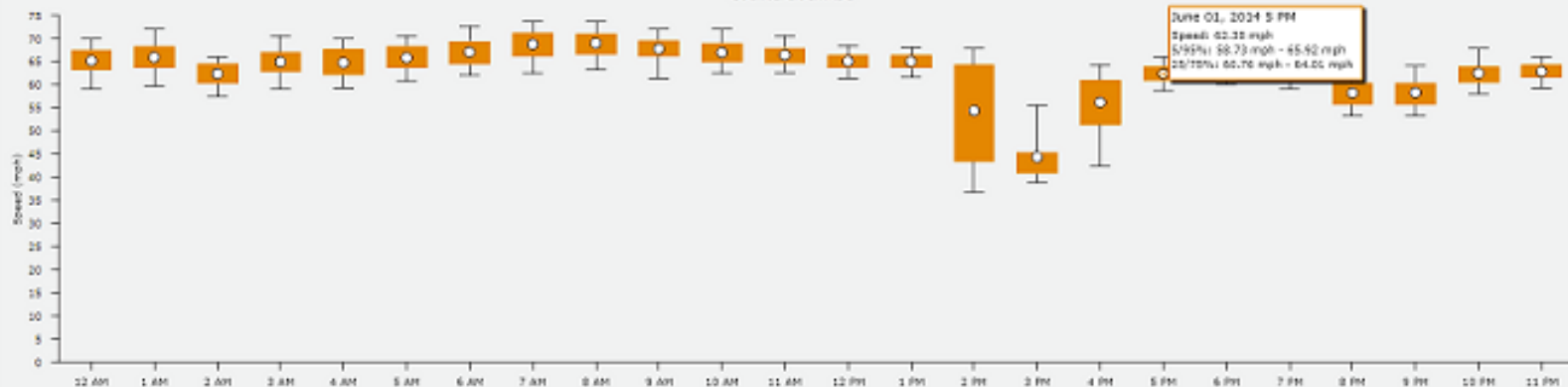
Line Chart Percentiles
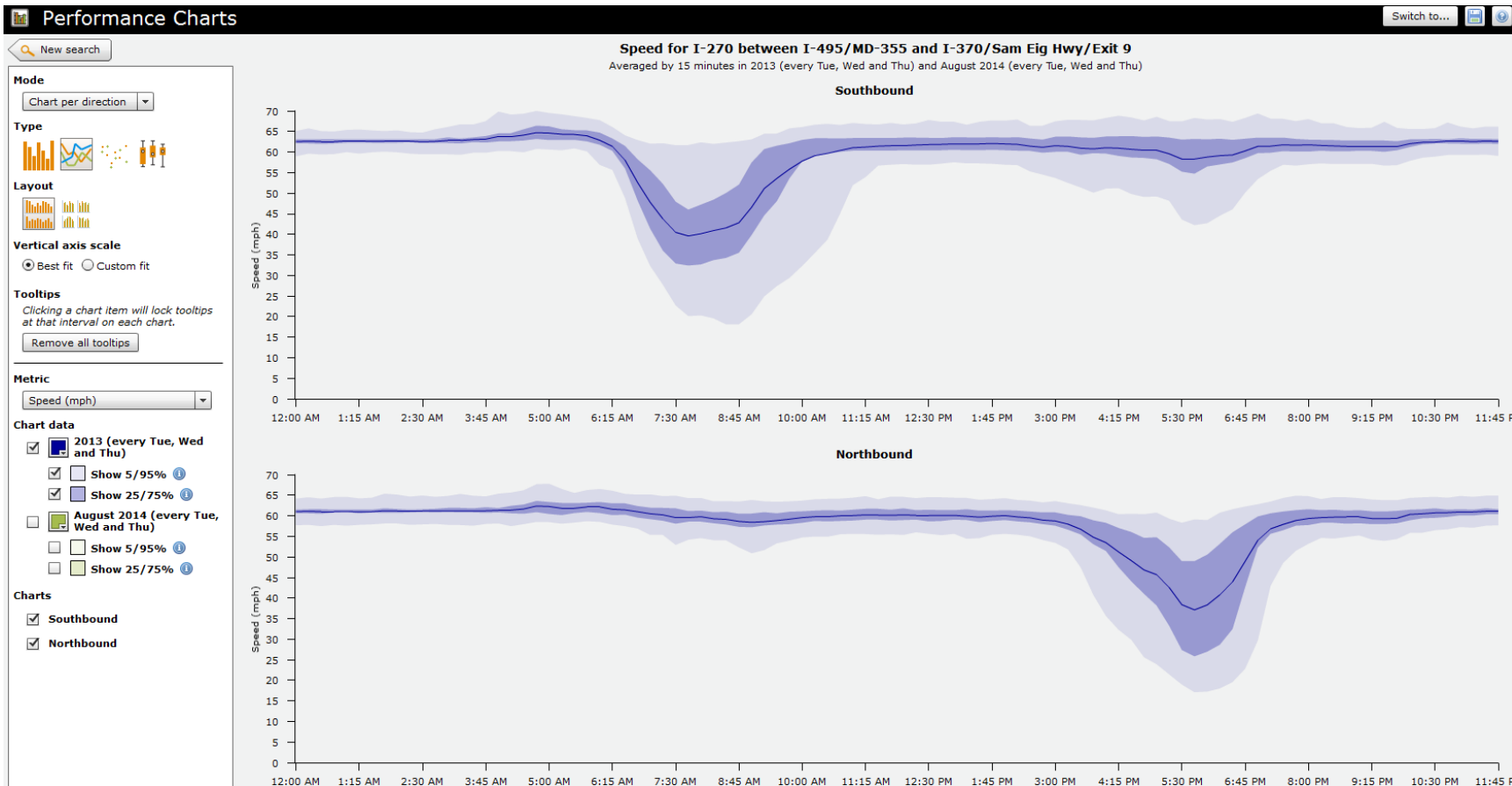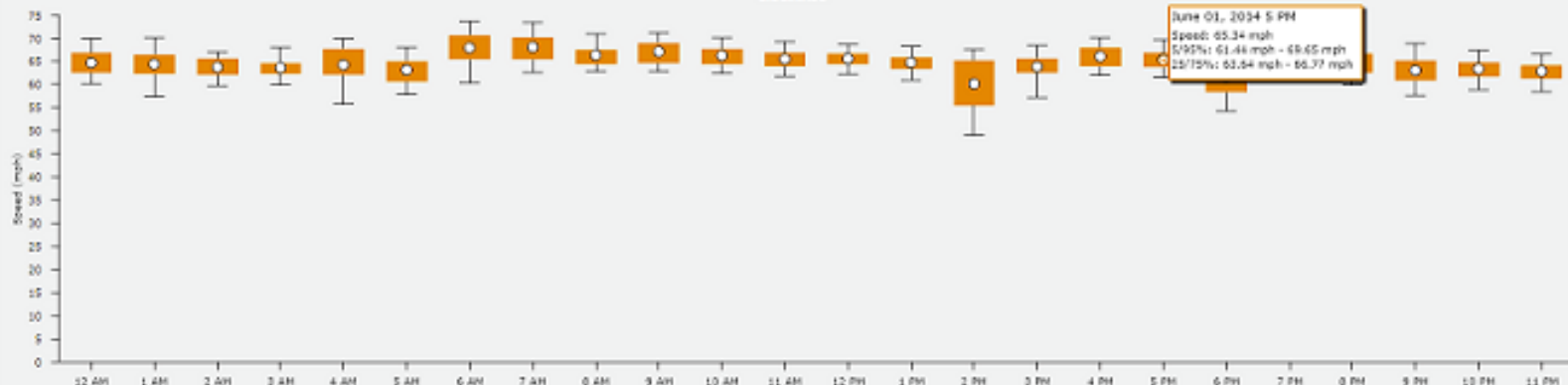
Performance Charts

Open Report As...

Speed for I-495 between MD-193/University Blvd/Exit 29 and US-50/Exit 19

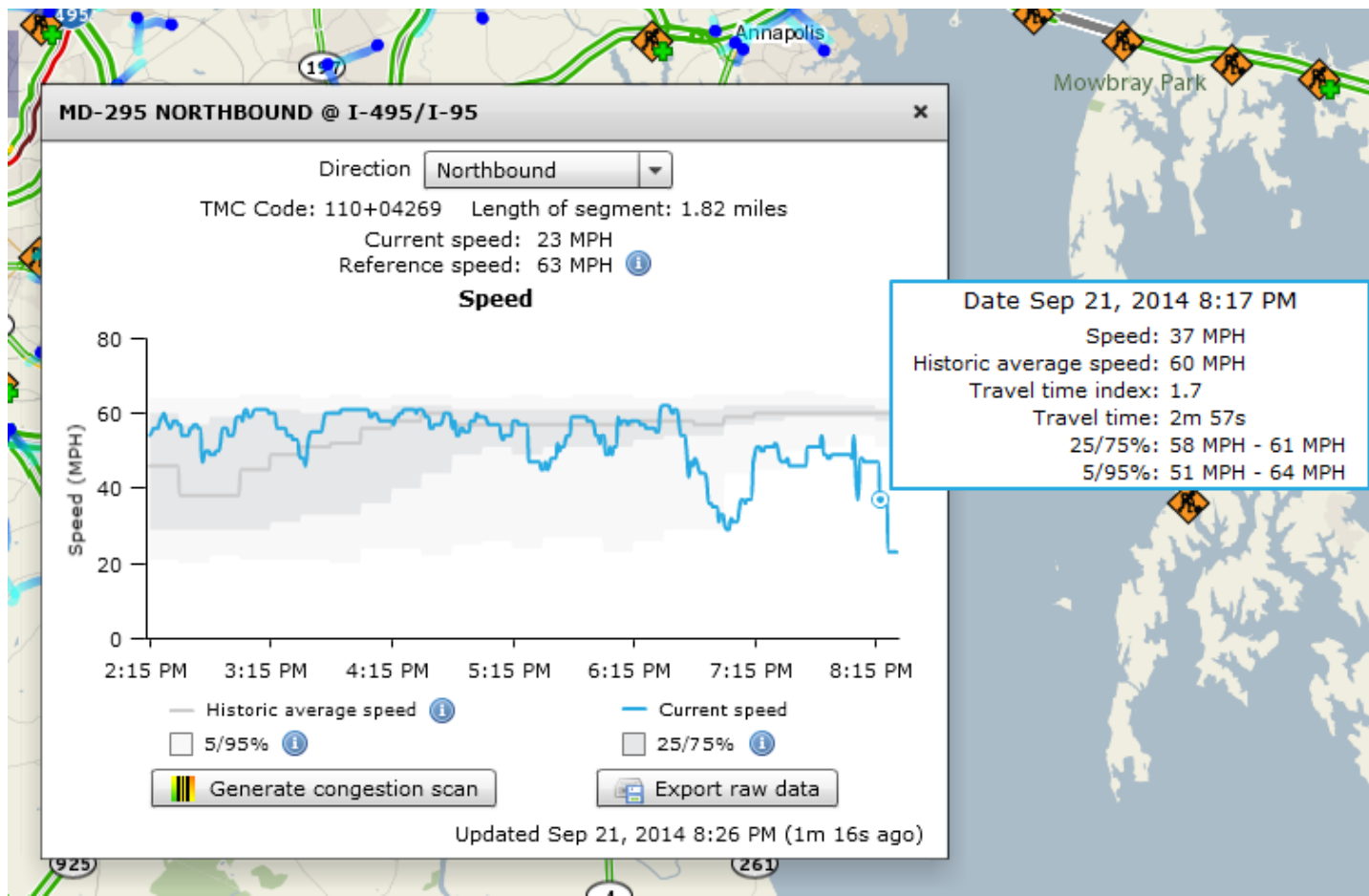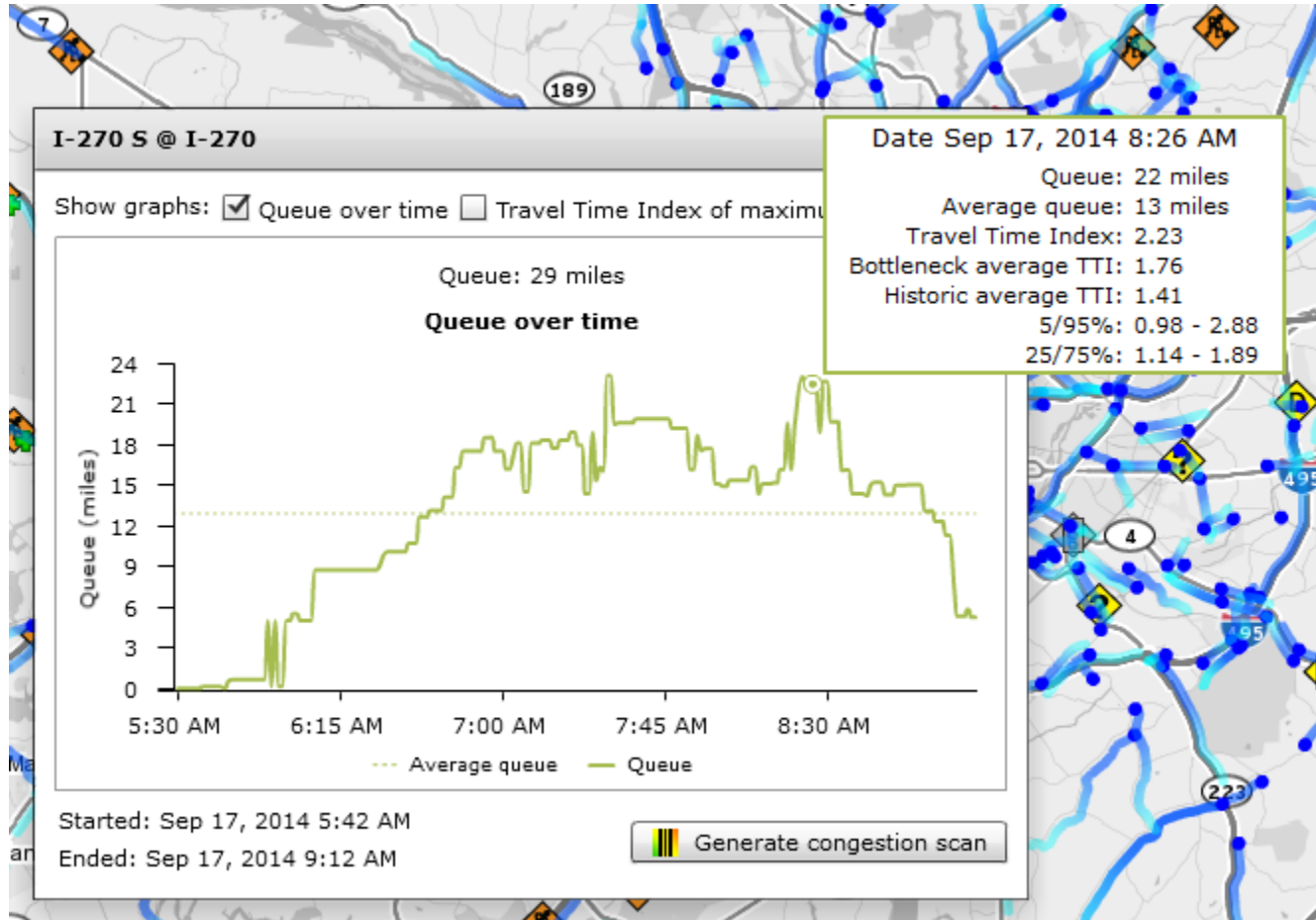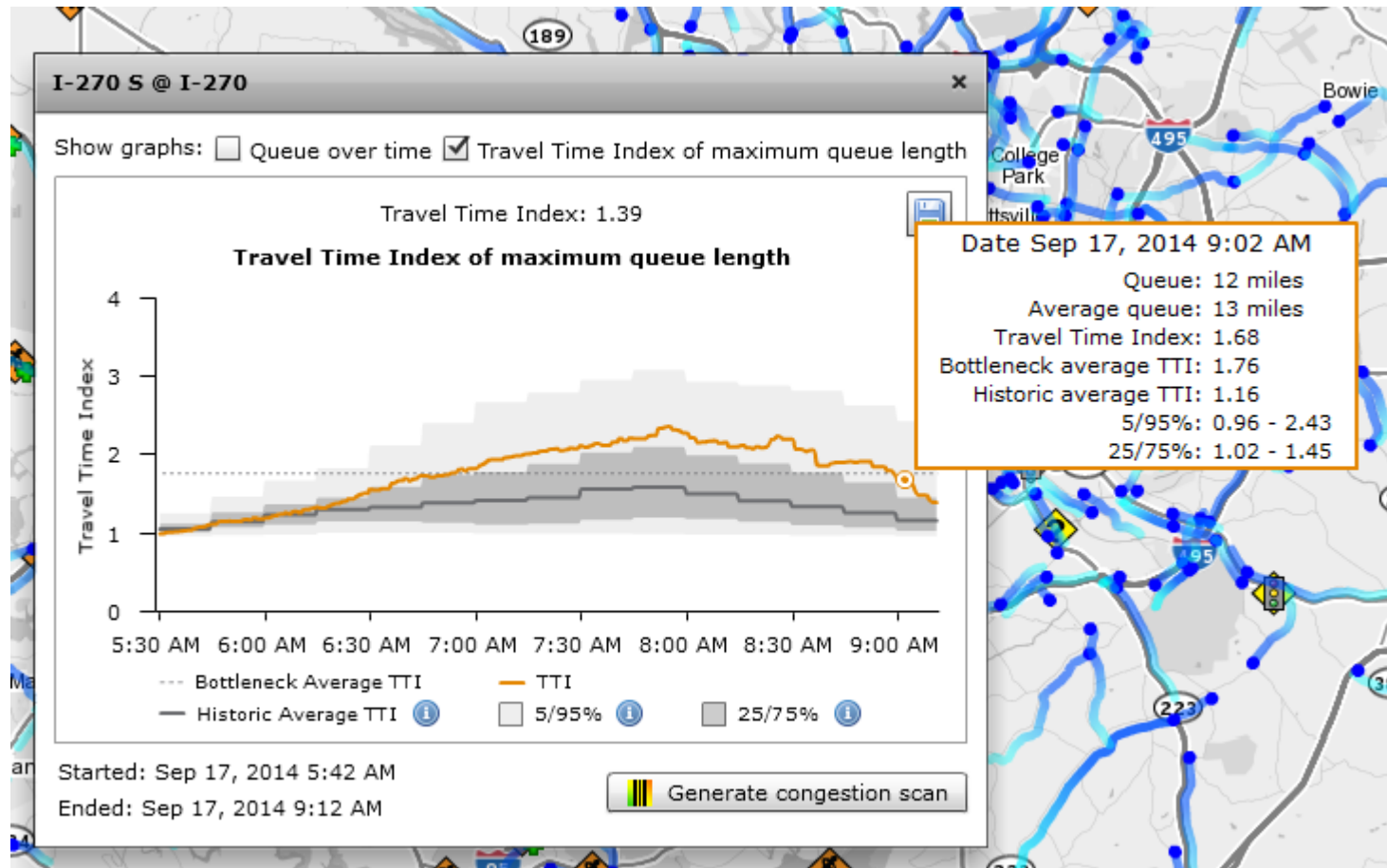Averaged by 1 hour in June 01, 2014, June 01, 2014 through June 03, 2014, June 02, 2014, and June 03, 2014

Mode
Chart per direction

Type

Layout

Vertical axis scale
⦿ Best fit   ◯ Custom fit

Tooltips
Clicking a chart item will lock tooltips at that interval on each chart.

Remove all tooltips

Metric
Speed (mph)

Chart data
☑ June 01, 2014
  ☑ Show 5/95%
  ☑ Show 25/75%

☐ June 01, 2014 through June 03, 2014
  ☐ Show 5/95%
  ☐ Show 25/75%

☐ June 02, 2014
  ☐ Show 5/95%
  ☐ Show 25/75%

☐ June 03, 2014
  ☐ Show 5/95%
  ☐ Show 25/75%

Charts
☑ Counterclockwise
☑ Clockwise

Legend
◯ Average

Counterclockwise

June 01, 2014 5 PM
Speed: 62.38 mph
5/95%: 58.73 mph - 65.62 mph
25/75%: 60.76 mph - 64.01 mph

Clockwise

June 01, 2014 5 PM
Speed: 65.34 mph
5/95%: 61.46 mph - 69.65 mph
25/75%: 63.54 mph - 66.77 mph

Dashboard Percentiles

Dashboard Percentiles

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Dashboard Percentiles

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Header updates

Switch to... The "Open report as" button has been renamed to "Switch to". It will allow you to switch to a different tool in the suite with the same data you are viewing in the current tool.
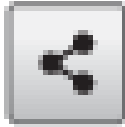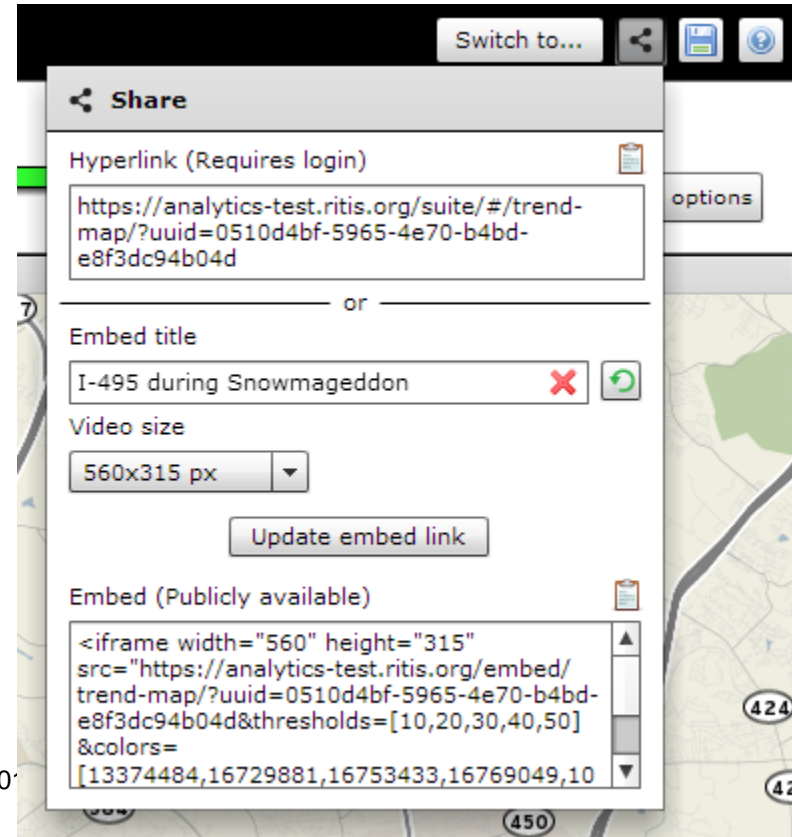
The "Share" button is replacing the "Hyperlink" button. It will open a menu with the shareable link and, in the case of Trend Map, an embed code. This allows you to share the data set you are viewing with others.

All save features -- exporting to excel, taking screenshots, and saving movies -- can now be found under the "Save as" button.

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Trendmap Sharing & Embedding

- Meant for "press" releases and other collaboration.

- Required re-write of
  - Interface
  - Interactivity
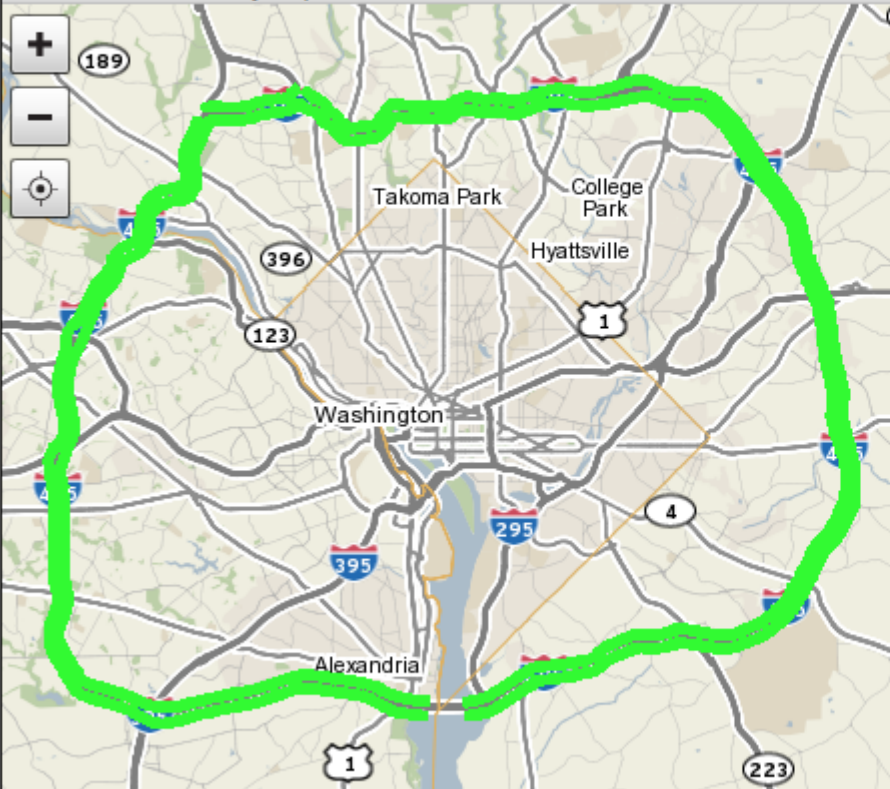 - Storage/hosting
  - Security

Switch to...

Share

Hyperlink (Requires login)

https://analytics-test.ritis.org/suite/#/trend-map/?uuid=0510d4bf-5965-4e70-b4bd-e8f3dc94b04d

options

or

Embed title

I-495 during Snowmageddon

Video size

560x315 px

Update embed link

Embed (Publicly available)

```
<iframe width="560" height="315"
src="https://analytics-test.ritis.org/embed/
trend-map/?uuid=0510d4bf-5965-4e70-b4bd-
e8f3dc94b04d&thresholds=[10,20,30,40,50]
&colors=
[13374484,16729881,16753433,16769049,10
```

424

42

450

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I-495 during Snowmageddon 2011 vs Normal Wednesdays in January
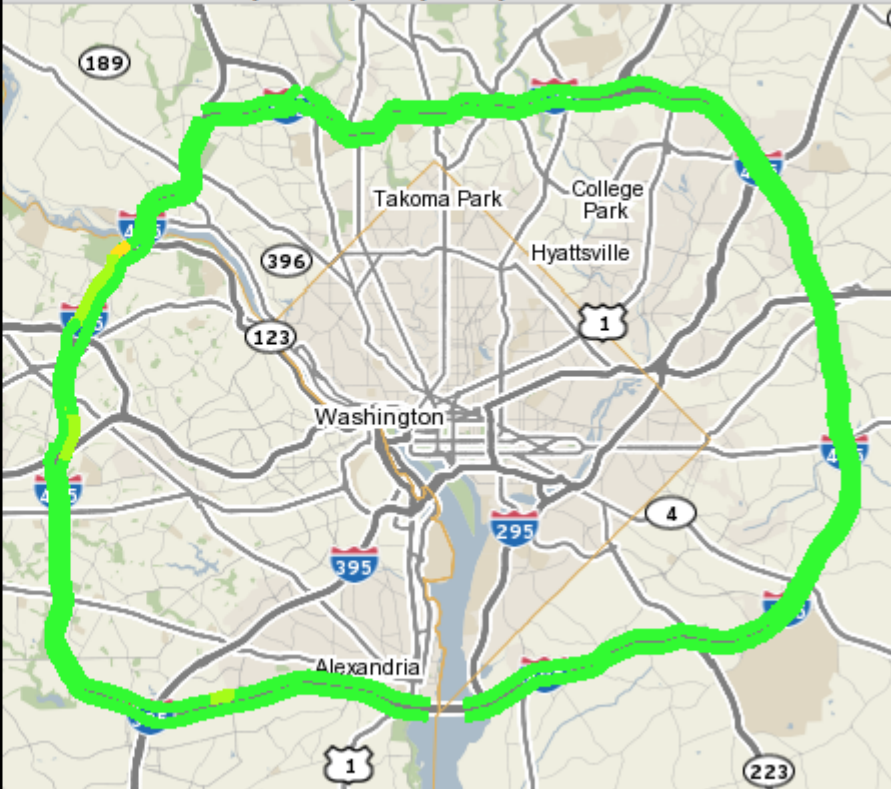
UDC Error Correction

- Identified by PennDOT & VDOT

- Two issues:

  - Zero Speed UDC

  - Statewide or multi-corridor (long road) UDC per-person costs

Zero Speed & Low-Speed UDC

Remaining UDC Issue

- Population and per-person UDC for multi-corridor analysis

  - Will be turned into a working group.

  - 8 Faculty Researchers at UMD are working on this in coordination with TTI and other thought leaders.

December Goals

VPP Suite Roadmap: Our Progress & Future.

June '14
- 25th/75th/min/max values on all charts
- Provide volume data in UDC table
- Faster basemap tiles

Aug. '14
- Hadoop backend work to support future:
  - New bottleneck tracking and ranking algorithm
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- Agency Website Embedded Interactive Trend Maps to support pre-Holiday travel Press Releases
- Configurable Dashboard-style Displays – backend work
- UDC-per-interchange chart (Request from SC DOT)
- Standardize and organize controls within the headers of each existing tool
- Video output for trendmap
- Multivendor Integration Issues
- Revamped Basemap tiles

Dec. '14
- Multi-Vendor Integration Issues
- Congestion Scan enhancement to allow you to join multiple roads together
- New bottleneck algorithm
- Longer date ranges and larger TMC sets
- Incident/event overlays on certain graphics/tables including Bottleneck Ranking
- VPP Suite Forum
- 1st round of Configurable Dashboard display elements
- FAQ updates
- Tutorial Updates

March '15
- Support MAP-21 reporting requirements including dealing with potential issues related to handling multiple thresholds and target-setting for congestion, variable speeds, averaging, etc.
- Evaluate which reports could support ignoring low quality data
- Add enhanced data quality graphics to existing reports
- Configurable Dashboard display elements
- Store results of queries from all tools in a "My Reports" list and send emails when reports are ready so users do not have to leave the suite open for long duration queries
- Scheduling output of Performance Reports and Bottleneck Rankings
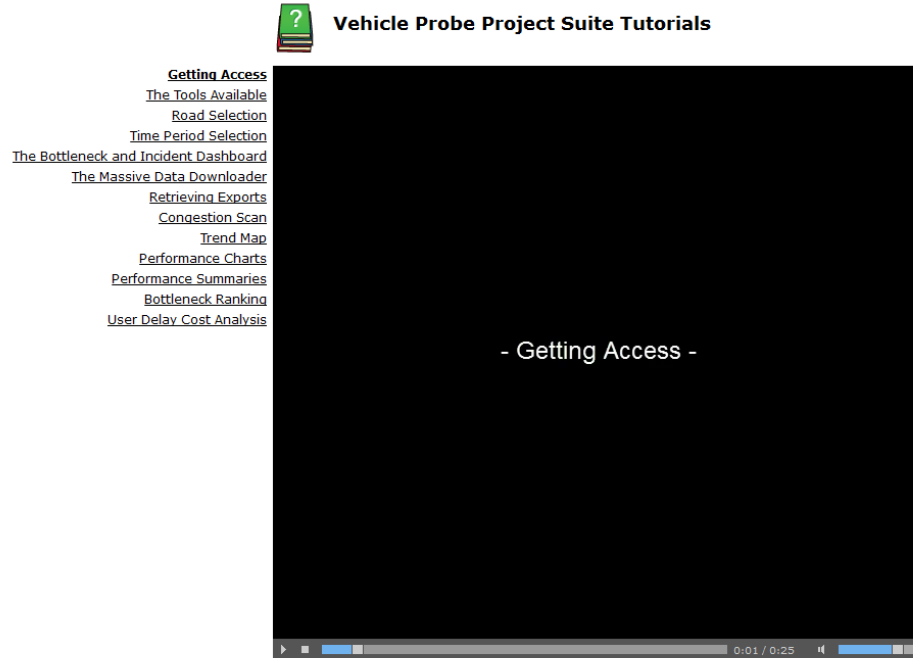
TBD
- Experienced Travel Times
- Graphics to depict % of time at certain speeds (D. Bullock/Purdue PM graphs)
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- Transition away from Flex to support mobile devices and newer web technologies.
- Integrate Treeversity features/functionality into the VPP Suite for bottleneck trend analysis
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- Configurable Dashboard display elements

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Tutorial Upgrades

VPP Tutorials Page

It was requested that the art team come up with a new design for the VPP tutorial page. This is currently what the tutorial page looks like:

Vehicle Probe Project Suite Tutorials

Getting Access
The Tools Available
Road Selection
Time Period Selection
The Bottleneck and Incident Dashboard
The Massive Data Downloader
Retrieving Exports
Congestion Scan
Trend Map
Performance Charts
Performance Summaries
Bottleneck Ranking
User Delay Cost Analysis

- Getting Access -

0:01 / 0:25

VPP Tutorials Page

This is the solution we came up with. Having a side menu that displays video thumbnails, titles and brief summaries of each video. Though not shown in this design, the currently playing video would be highlighted in the side menu.

It was suggested that we include some sort of header to this page so the user can get some context as to where they are.
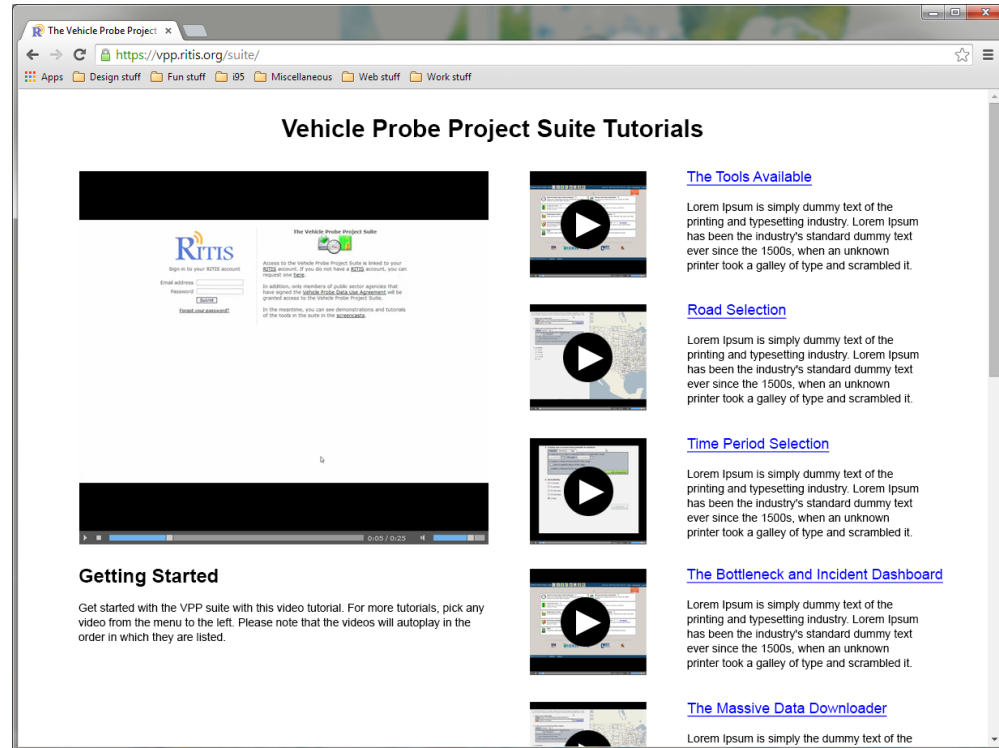
FAQ Upgrades

VPP FAQs Page

The side menu we are suggesting for the tutorial page would also lend itself well to the FAQs page. We could move the top level links to a menu on the side which would in turn open the link content in the main portion of the page. It will utilize space better.

We would also include a header like suggested for the tutorial page.

Top level link we would move to the side menu

Content that would display in the main portion of the page.

Vehicle Probe Project Suite
Frequently Asked Questions

General Information

Where can I learn how to use each of the tools?

Why does a portion of my road not have TMCs?

Why does my TMC on RITIS's map look different from that on another?

Bottlenecks

How are bottleneck conditions tracked?

Performance Measures (Buffer Index, Planning Time Index, etc.)

How are buffer index, planning time index, and travel time index computed?

How are TMC codes lengths taken into consideration when calculating performance measures?

How often are performance measures computed?

User Delay Cost Analysis

How are user delay cost calculations performed?

User delay calculations are performed hourly at the TMC level, then aggregated across your selected geographic region for each day in your selected date range.

Several parameters can be modified when requesting a user delay cost report that will affect the calculations.

Costs

Using vehicle costs from Texas Transportation Institute ♻
  Passenger: 2014 - $16.79

  Commercial: 2014 - $86.81

Passenger and commercial values of time may be provided by your agency. If none are provided, defaults are used from the Texas A&M Transportation Institute. Documentation on what those values of time are derived from may be found on TTI's website. These costs are adjusted annually using the Consumer Price Index.

Percent of commercial and passenger vehicles
Percent of passenger and commercial volume is based on data provided by the DOT on an annual basis. Defaults can be manually set to take the place of any missing percentages.

Passenger: 75% **Commercial:** 25%
☐ Use these default values for all road segments

Selecting the checkbox to use the default values for all road segments will override all agency provided percents.

Defining where delay should be calculated
You can define the delay threshold based on the following options:

• **Historic average speed:** Delay is calculated for all segments whose raw speeds fall below the historic average speed for that segment. The historic average speed is specific to the time of day and day of week for each segment, and is calculated from the previous 2-years of historic speed data. This measure will show delay that is "worse than normal." You are also able to enter an "offset" into this equation. For example, if you enter "Historic average speed minus 10 mph" then the result will be a delay cost for any time when speeds are 10 mph worse than normal congestion for each segment in the set.

• **Free-flow speed:** Delay is calculated for all segments whose raw speeds fall below the free-flow speed for

VPP Suite Forum

🔔 Portal 🔍 Search 👥 Member List 📅 Calendar ❓ Help

Welcome back, ivanovn. You last visited: Today, 02:52 PM Log Out ➔

[Search field] Search

👤 User CP   📋 Mod CP   ⚙ Admin CP   Open Buddy List   View New Posts   View Today's Posts   Private Messages (Unread 0, Total 0)
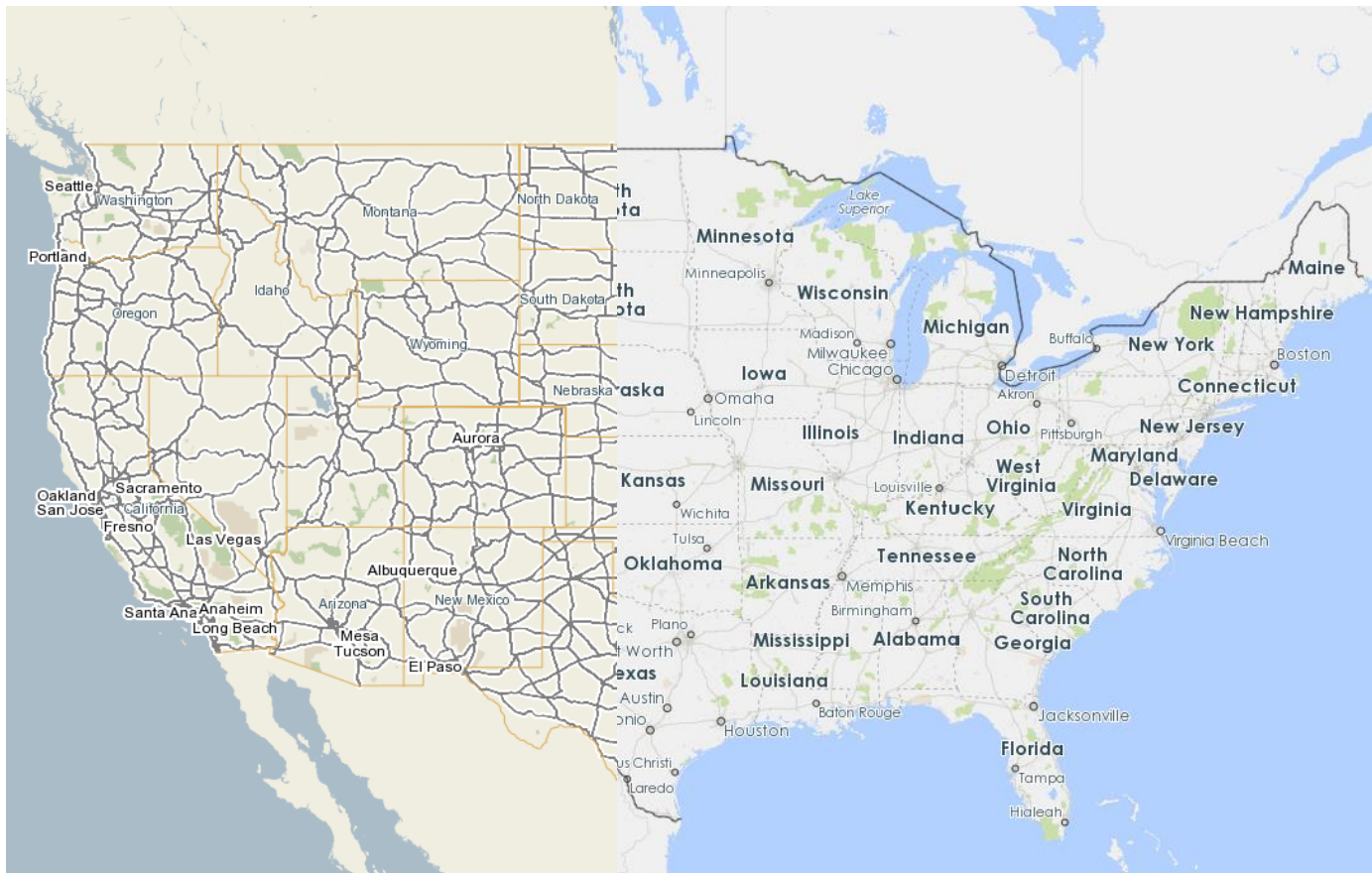
CATT Lab Forum

CATT Lab Forums

Forum	Threads	Posts	Last Post
Announcements CATT Lab announcements.	3	4	**Brown Bag Lunch - Google ...** 09-19-2014, 02:08 PM by apalma7
Lab News and Happenings Product releases, conferences, visits, media and customer outreach, and other Lab related news and happenings.	4	5	**Weekly Summary - 9/15 - 9...** 09-19-2014, 05:11 AM by ivanovn
Technical Discussions and Articles Ask technical questions or share interesting articles, solutions, and lessons learned.	8	12	**The C10M Problem** 09-19-2014, 03:31 PM by apalma7
Lab Trips and Activities Lab organized trips and activities information, pictures, and announcements.	2	2	**Go-Kart Night - 9/25/14** 09-10-2014, 02:59 PM by ivanovn
General Discussion General and non-work related discussions. All discussions should abide by the CATT Lab Policy Manual rules.	2	12	**CATT Gamer IDs** 09-19-2014, 01:24 PM by csiu

⚫ Forum Contains New Posts   ⚪ Forum Contains No New Posts   🔒 Forum is Locked   ↪ Redirect Forum

Generated in 46 ms (72.68% PHP / 27.32% MySQL)
SQL Queries: 10 / Server Load: 0 / Memory Usage: 5.25 MB
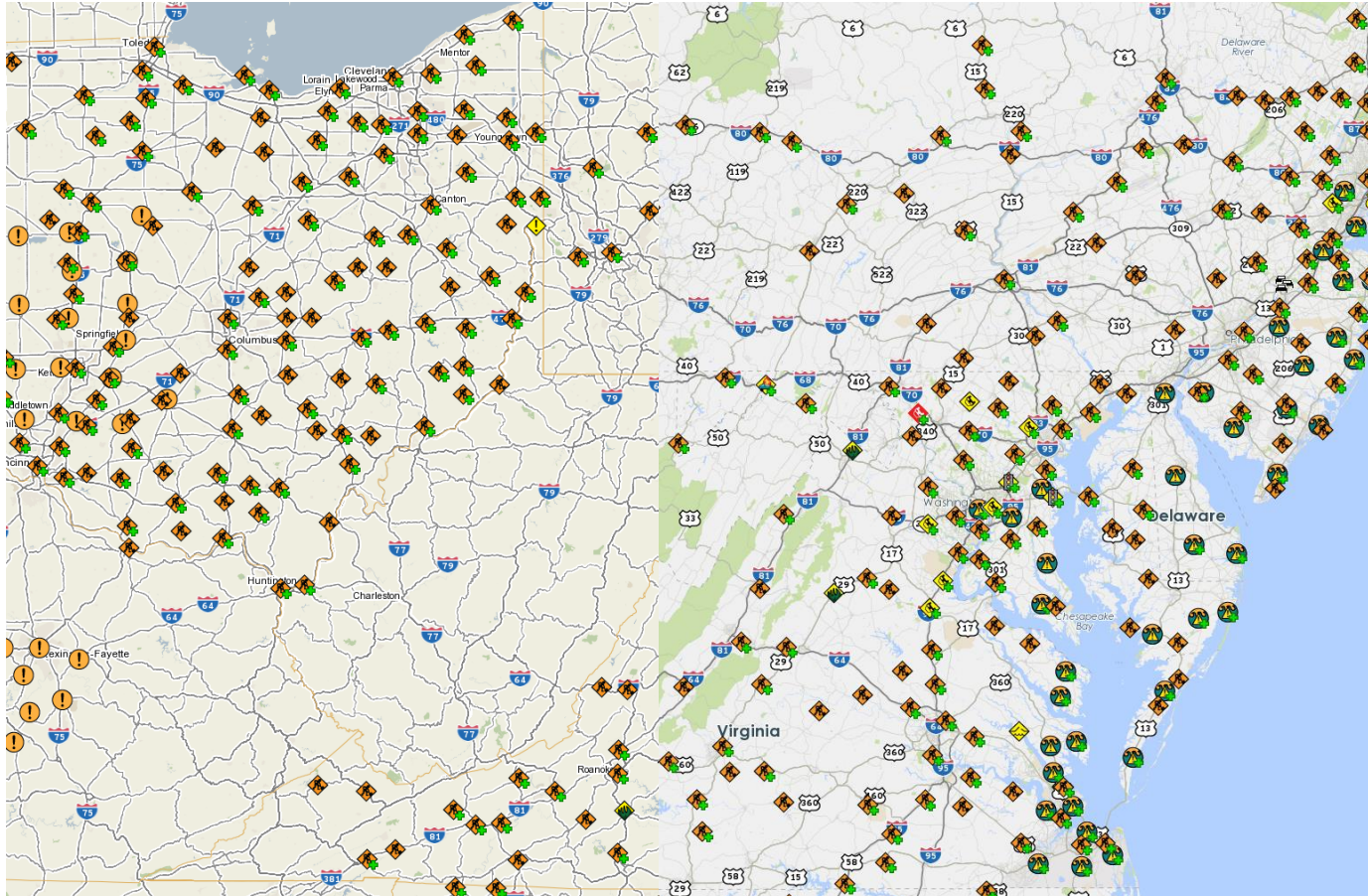[Advanced Details]

Map Tiles

Old

New

Map Tiles

Old

New

Map Tiles

Other Things being addressed:
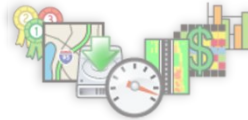The road shield icons and the state labels are too big as you zoom out
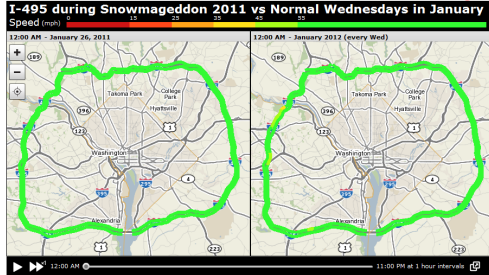
Contributing Agencies Page

Working Group Update
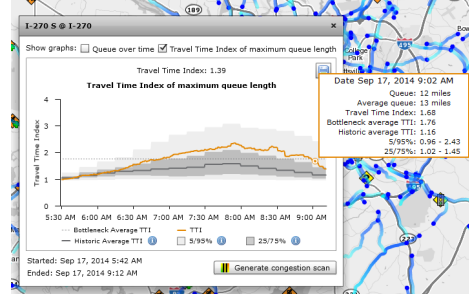
Michael L. Pack
CATT Laboratory

September 24, 2014

Agency Input Session
Focus on New Features

Trendmap UI & Embedding

Percentiles on the Dashboard

Percentiles on Performance Charts

Header Tools: sharing, switching, etc.

Volume Limiting UDC

Volume Displays

September 24, 2014

Funding Discussion

Michael L. Pack
CATT Laboratory

- MAP-21 Prep—watching and waiting
- Funding

Funding Background

- MD SHA
- Coalition Direct
- MCOM I & II
- Michigan DOT
- Missouri DOT
- Ohio DOT
- INRIX
- DHS UASI Funds

> \$3.5 Million Investment

Major Expenses

- Storage Costs
- Power & Networking
- Hardware Maintenance
- Software Maintenance (DB admin/bugs/etc.)
- Software Enhancements
- Basemap data
- Account Administration
- Helpdesk

HELP DESK

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Budgets

- Summer VPP Suite Budget = **$410k**

I-95 VPP TMC Count Growth

TMC Count

Budgeted Storage

(chart: TMC Count vs. years 2008–2014)
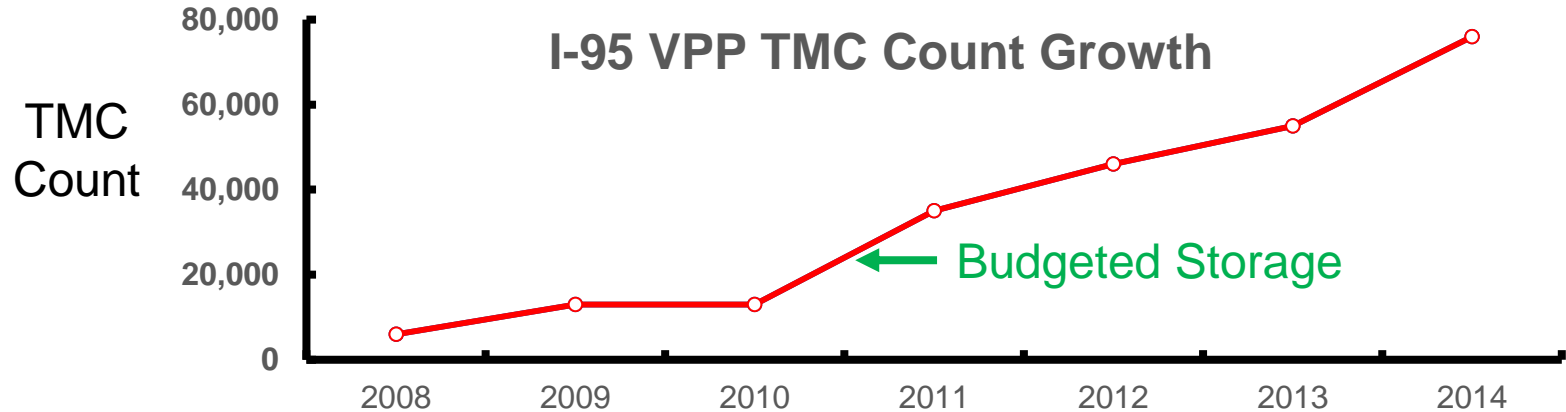
Budget Moving Forward

- Existing funding will be exhausted by Jan, 2015.
  - ~1500 VPP Suite users in the Coalition will be affected.

DOTs			MPOs	Universities	Consultants	Public Safety	Transit
Federal	State	Local					
5%	52%	8%	6%	9%	7%	12%	2%

Budget Moving Forward

Keeping the Suite Alive:

- Per-state annual O&M contribution with:
  - Modest continued growth = $110k/state
  - Bare-bones, zero enhancements = $81k/state

- Both options assume each of the existing state agencies currently procuring data and using the suite would contribute. If not, then costs would need to be revised and/or services would be cut-off.

What's not Covered in the annual O&M (add-on costs)

The $110k/year would NOT cover things like:

- Major Enhancements like
  - XD or Sub-TMC Data Integration
- System Redundancy
- Use Prioritization
- Significant agency-specific data integration
- Major hardware refreshes (every 3-years)

Why Continue Funding?

- Reduces agency costs & increases abilities
- Resources (and costs) shared among all agencies
- We can do more as a team than as individual agencies
- All algorithms are open/transparent
- Agencies provide input on methodologies
- Agency guided feature prioritization
- Data Agnostic
- Developers are engaged in MAP-21
- Dedicated interdisciplinary team of graphic artists, UX specialists, transportation faculty, IT staff, and software developers.

Next Steps & Meeting Wrap Up

George Schoener
I-95 Corridor Coalition

Next User Group Meeting:
Wednesday, January 7, 2015 10AM – 11:30AM

Contact Information

George Schoener

I-95 Corridor Coalition

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geschoener@comcast.net

Joanna Reagle

I-95 Corridor Coalition Support

610.228.0760

jreagle@kmjinc.com

John Allen

NJ DOT & Chair VPP Suite User Group

609.530.2889

john.allen@dot.state.nj.us

VPP Suite questions/feedback

vpp-support@ritis.org

Thank You

I-95 CORRIDOR COALITION

	Federal	State DOT	Local DOT	MPO	University	Consultants	public safety	Transit	Totals
CT		8	5						13
DC		3		18			10		31
DE		6		1					7
FL		102		1	10	48			161
GA		10						1	10
MA		4			7				11
MD		156	77	2	60	19	129		443
NE									0
NC		87	6	3	15	4			115
NH		4		1					5
NJ		80		11	3	2			96
NY		9	8	2		1		2	22
PA		47	1	31	1	4	8		92
RI		8							8
SC		5	1	1		2			9
TN		12							12
VA		214	13	9	27	24	17	14	318
VT					1				
WV									0
Feds	78						3	11	81
Totals =	78	755	111	80	124	104	167	28	1447

www.I95Coalition.org   September 24, 2014