VPP Suite User Group

January 20, 2016

Dial 1-719-867-1571
& enter 725437# at the prompt
Housekeeping Items

• Please call Emily at 917-974-4810 for difficulties with the web or audio application

• This is a virtual meeting experience
  – Please keep your phone muted until asking a question or speaking (press *6 to mute/unmute individual phone lines)
  – Please do not place call “on hold” as your hold music will be heard by the group

• All materials & contact information will be available to participants after the webcast
Welcome & Introductions

Joanna Reagle
For the I-95 Corridor Coalition

Kelly Wells
North Carolina DOT
## Meeting Participants

<table>
<thead>
<tr>
<th>#</th>
<th>Agency</th>
<th>Name(s)</th>
<th>#</th>
<th>Agency</th>
<th>Name(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Baltimore Metropolitan Council</td>
<td>Ed Stylc, Victor Henry</td>
<td>9</td>
<td>Pennsylvania DOT</td>
<td>Scott Benedict</td>
</tr>
<tr>
<td>2</td>
<td>DVRPC</td>
<td>Jesse Buerk, Paul Carafides</td>
<td>10</td>
<td>Richmond Regional MPO</td>
<td>Tiffany Dubinsky</td>
</tr>
<tr>
<td>3</td>
<td>Florida DOT</td>
<td>Russell Allen</td>
<td>11</td>
<td>South Carolina DOT</td>
<td>Paul Thebo</td>
</tr>
<tr>
<td>4</td>
<td>MWCOG/NCRTPB</td>
<td>Wenjing Pu</td>
<td>12</td>
<td>South Jersey TPO</td>
<td>Andrew Tracy, William Schiavi</td>
</tr>
<tr>
<td>5</td>
<td>New Jersey DOT</td>
<td>Sudhir Joshi, Amir Ibrahim, Ira Levinton</td>
<td>13</td>
<td>Virginia DOT</td>
<td>Sanhita Lahiri, Ram Venkatanarayana</td>
</tr>
<tr>
<td>6</td>
<td>North Jersey TPA</td>
<td>Solomon Caviness, Keith Miller, Sutapa Bhattacharjee</td>
<td>14</td>
<td>UMD CATT Lab</td>
<td>John Allen, Michael VanDaniker</td>
</tr>
<tr>
<td>7</td>
<td>New Jersey Turnpike</td>
<td>Henry Eibel</td>
<td>15</td>
<td>KMJ Consulting (Coalition Support)</td>
<td>Joanna Reagle, Emily White</td>
</tr>
<tr>
<td>8</td>
<td>North Carolina DOT</td>
<td>Kelly Wells, Mike Bruff</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please confirm that your line is muted

*6

Thank you!

January 20, 2016
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30am - 10:35am</td>
<td>Welcome &amp; Introductions Agenda</td>
<td>Joanna Reagle, For the I-95 Corridor Coalition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kelly Wells, NCDOT</td>
</tr>
<tr>
<td>10:35am - 10:45am</td>
<td>VPP Suite Probe Data Analytics Forum Update</td>
<td>John Allen, UMD CATT Lab</td>
</tr>
<tr>
<td>10:45am - 11:00am</td>
<td>VPP Suite Features:</td>
<td>John Allen, UMD CATT Lab</td>
</tr>
<tr>
<td></td>
<td>• Requests/Issues/Follow-up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recently Released &amp; Upcoming Improvements</td>
<td></td>
</tr>
<tr>
<td>11:00am - 11:20am</td>
<td>User Group Member Spotlight: Use of the VPP Suite for the Papal Visit to the DC Area</td>
<td>Wenjing Pu, MWCOG</td>
</tr>
<tr>
<td>11:20am – 11:30am</td>
<td>MAP-21: NPRM Status Update</td>
<td>Rich Taylor, FHWA</td>
</tr>
<tr>
<td>11:30am - 11:35am</td>
<td>Focus Group updates</td>
<td>John Allen, UMD CATT Lab</td>
</tr>
<tr>
<td>11:35am - 11:40am</td>
<td>Other Activities:</td>
<td>John Allen, UMD CATT Lab</td>
</tr>
<tr>
<td></td>
<td>• TRB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Outreach</td>
<td></td>
</tr>
<tr>
<td>11:40am - 11:55am</td>
<td>Agency Input Session to learn about what is working &amp; what needs some attention</td>
<td>All</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facilitated by John Allen</td>
</tr>
<tr>
<td>11:55am - noon</td>
<td>Meeting Wrap Up</td>
<td>Joanna Reagle, For the I-95 Corridor Coalition</td>
</tr>
</tbody>
</table>
VPP Suite
Probe Data Analytics Forum Update

John Allen
UMD CATT Laboratory
Probe Data Analytics Forum

5 AGENCY USE CASES - NUMBER OF VIEWS

- PAPAL VISIT PHILADELPHIA, PA: 184 views (POSTED 11.19.15)
- MARYLAND MOBILITY REPORTS: 161 views (POSTED 10.27.15)
- "FORTIFY" TT MONITORING: 207 views (POSTED 10.12.15)
- AMTRAK DERAILMENT: 171 views (POSTED 10.12.15)
- I-95 RECONSTRUCTION PROJECT: 171 views (POSTED 10.12.15)

BY THE NUMBERS...
- VIEWING PERIOD: Oct 12th through Jan 15th
- TOTAL NUMBER OF VIEWS: 894
- MOST VIEWED: “FORTIFY” Travel Time Monitoring - 207 views

IN THE WORKS...
- Link the Forum to VPP Suite
- Post Focus Group work for comment/feedback
- Consider using polling feature to gauge new ideas or suggestions
- Better functionality (attachment type/upload sequence)
- Post “Feature Guides” (under VPP Suite Tutorials)

January 20, 2016
VPP Suite Features
New & Upcoming

John Allen
UMD CATT Laboratory
Requests/Issues/Follow-up
(From previous User Group meetings and Co-chair coordination calls)

• **New Feature**
  > Enhanced Feedback – user feedback option in submit box
    ‒ Share feedback/agency with all users
  > Add a link in VPP Suite to the I95 CC Probe Data Analytics Forum homepage

• **Improved Function**
  > History Dropdown
  > “Remember Me” checkbox added to the sign-in screen
  > Save color settings for Delay by TMC (UDC)
  > Locking multiple tooltips/Tooltip Summary
    ‒ Bottleneck Ranking/Congestion Scan

• **Misc.**
  > Ira Levinton ( NJDOT ) to provide a list of questions to the Lab
  > Improve the posting of attachments in the Probe Data Analytics Forum
    ‒ Add pdf file type; fix page upload sequencing

- Recent ticketed item for delivery and deploy
## Deployment Status Table

### In the Works (VPP Suite features, functions and fixes)

<table>
<thead>
<tr>
<th>Tool/Process</th>
<th>Description</th>
<th>Deployment Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recent Deploys</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Road Congestion Scan</td>
<td>Stitch together multiple roads to define travel routes and corridors for more comprehensive analyses</td>
<td>✓ Deployed 11.30.2015</td>
</tr>
<tr>
<td>Massive Data Downloader (Download by Quality)</td>
<td>Choose to filter out data that does not match your agency's criteria for quality (can also significantly reduce the size of a data export)</td>
<td>✓ Deployed 10.15.2015</td>
</tr>
</tbody>
</table>

| **New Features** | | |
| MAP-21 widgets | Dashboard style widgets that provide graphical and numeric results of MAP-21 performance measure queries | Pending release of NPRM/Final Rule |
| Massive Data Downloader (Enhanced Feedback) | Integrated survey feature that allows input of feedback to the tools right from the tools | In development/TBD |
| VPP Suite | Add a link in VPP Suite to the NCD CC Probe Data Analysis Forum homepage | In development/TBD |

| **Improved Functions** | | |
| Backend Architecture | Greatly improves storage and output processing speeds, allowing for faster results, longer data ranges, and larger geographies | 1st Q 2016 |
| Bottleneck Algorithm/Ranking Tool | An updated algorithm for bottleneck graphing features will significantly improve the usability of the Bottleneck Ranking tool | 1st Q 2016 |
| Advanced Time Selection (Date Range Summary) | A summary of your specified time selection criteria will be provided in the results page for each tool | In development/TBD |
| User Delay Cost (Report Display Options) | Change the color-coding of each cost by using slider bars (and choose your own color palate), display multiple roads (by direction), and; choose what display tabs to be exported to Excel | In development/TBD |

| **Bug Fixes/Misc.** | | |
| Congestion Scan | Incorrect label on Congestion Scan output | In development/TBD |
VPP Suite – Recently Deployed Features

Deployed (11.30.15)

- **Multi-road Congestion Scan**
  - Define travel routes (commuter, recreational, goods movement)
  - Compare alternate route performance (speeds, travel times, etc.)
  - Locate “hotspots”, bottlenecks
  - Better develop projects/strategies (ITS, ICM, etc.)
  - New Feature Guide helps you get up and running fast!
    - See “New Features” tab on the I-95 Corridor Coalition’s VPP Suite home page
    - Also available in the Forum under “VPP Suite Tutorials”
VPP Suite – **BIG** Function Improvement on the Way

**Coming Soon** (Deploy ETC Q1 2016)

- **Backend Framework (Raptor)**
  - Will substantially improve tool performance:
    - Greater speed
    - Longer date ranges
    - Larger geographies
  - In testing

**Example:** To generate a User Delay Cost Report for ALL of North Carolina and for ALL of 2014 would take 6 weeks.

Now it will take ONLY 2 HOURS!
User Group Member Spotlight

Use of the VPP Suite for the Papal Visit to the DC Area

Wenjing Pu
MWCOG
Papal Visit Transportation Impacts in the Washington Region

Vehicle Probe Project (VPP) Suite User Group

Wenjing Pu
wpu@mwcog.org

January 20, 2016
Introduction

• Pope Francis visited Washington, DC
  • September 22, Tuesday, 4pm: Arrival in DC
  • September 23, Wednesday, Full day stay in DC
  • September 24, Thursday, 4 pm: Departure for New York

• Different travel conditions
  • Highways, and
  • Major transit systems

• This analysis quantified the differences between the week of the Papal visit vs. week preceding
  • Weekly: 9/21-9/25 vs. 9/14-9/18
  • Daily: e.g., Wednesdays: 9/23 vs. 9/16
  • Hourly: 8 am on 9/23 vs. 8 am on 9/16 (only for freeways volume & congestion)

• Utilized data immediately available after the Papal visit, caveats exist.
Data Sources

• Freeway Volume
  • The FHWA's Transportation Technology Innovation and Demonstration (TTID) Program
  • New stakeholder application: https://trafficsensors.ext.here.com

• Freeway Speed
  • INRIX data provided by the I-95 Vehicle Probe Project (VPP)
  • VPP Suite developed by the CATT Lab of the University of Maryland

• Transit Ridership
  • Metrorail
  • Metrobus
  • RideOn, TheBus, ART, DASH, Fairfax Connector, PRTC
Weekly Changes

Weekly Average Changes of The Week of Papal Visit Compared to the Week Preceding

- Freeway Volume: -1%
- Freeway Congestion: -5%
- Freeway Unreliability: -14%
- Transit Ridership: -7%

**Freeway Congestion** is measured by Travel Time Index (= Actual Travel Time / Free flow TT).

**Freeway Unreliability** is measured by Planning Time Index (= 95th percentile TT / Free flow TT).
Daily Changes

Daily Average Changes of The Week of Papal Visit Compared to the Week Preceding

Mon.  Tue.  Wed.  Thu.  Fri.
Freeway Volume  Freeway Congestion  Freeway Unreliability  Transit Ridership
Daily Changes – A Closer Look at Transit

Transit Ridership Changes of The Week of Papal Visit Compared to the Week Preceding

<table>
<thead>
<tr>
<th>Day</th>
<th>Metrorail</th>
<th>Metrobus</th>
<th>Other Buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>4%</td>
<td>-1%</td>
<td>-3%</td>
</tr>
<tr>
<td>Tuesday</td>
<td>-1%</td>
<td>-1%</td>
<td>-4%</td>
</tr>
<tr>
<td>Wednesday</td>
<td>-5%</td>
<td>-20%</td>
<td>-19%</td>
</tr>
<tr>
<td>Thursday</td>
<td>-12%</td>
<td>-10%</td>
<td>-10%</td>
</tr>
<tr>
<td>Friday</td>
<td>-1%</td>
<td>-3%</td>
<td>-2%</td>
</tr>
</tbody>
</table>
Hourly Changes – Freeway Volume

Hourly Changes of Traffic Volume on A Typical Freeway Section for the Week of the Papal Visit Compared to the Week Preceding

Monday | Tuesday | Wednesday | Thursday | Friday

Difference in Volume (veh/hr)

% Difference

January 20, 2016
Hourly Changes – Freeway Congestion

Hourly Changes of Freeway Congestion for the Week of the Papal Visit Compared to the Week Preceding

Difference in Travel Time Index

% Difference

January 20, 2016
2% Volume Reduction, 27% Congestion Decline

This volume – congestion relationship shows the effectiveness that travel demand management can have in combating congestion.
Congestion Maps – Wednesday 8:00-9:00 am
Congestion Maps – Wednesday 5:00-6:00 pm
Congestion Maps – Thursday 8:00-9:00 am
Congestion Maps – Thursday 5:00-6:00 pm
Travel Times – Inbound, AM Peak Hour, Inside Beltway

Inbound Travel Time Comparison on Selected Freeways Inside the Beltway in Morning Peak Hour (8:00-9:00 am)

<table>
<thead>
<tr>
<th>Freeway</th>
<th>Travel Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-395</td>
<td>44</td>
</tr>
<tr>
<td>MD/DC-295 Inside Beltway</td>
<td>32</td>
</tr>
<tr>
<td>I-295</td>
<td>24</td>
</tr>
<tr>
<td>I-66 Inside Beltway</td>
<td>21</td>
</tr>
<tr>
<td>I-395 HOV</td>
<td>18</td>
</tr>
</tbody>
</table>

- **Blue bars**: Average of Wed. & Thu. in the week preceding
- **Orange bars**: Average of Wed. & Thu. in the week of Papal visit

January 20, 2016
Travel Times – Outbound, PM Peak Hour, Inside Beltway

Outbound Travel Time Comparison on Selected Freeways Inside the Beltway in Afternoon Peak Hour (5:00-6:00 pm)

- I-295
  - Average of Wed. & Thu. in the week preceding: 30 minutes
  - Average of Wed. & Thu. in the week of Papal visit: 9 minutes
- MD/DC-295 Inside Beltway
  - Average of Wed. & Thu. in the week preceding: 27 minutes
  - Average of Wed. & Thu. in the week of Papal visit: 13 minutes
- I-395
  - Average of Wed. & Thu. in the week preceding: 24 minutes
  - Average of Wed. & Thu. in the week of Papal visit: 13 minutes
- I-395 HOV
  - Average of Wed. & Thu. in the week preceding: 11 minutes
  - Average of Wed. & Thu. in the week of Papal visit: 10 minutes
- I-66 Inside Beltway
  - Average of Wed. & Thu. in the week preceding: 10 minutes
  - Average of Wed. & Thu. in the week of Papal visit: 9 minutes

January 20, 2016
Travel Times – Inbound, AM Peak Hour, Outside Beltway

Inbound Travel Time Comparison on Selected Freeways Outside the Beltway in Morning Peak Hour (8:00-9:00 am)

- I-270 (I-370 - Beltway)
- I-66 (VA-286 - Beltway)
- MD-295 (PG Co. Line - Beltway)
- I-95 (PG Co. Line - Beltway)
- VA-267 (VA-28 - Beltway)
- I-95 (VA-123 - Beltway)
- I-95 HOV (VA-123 - Beltway)
- US-50 (US-301 - Beltway)

- Average of Wed. & Thu. in the week preceding
- Average of Wed. & Thu. in the week of Papal visit

January 20, 2016
Travel Times – Outbound, PM Peak Hour, Outside Beltway

Outbound Travel Time Comparison on Selected Freeways Outside the Beltway in Afternoon Peak Hour (5:00-6:00 pm)

<table>
<thead>
<tr>
<th>Freeway</th>
<th>Average of Wed. &amp; Thu. in the week preceding</th>
<th>Average of Wed. &amp; Thu. in the week of Papal visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-66 (VA-286 - Beltway)</td>
<td>41</td>
<td>23</td>
</tr>
<tr>
<td>I-95 (VA-123 - Beltway)</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>VA-267 (VA-28 - Beltway)</td>
<td>19</td>
<td>14</td>
</tr>
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<td>MD-295 (PG Co. Line - Beltway)</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>I-95 (PG Line - Beltway)</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Co.I-270 (I-370 - Beltway)</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>US-50 (US-301 - Beltway)</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>I-95 HOV (VA-123 - Beltway)</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

January 20, 2016

National Capital Region Transportation Planning Board

Metropolitan Washington Council of Governments
Conclusions

- Traffic volume on freeways for the five days of the week of the Papal visit was only 1 percent down compared to the week preceding, but traffic congestion was relieved by 5 percent, and travel time reliability improved by 14 percent.

- On Wednesday and Thursday, September 23-24, the days of the Pope’s public events in Washington, freeway volume declined 4 percent compared to the same time one week earlier, freeway congestion decreased 10 percent and travel time reliability improved more than 30 percent.

- During peak hours on September 23-24, a 2 percent reduction in freeway volume generally led to a 27 percent decline in freeway congestion, showing the effectiveness of that travel demand management can have in combating congestion.

- Transit ridership declined 7 percent in the week of Papal visit and an average of 17 percent during September 23-24.
System Performance NPRM Update
Rich Taylor, FHWA
Focus Group Updates

John Allen
UMD CATT Laboratory
VPP Suite – Focus Groups Status

• Performance Measures Summary Focus Group
  › Kick-off meeting held Tuesday, January 19, 2016, via webcast

• Bottleneck Working Group
  › To test the updated Bottleneck Ranking algorithm and tool features and functions when released
Focus Group Meeting Highlights

Performance Summary Report Templates

• Kick-off meeting held 01.19.16

• Discussed:
  › The Goal
  › The Team
  › Guidance
  › Logistics
  › User Group Interaction
  › Deliverables (product)

• Developed a Plan of Action

• Will provide you with more info soon
Other Activities

John Allen
UMD CATT Laboratory
Jesse Buerk’s Poster Session
(Using the Suite to determine travel time impacts caused by the Amtrak Derailment in Philadelphia)

Way to go, Jesse!
VPP Suite – Outreach

- VPP/VPP Suite Newsletter
  - Distributed November 3, 2015

- I-95 CC VPP Update email
  - How-to Guide for recently deployed Multi-road Congestion Scan December 22, 2015
Agency Input Session

Facilitated by
John Allen, UMD CATT Laboratory
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?
Next Steps & Meeting Wrap-up

Joanna Reagle
*For the I-95 Corridor Coalition*

Next User Group Meeting:

**Thursday, April 21, 2016**

10:30am to noon
Contact Information

John Allen  
UMD CATT Lab  
215.666.3057  
jallen35@umd.edu

Joanna Reagle  
I-95 Corridor Coalition Support  
610.228.0760  
jreagle@kmjinc.com

VPP Suite questions/feedback  
vpp-support@ritis.org
Thank you!