
National Capital Region Congestion Report

4th Quarter 2013
(DRAFT)

National Capital Region
Transportation Planning Board

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Release date: TBD

Available: www.mwcog.org/congestion (after finalization)

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Regional Summary

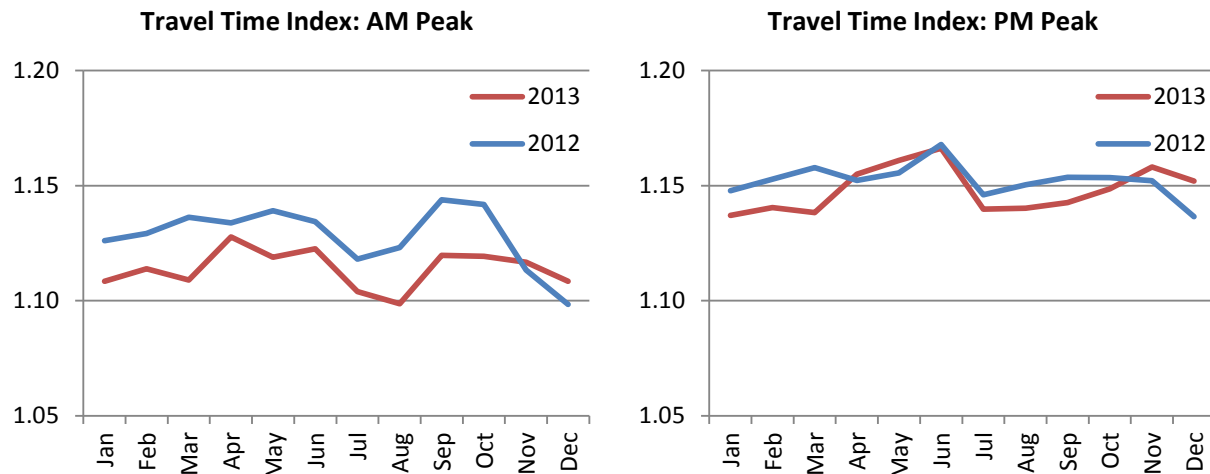
Congestion

Overall: peak periods congestion in the 4th quarter 2013 was **slightly up (0.1%)** compared to a year ago.

AM Peak: congestion in the 4th quarter 2013 was **slightly down (-0.3%)** compared to a year ago.

PM Peak: congestion in the 4th quarter 2013 was **slightly up (0.5%)** compared to a year ago.

Figure 1: Peak period Travel Time Index by month



Note: AM Peak is 6:00-10:00 am, and PM Peak is 3:00-7:00 pm, Monday through Friday. Data cover all Interstates, parkways, express highways, and the majority of US and state routes in the TPB member jurisdictions, totaling about 4,300 directional miles.

Travel Time Index

Travel Time Index (TTI), defined as the ratio of actual travel time to free flow travel time, measures the intensity of congestion. The higher the index, the more congested traffic conditions it represents, e.g., TTI = 1.00 means free flow conditions, while TTI = 1.30 indicates the actual travel time is 30% longer than the uncongested travel time.

For more information, please refer to [Travel Time Reliability: Making It There On Time, All The Time](#), a report published by the Federal Highway Administration and produced by the Texas Transportation Institute with Cambridge Systematics, Inc.

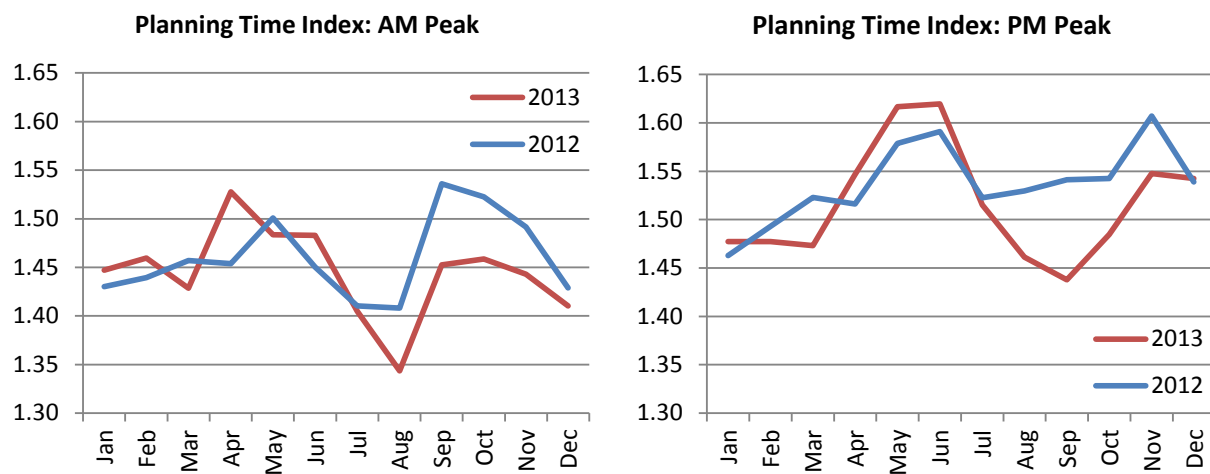
Reliability

Overall: peak periods reliability in the 4th quarter 2013 was **moderately better (2.7%)** than a year ago.

AM Peak: reliability in the 4th quarter 2013 was **moderately better (3.0%)** than a year ago.

PM Peak: reliability in the 4th quarter 2013 was **moderately better (2.4%)** than a year ago.

Figure 2: Peak period Planning Time Index by month



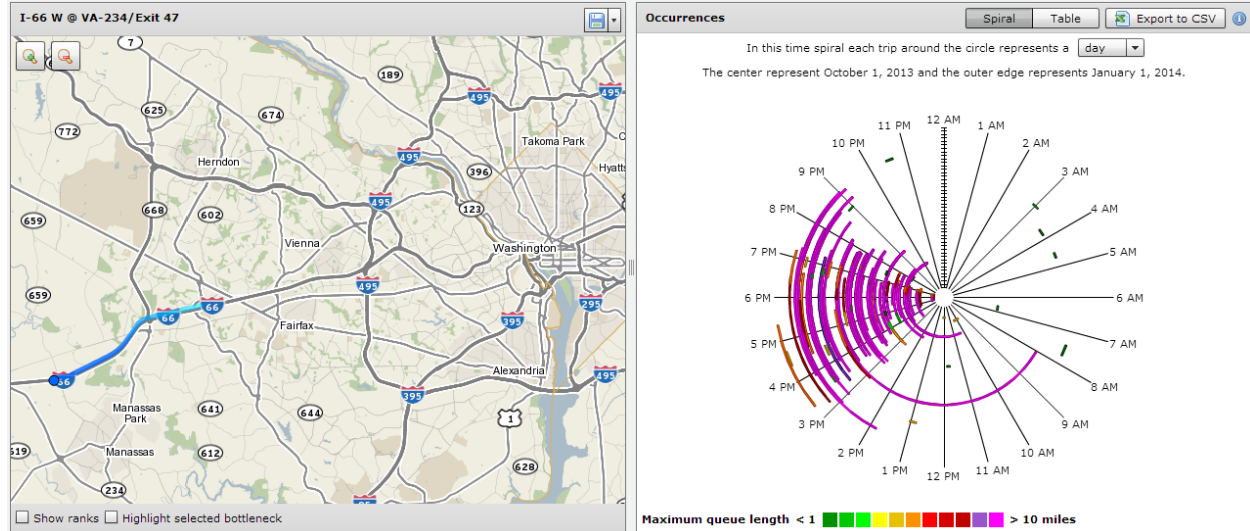
Note: AM Peak is 6:00-10:00 am, and PM Peak is 3:00-7:00 pm, Monday through Friday. Data cover all Interstates, parkways, express highways, and the majority of US and state routes in the TPB member jurisdictions, totaling about 4,300 directional miles.

Planning Time Index

Planning Time Index (PTI), defined as the ratio of 95th percentile travel time to free flow travel time, measures travel time reliability. The higher the index, the less reliable traffic conditions it represents, e.g., PTI = 1.30 means a traveler has to budget 30% longer than the uncongested travel time to arrive on time 95% of the times (i.e., 19 out of 20 trips), while TTI = 1.60 indicates that one has to budget 60% longer than the uncongested travel time to arrive on time most of the times. For more information, please refer to [Travel Time Reliability: Making It There On Time, All The Time](#), a report published by the Federal Highway Administration and produced by the Texas Transportation Institute with Cambridge Systematics, Inc.

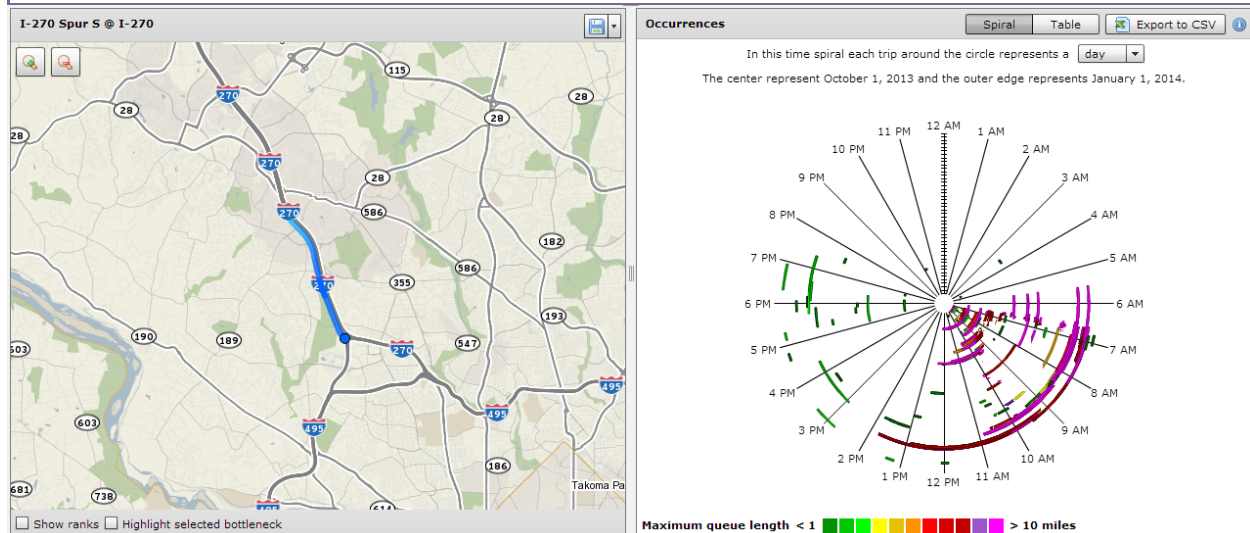
Top 10 Bottlenecks

Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor*
1	I-66 W @ VA-234/Exit 47	2 h 40 m	11.33	122	221,249

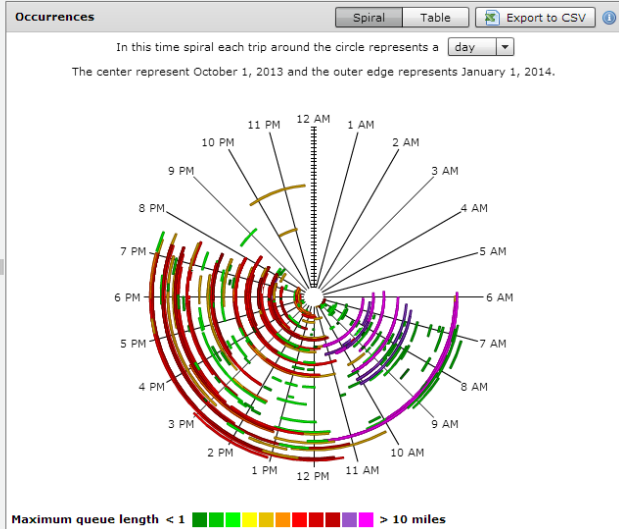
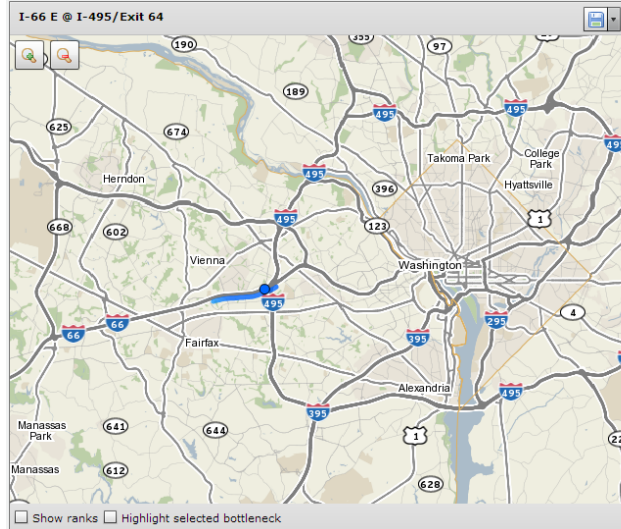


* The Impact Factor of a bottleneck is simply the product of the Average Duration (minutes), Average Max Length (miles) and the number of occurrences.

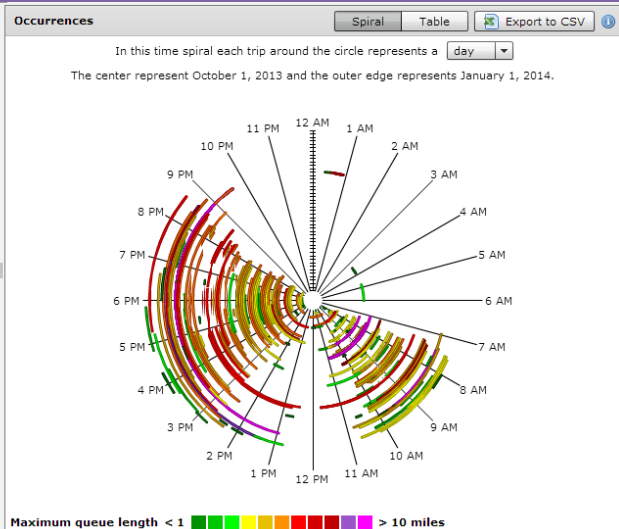
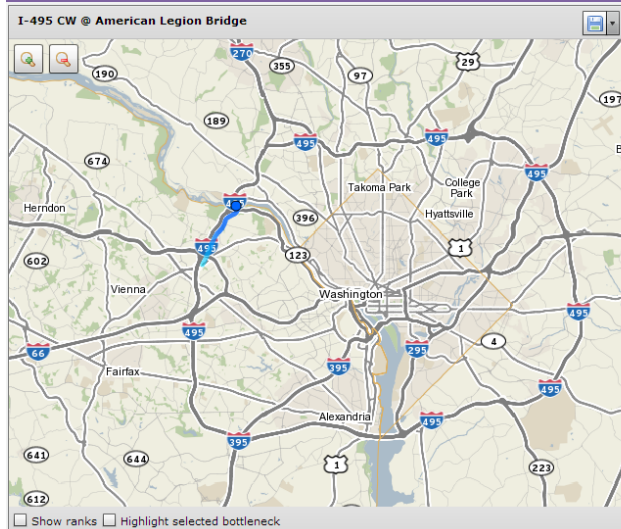
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
2	I-270 Spur S @ I-270	1 h 49 m	7.35	241	192,962



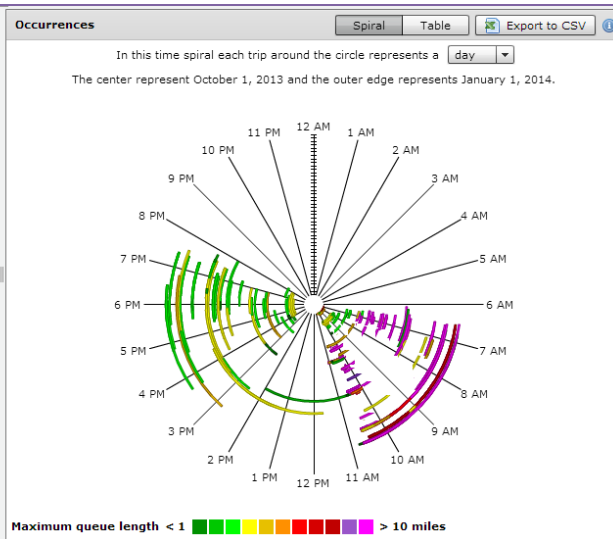
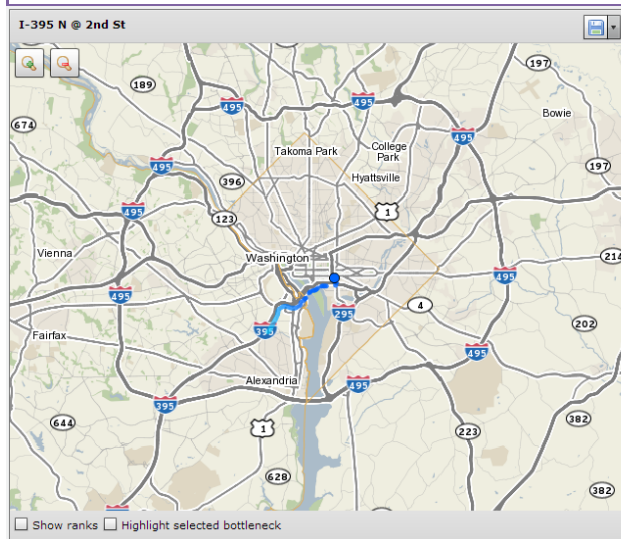
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
3	I-66 E @ I-495/Exit 64	2 h 5 m	5.18	249	161,128



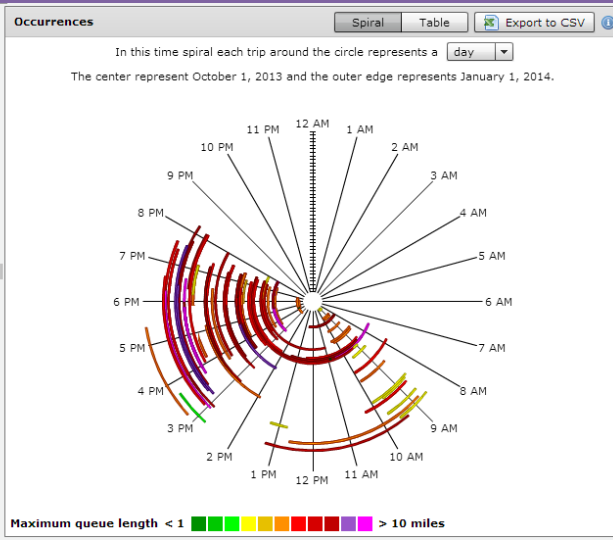
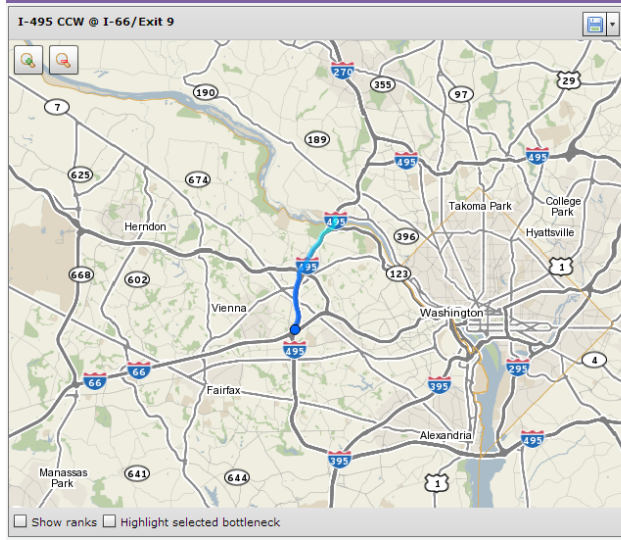
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
4	I-495 CW @ American Legion Bridge	2 h 47 m	4.63	190	146,875



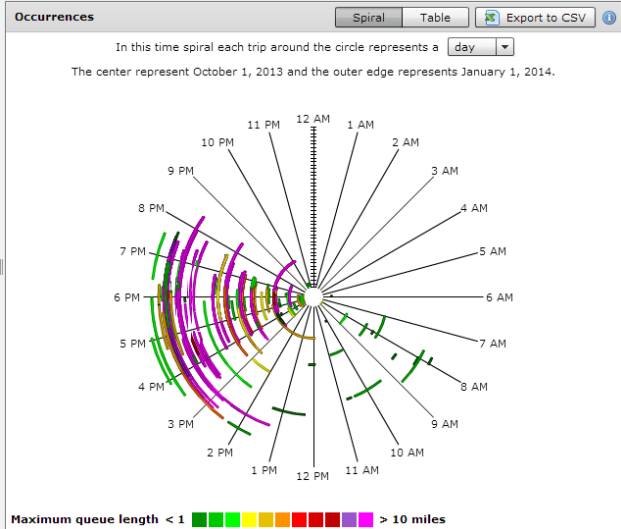
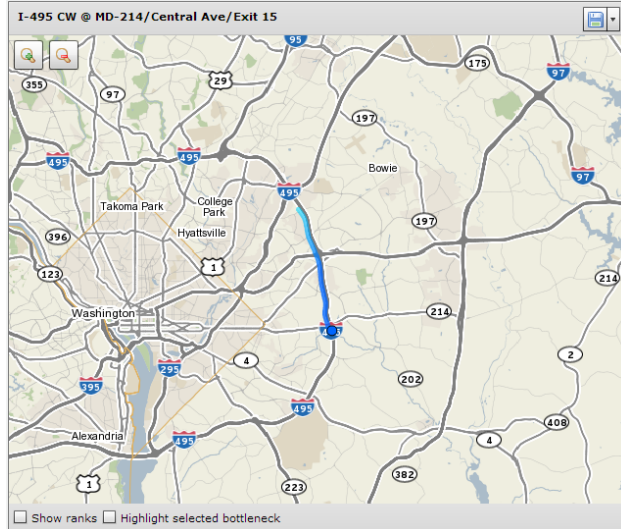
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
5	I-395 N @ 2nd St	2 h 34 m	6.88	129	136,752



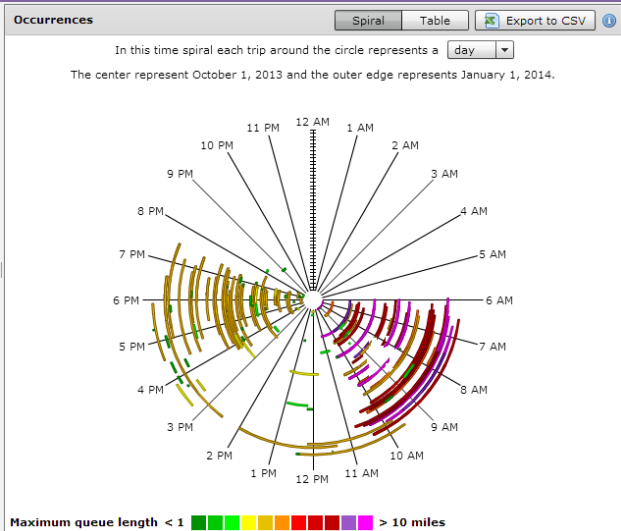
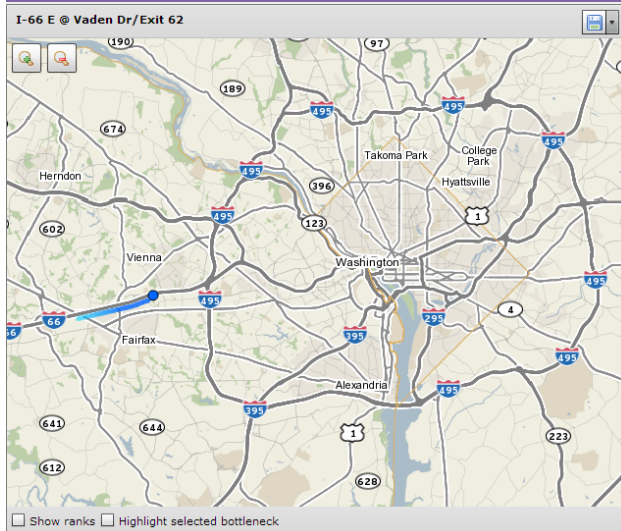
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
6	I-495 CCW @ I-66/Exit 9	2 h 59 m	8.39	90	135,236



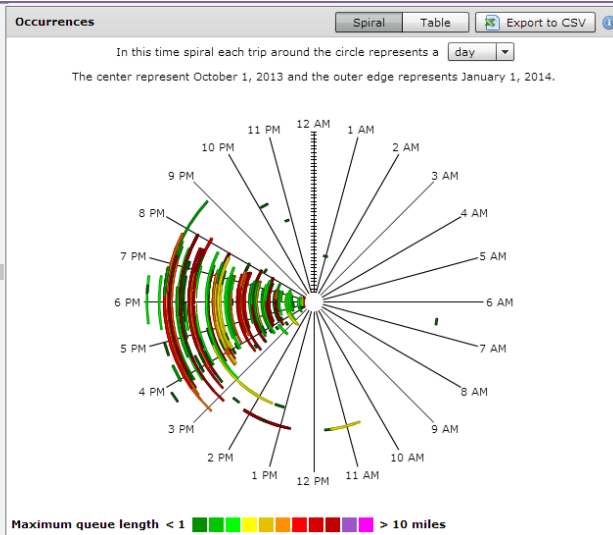
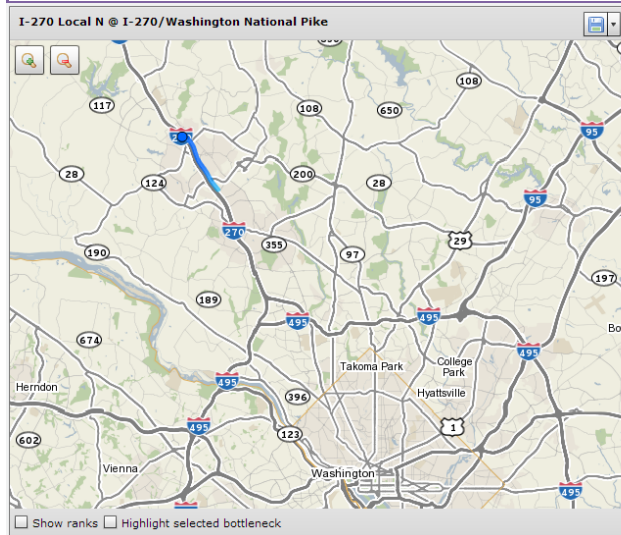
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
7	I-495 CW @ MD-214/Central Ave/Exit 15	2 h 3 m	8.52	129	135,225



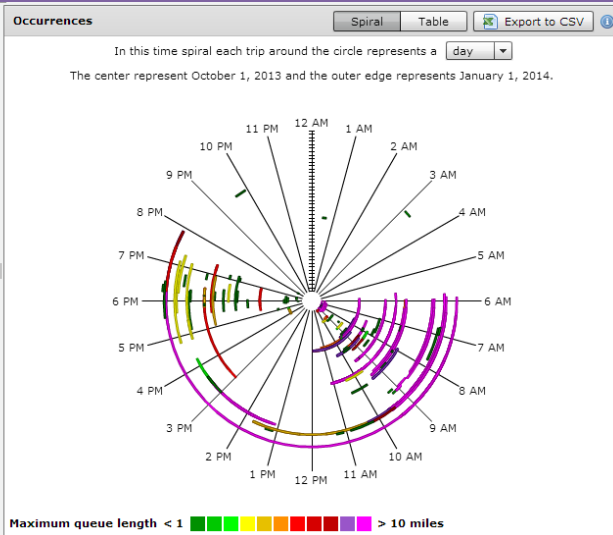
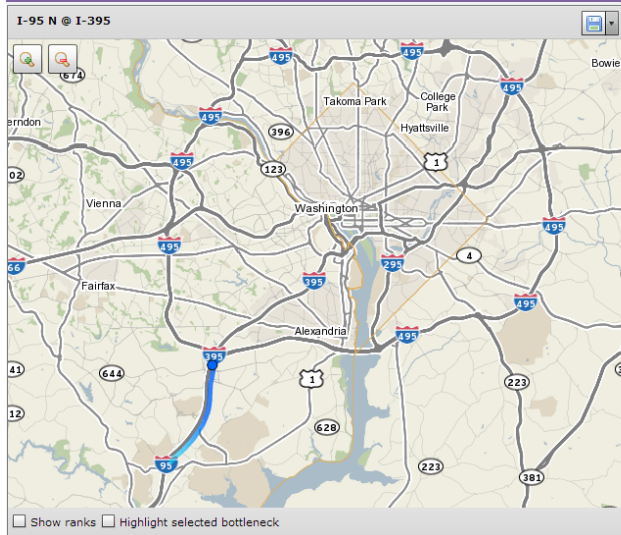
Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
8	I-66 E @ Vaden Dr/Exit 62	1 h 48 m	5.21	156	87,859



Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
9	I-270 Local N @ I-270/Washington National Pike	2 h 6 m	4.28	159	85,730

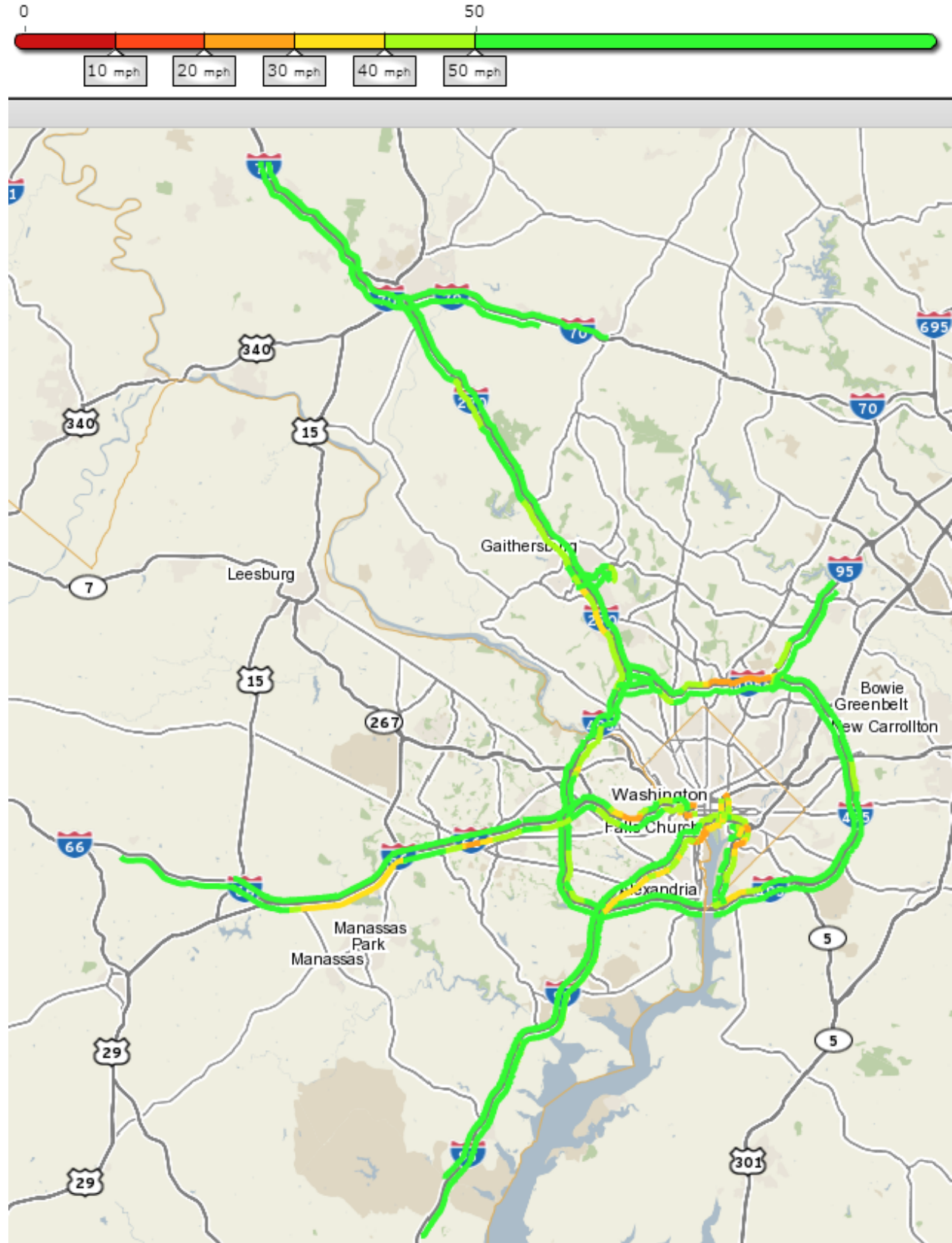


Rank	Location	Average duration	Average max length (miles)	Occurrences	Impact factor
10	I-95 N @ I-395	1 h 38 m	7.94	109	84,822



Congestion Maps

Interstate System Weekday 8:00-9:00 AM Average Speed in 4th Quarter 2013



4th Quarter 2013 Spotlight – Federal Government Shutdown

From October 1 through 16, 2013, the United States federal government entered into a shutdown and approximately 800,000 federal employees were furloughed. This event provided a unique opportunity to investigate the traffic impact of federal employees in the Washington area. Changes in traffic conditions from before to during and to after the shutdown were analyzed regionally and facility-specifically.

[Key findings will be added soon]

Background

Motivation

Inspired by various agency and jurisdictional dashboard efforts around the country (e.g., Virginia Department of Transportation Dashboard), driven by the MAP-21 legislation and the emergent probe-based traffic speed data from the I-95 Corridor Coalition Vehicle Probe Project, this brief report tries to take advantage of the availability of rich data and analytical tools to produce customized, easy-to-communicate, and quarterly updated traffic congestion and travel time reliability performance measures for the Transportation Planning Board (TPB) Planning Area. The goal of this effort is to make the Congestion Management Process “alive” on the TPB website that timely summarizes the region’s congestion and the programs of the TPB and its member jurisdictions that would have an impact on congestion. The higher goal of this report is to help to facilitate performance-based transportation planning and programming process in the National Capital Region.

Targeted Audience

The intended audience of this report includes the TPB, TPB advisory committees, TPB member jurisdictions, other regional stakeholders, transportation planners/engineers and interested citizens.

Coverage

The spatial coverage of this report is limited to the TPB Planning Area. Travel Time Index and Planning Time Index are average results for all Interstates, parkways, express highways, and the majority of US and state routes in the TPB member jurisdictions, totaling about 4,300 directional miles. Top 10 bottlenecks are drawn from all limited-access highways. Congestion Maps show all routes with data available.

Temporally, Travel Time Index and Planning Time Index cover up to the most recent two or three years data that can be traced back to as early as January 2012. Top 10 bottlenecks are only for the reporting quarter.

Reporting

This report is scheduled to release quarterly and the time lag of reporting is expected to be one to three months.

The first two sections, “Regional Summary” and “Top 10 Bottlenecks”, and the last section “Background” will remain stable in terms of the contents, while the third section is a dynamic section and will be filled with appropriate and different quarterly spotlight contents in each report.

Methodology

The peak period Travel Time Index and Planning Time Index by month (Figure 1 and 2), the top 10 bottlenecks, and the Congestion Maps were produced by the I-95 Corridor Coalition Vehicle Probe Project (VPP) Suite developed by the University of Maryland Center for Advanced Transportation Technology Laboratory (CATT Lab) based on the vehicle probe data procured from INRIX, Inc. For more information about the VPP, please refer to

<http://i95coalition.org/i95/VehicleProbe/tabid/219/Default.aspx>. For more information about the VPP Suite, please refer to <https://vpp.ritis.org/suite/>.

The VPP Suite uses the following methodology to track bottlenecks (<https://vpp.ritis.org/suite/fag/#/how-are-bottleneck-conditions-tracked/>):

Bottleneck conditions are determined by comparing the current reported speed to the reference speed for each segment of road. Reference speed values are provided to us for each segment and represent the 85th percentile observed speed for all time periods with a maximum value of 65 mph. If the reported speed falls below 60% of the reference, the road segment is flagged as a potential bottleneck. If the reported speed stays below 60% for five minutes, the segment is confirmed as a bottleneck location. Adjacent road segments meeting this condition are joined together to form the bottleneck queue. When reported speeds on every segment associated with a bottleneck queue have returned to values greater than 60% of their reference values and remained that way for 10 minutes, the bottleneck is considered cleared. The total duration of a bottleneck is the difference between the time when the congestion condition was first noticed (prior to the 5 minute lead in) and the time when the congestion condition recovered (prior to the 10 minute lead out). Bottlenecks whose total queue length, determined by adding the length of each road segment associated with the bottleneck, is less than 0.3 miles are ignored.

