CONGESTION REPORT
4th Quarter 2016

A quarterly update of the National Capital Region's traffic congestion, travel time reliability, top-10 bottlenecks and featured spotlight

January 16, 2018

National Capital Region
Transportation Planning Board

ABOUT TPB

Transportation planning at the regional level is coordinated in the Washington area by the National Capital Region Transportation Planning Board (TPB). Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia, and the District of Columbia, local governments, the Washington Metropolitan Area Transit Authority, the Maryland and Virginia General Assemblies, and nonvoting members from the Metropolitan Washington Airports Authority and federal agencies. The TPB is staffed by the Department of Transportation Planning of the Metropolitan Washington Council of Governments.

CREDITS

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ACCOMMODATIONS

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CONGESTION REPORT

4th Quarter 2016

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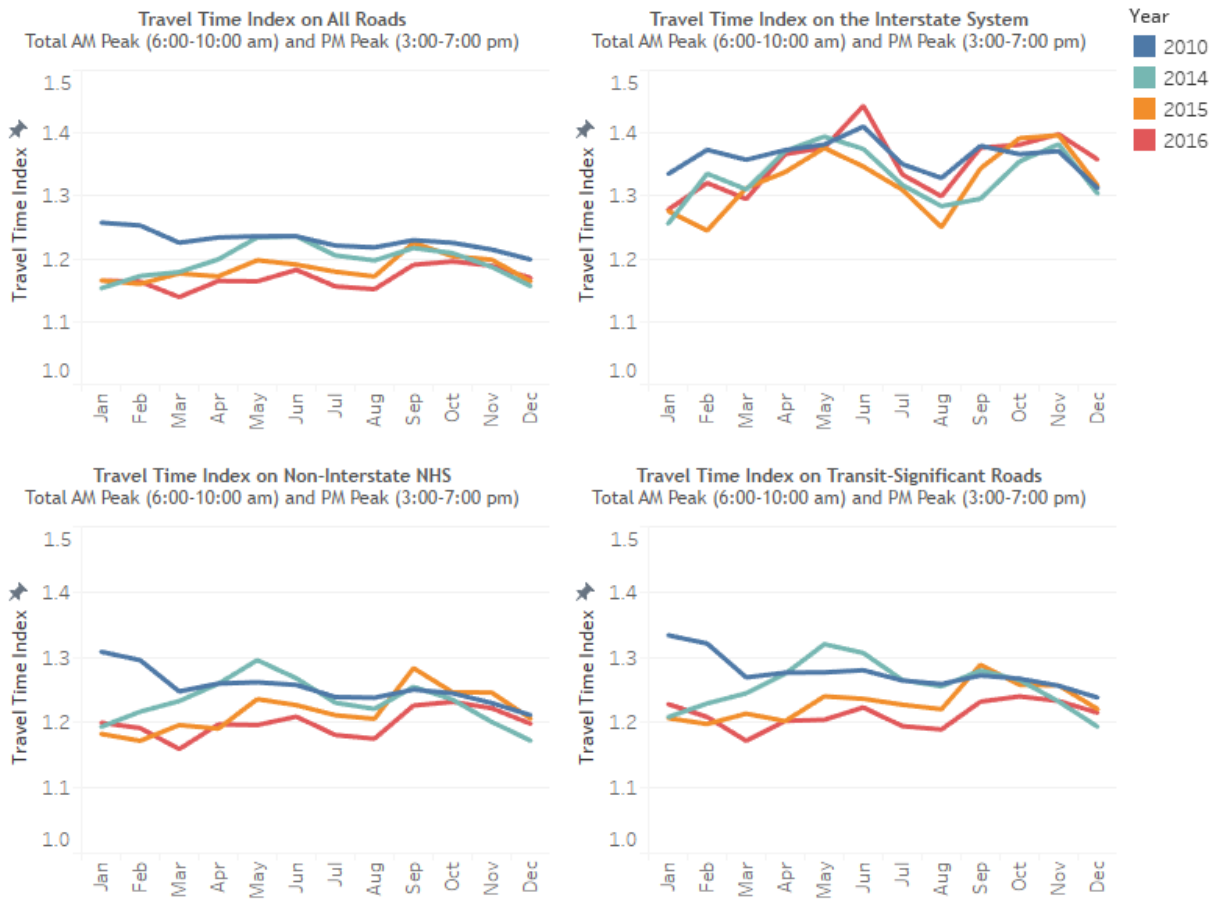
CONGESTION – TRAVEL TIME INDEX (TTI)

Interstate System		
TTI 4th Quarter 2016:	1.38	↑0.8% or 0.01[1]
TTI Trailing 4 Quarters:	1.35	↑2.0% or 0.03[2]
Transit-Significant[4]		
TTI 4th Quarter 2016:	1.23	↓1.3% or -0.02
TTI Trailing 4 Quarters:	1.21	↓1.5% or -0.02
Non-Interstate NHS[3]		
TTI 4th Quarter 2016:	1.22	↓1.3% or -0.02
TTI Trailing 4 Quarters:	1.20	↓1.5% or -0.02
All Roads		
TTI 4th Quarter 2016:	1.18	↓0.4% or -0.004
TTI Trailing 4 Quarters:	1.17	↓1.2% or -0.01

[1] Compared to 4th Quarter 2015; [2]Compared to one year earlier;[3] NHS: National Highway System; [4] See "Background" section.

Figure 1 Monthly Travel Time Index for Total AM peak (6:00-10:00 am) and PM peak (3:00-7:00 pm)



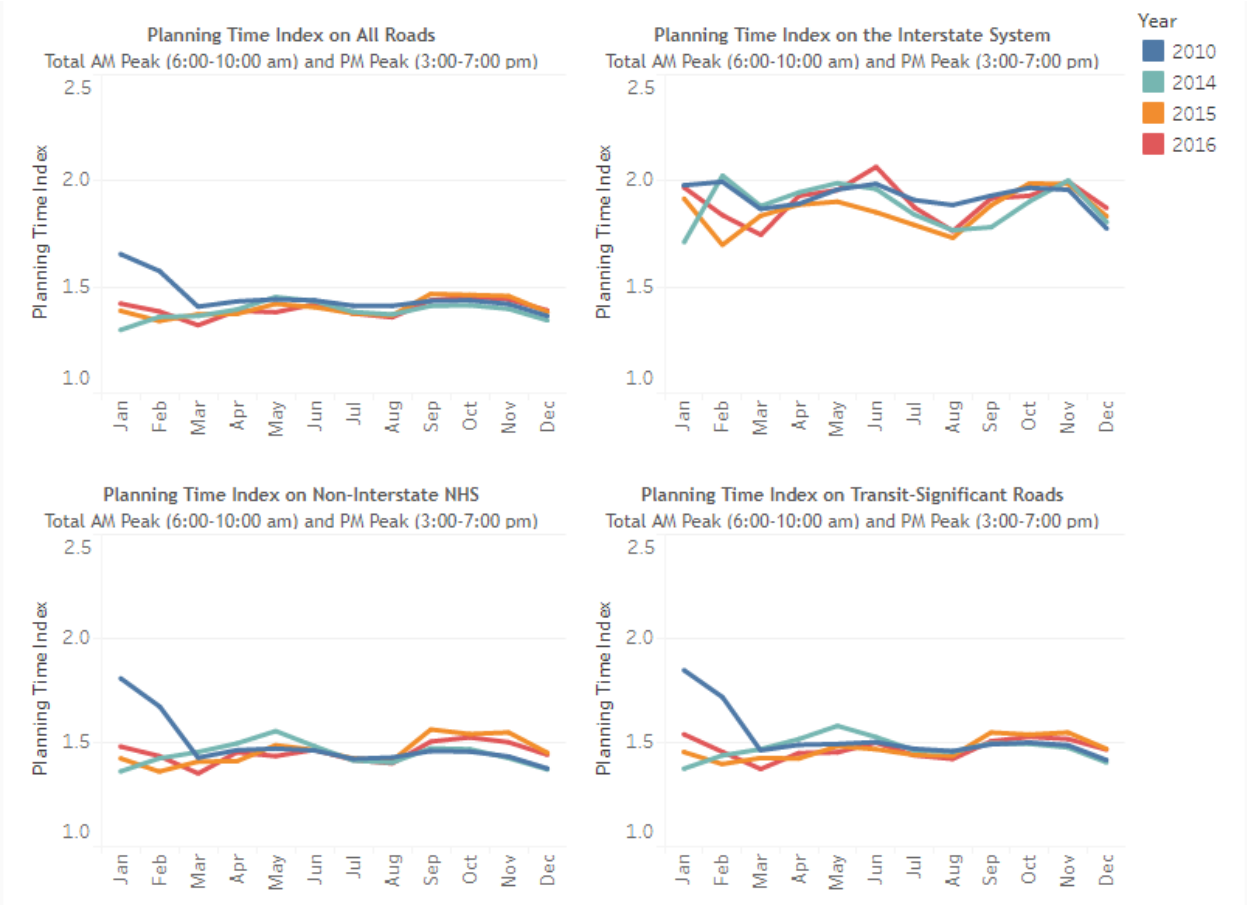
Travel Time Index *(TTI), defined as the ratio of actual travel time to free-flow travel time, measures the intensity of congestion. The higher the index, the more congested traffic conditions it represents, e.g., TTI = 1.00 means free flow conditions, while TTI = 1.30 indicates the actual travel time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

UNR ELIABILITY – PLANNING TIME INDEX (PTI)

Interstate System		
PTI 4th Quarter 2016:	1.93	↓0.1% or -0.002[1]
PTI Trailing 4 Quarters:	1.90	↑2.5% or 0.05[2]
Transit-Significant[4]		
PTI 4th Quarter 2016:	1.50	↓1.0% or -0.02
PTI Trailing 4 Quarters:	1.47	↑0.1% or 0.001
Non-Interstate NHS[3]		
PTI 4th Quarter 2016:	1.49	↓1.6% or -0.02
PTI Trailing 4 Quarters:	1.45	↓0.5% or -0.01
All Roads		
PTI 4th Quarter 2016:	1.43	↓0.4% or -0.01
PTI Trailing 4 Quarters:	1.40	↓0.2% or -0.003

[1] Compared to 4th Quarter 2015;[2]Compared to one year earlier; [3] NHS: National Highway System; [4] See "Background" section.

Figure 2 Monthly Planning Time Index for Total AM peak (6:00-10:00 am) and PM peak (3:00-7:00 pm)

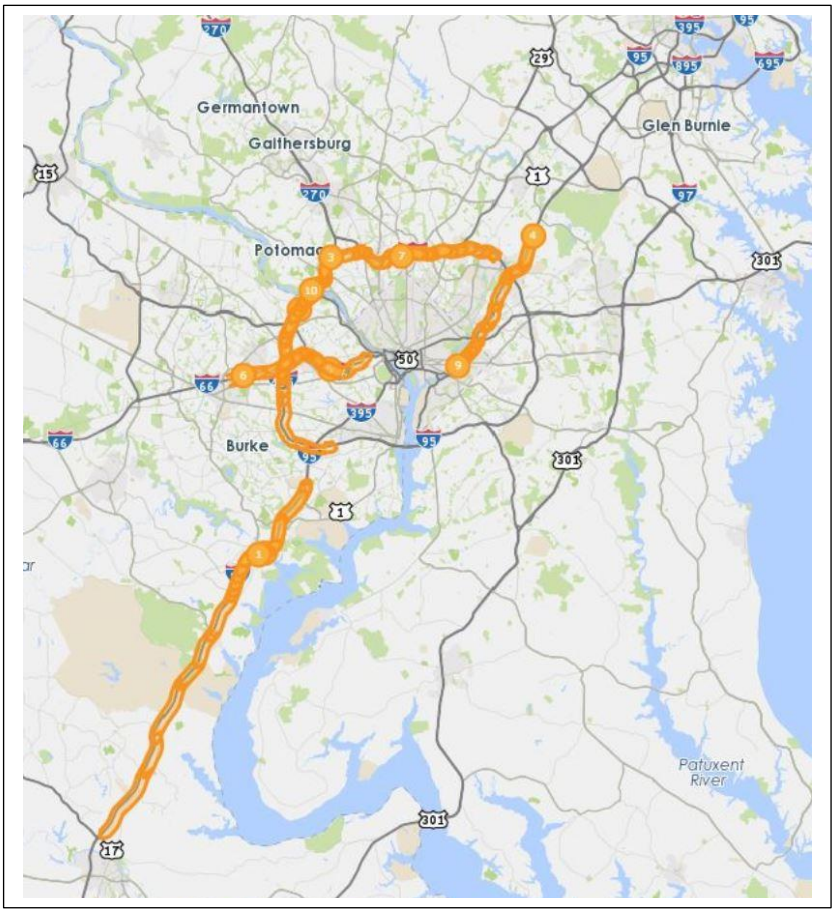


Planning Time Index (PTI), defined as the ratio of 95th percentile travel time to free flow travel time, measures travel time reliability. The higher the index, the less reliable traffic conditions it represents, e.g., PTI = 1.30 means a traveler has to budget 30% longer than the uncongested travel time to arrive on time 95% of the instances (i.e., 19 out of 20 trips).

TOP 10 BOTTLENECKS

Rank (Last Quarter Rank)	Location	Average duration	Average max length (miles)	Total duration	Impact factor
1 (1)*	I-95 S @ VA-123/EXIT 160	7 h 10 m	3.85	27 d 12 h 40 m	142,582
2 (12)	I-495 CCW @ VA-193/GEORGETOWN PIKE/EXIT 13	3 h 29 m	2.46	13 d 08 h 49 m	86,842
3 (7)	I-495 CW @ I-270 SPUR	2 h 30 m	4.33	9 d 14 h 45 m	85,694
4 (2)	BALTIMORE-WASHINGTON PKWY N @ POWDER MILL RD	5 h 57 m	2.76	22 d 20 h 54 m	76,946
5 (5)	I-66 E @ SYCAMORE ST/EXIT 69	6 h 35 m	1.93	25 d 07 h 08 m	72,580
6 (10)	I-66 W @ VADEN DR/EXIT 62	4 h 34 m	1.66	17 d 12 h 20 m	71,900
7 (4)	I-495 CCW @ MD-97/GEORGIA AVE/EXIT 31	3 h 33 m	2.82	13 d 14 h 45 m	71,167
8 (9)	I-95 N @ VA-123/EXIT 160	3 h 24 m	3.3	13 d 01 h 44 m	69,721
9 (3)	DC-295 S @ CAPITOL ST	9 h 09 m	1.26	35 d 02 h 44 m	66,556
10 (3)	I-495 CW @ CLARA BARTON PKWY/EXIT 41	3 h 49 m	3.45	14 d 16 h 13 m	65,484

** See "Bottlenecks" section in the "Background" chapter for ranking variability from quarter to quarter.*



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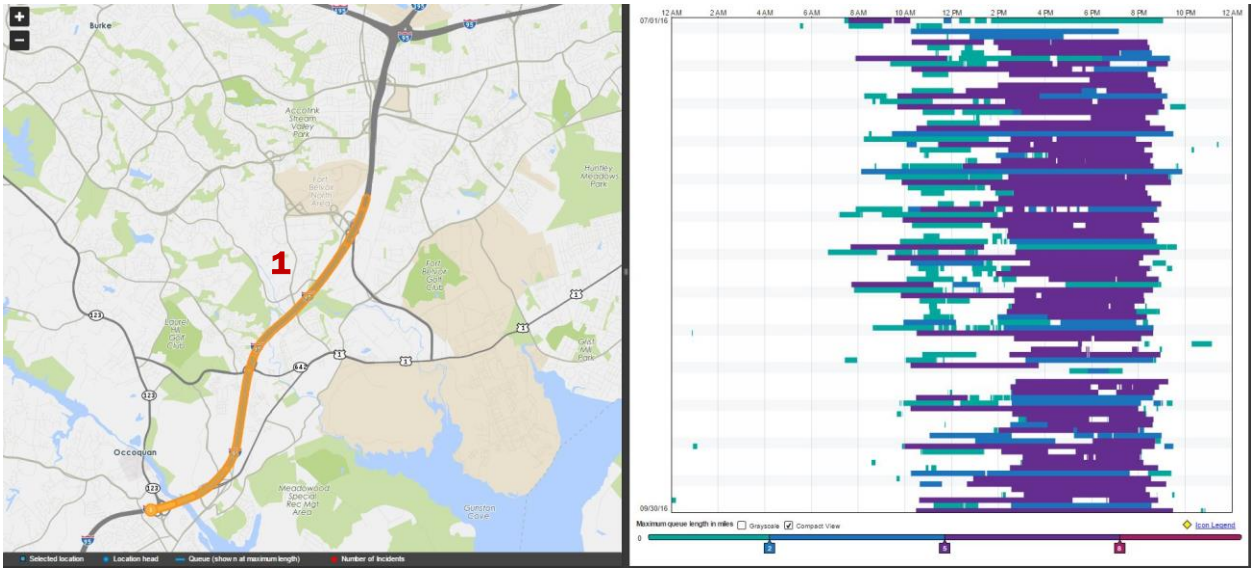
** The Impact Factor of a bottleneck is simply the product of the Average Duration (minutes), Average Max Length (miles) and the number of occurrences.*



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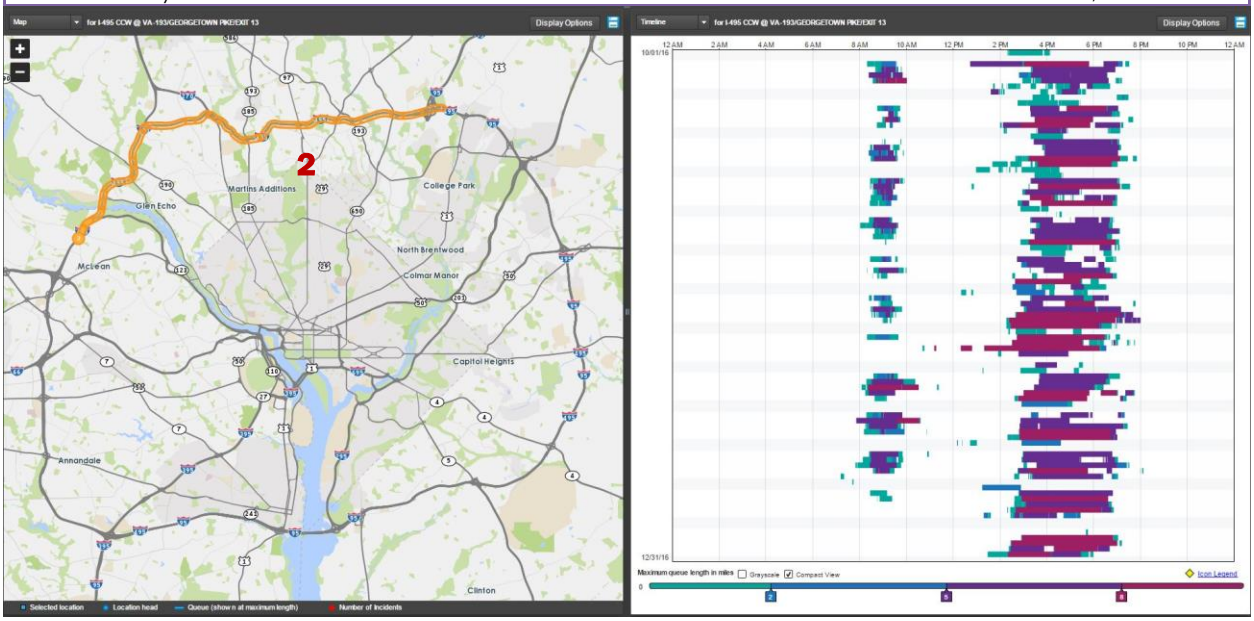

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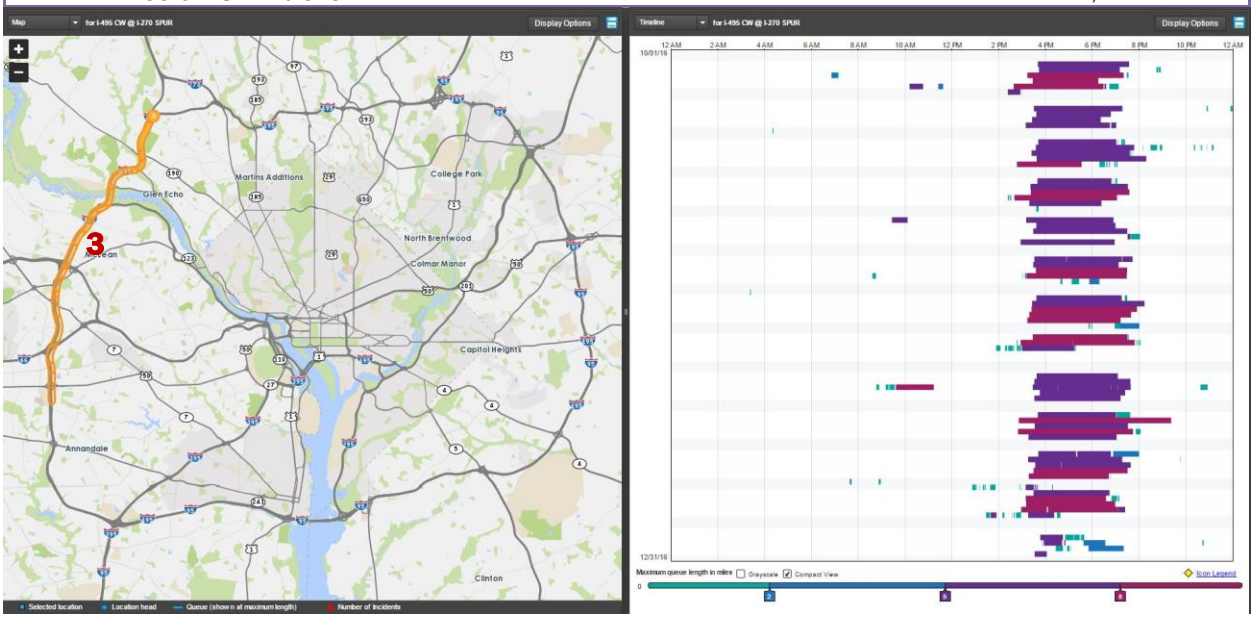

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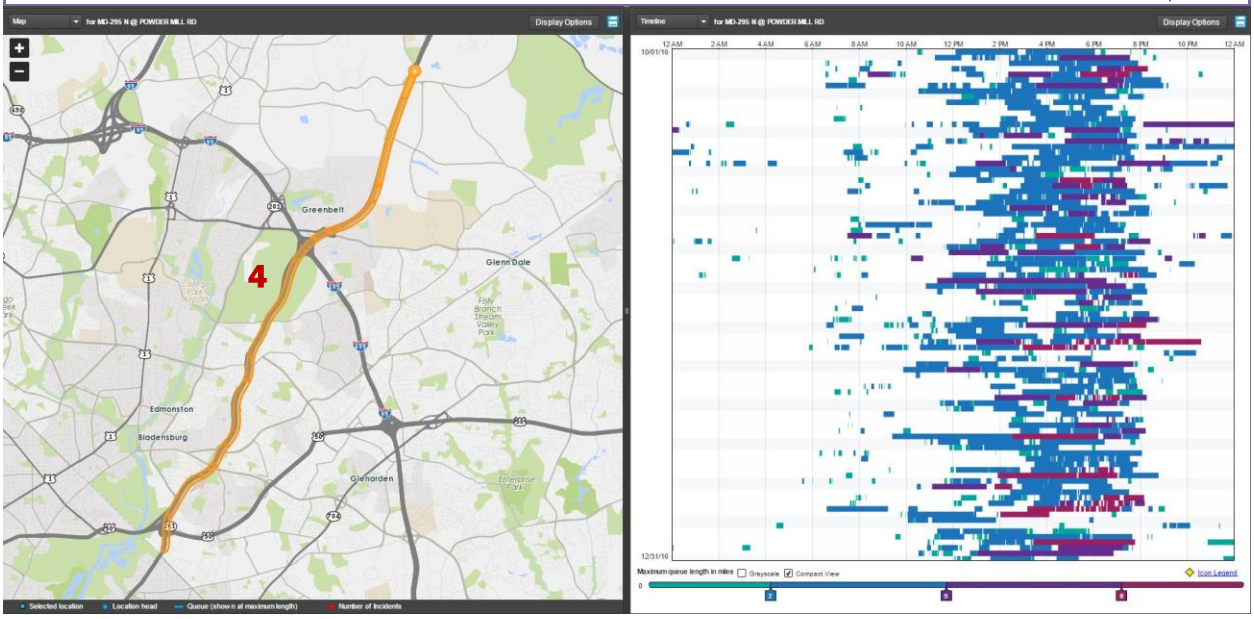

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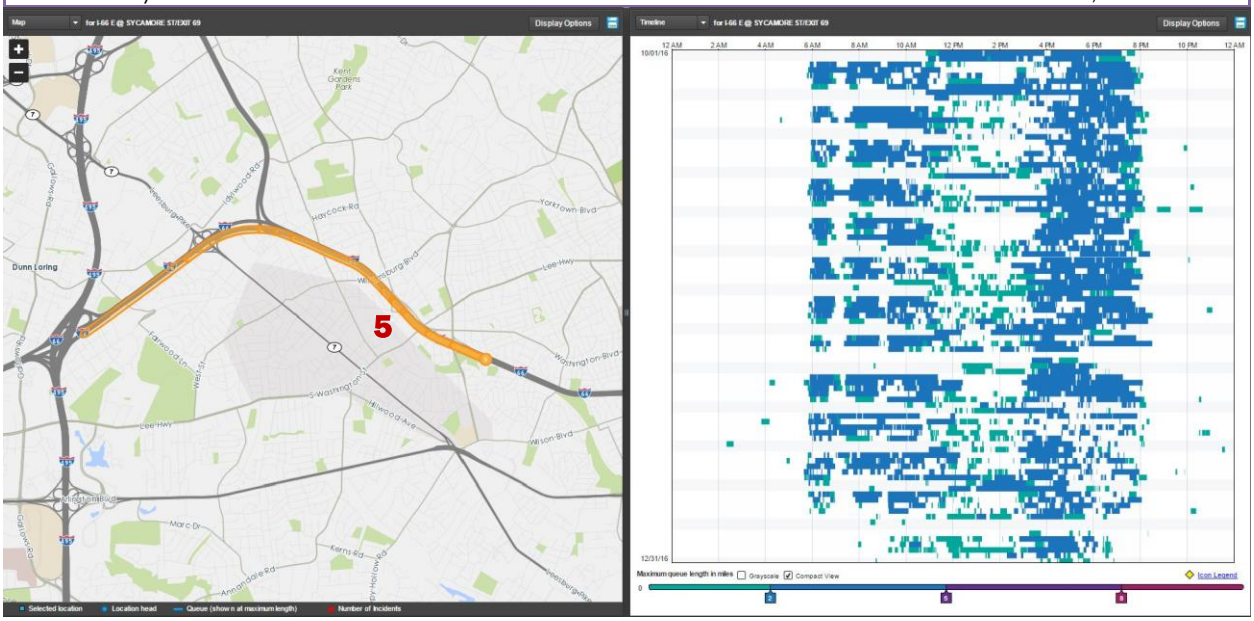

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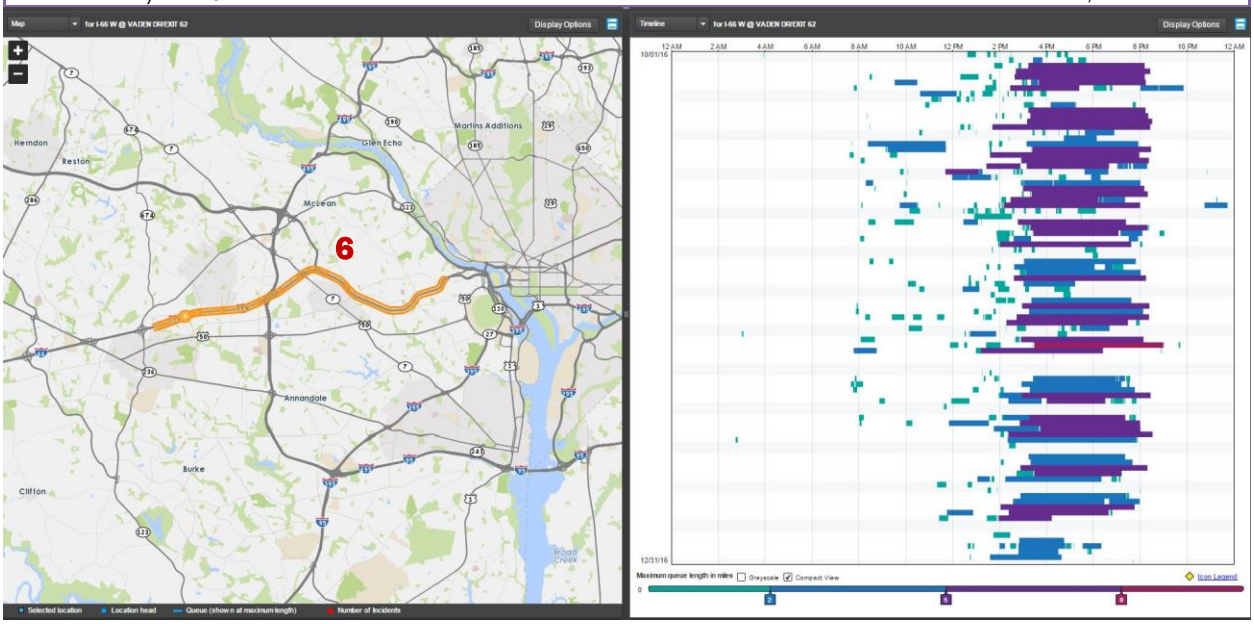

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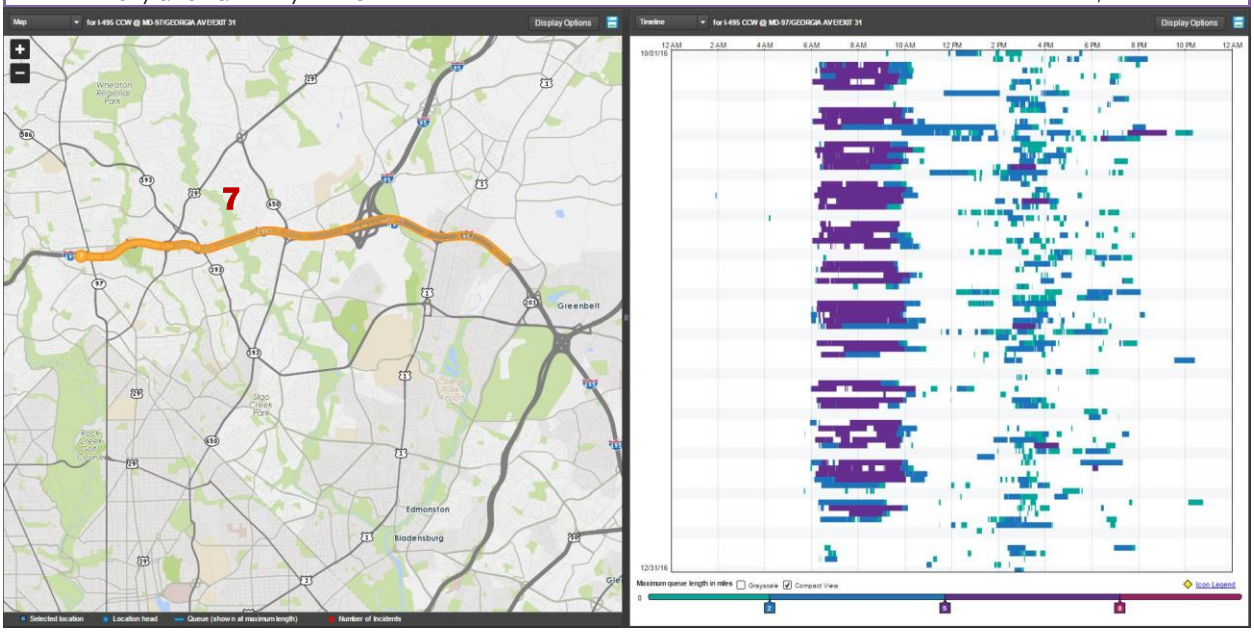

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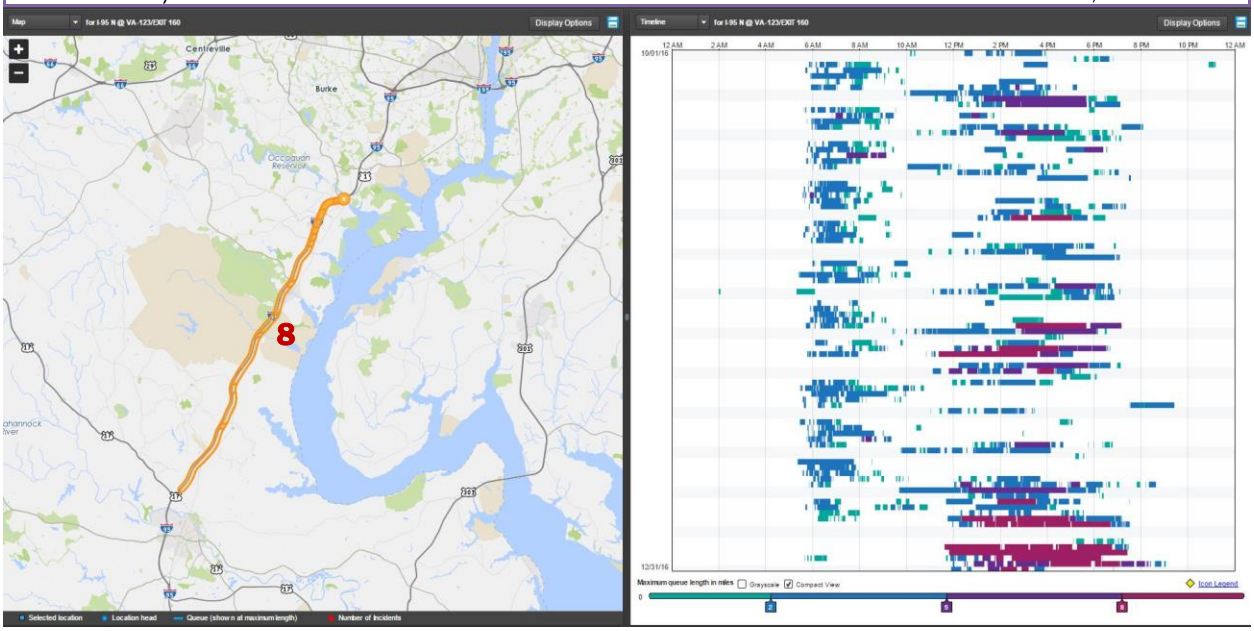

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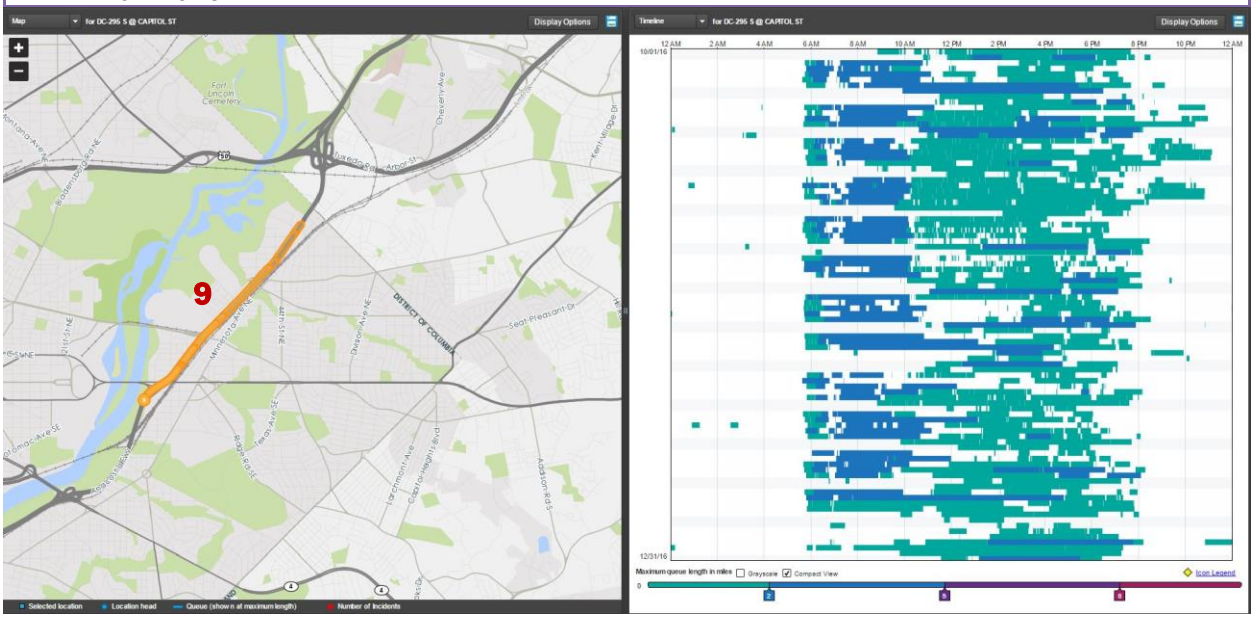

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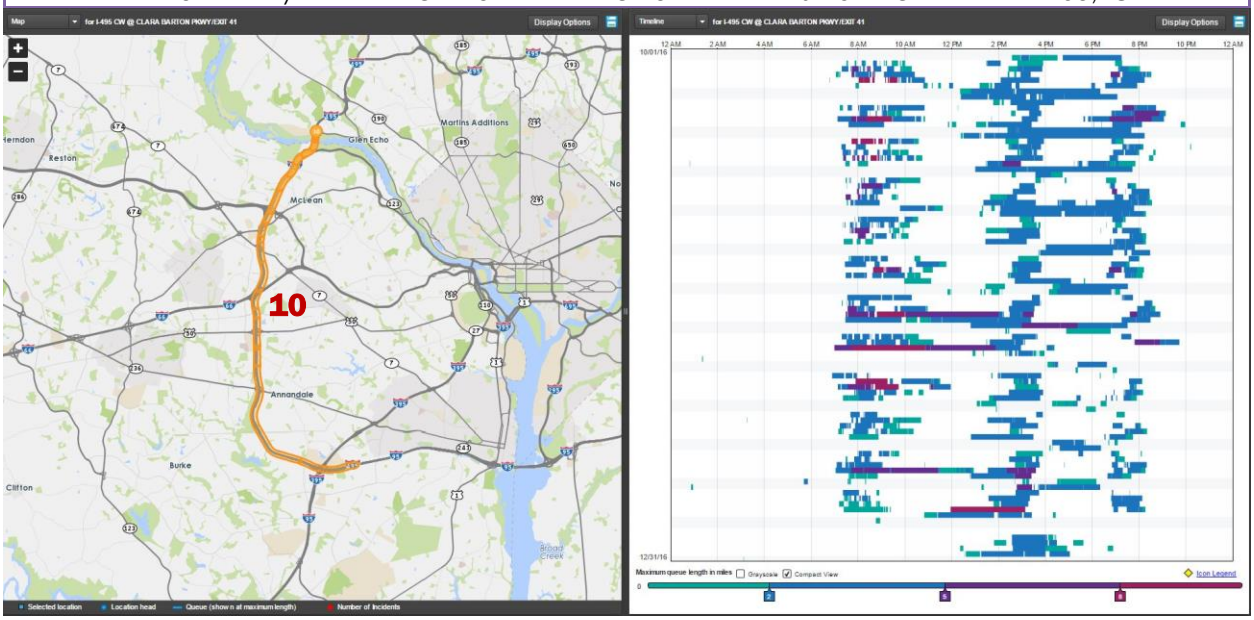


CONGESTION MAPS

Figure 3. Travel Time Index during weekday 8: 00-9:00 A.M. in 4th Quarter 2016

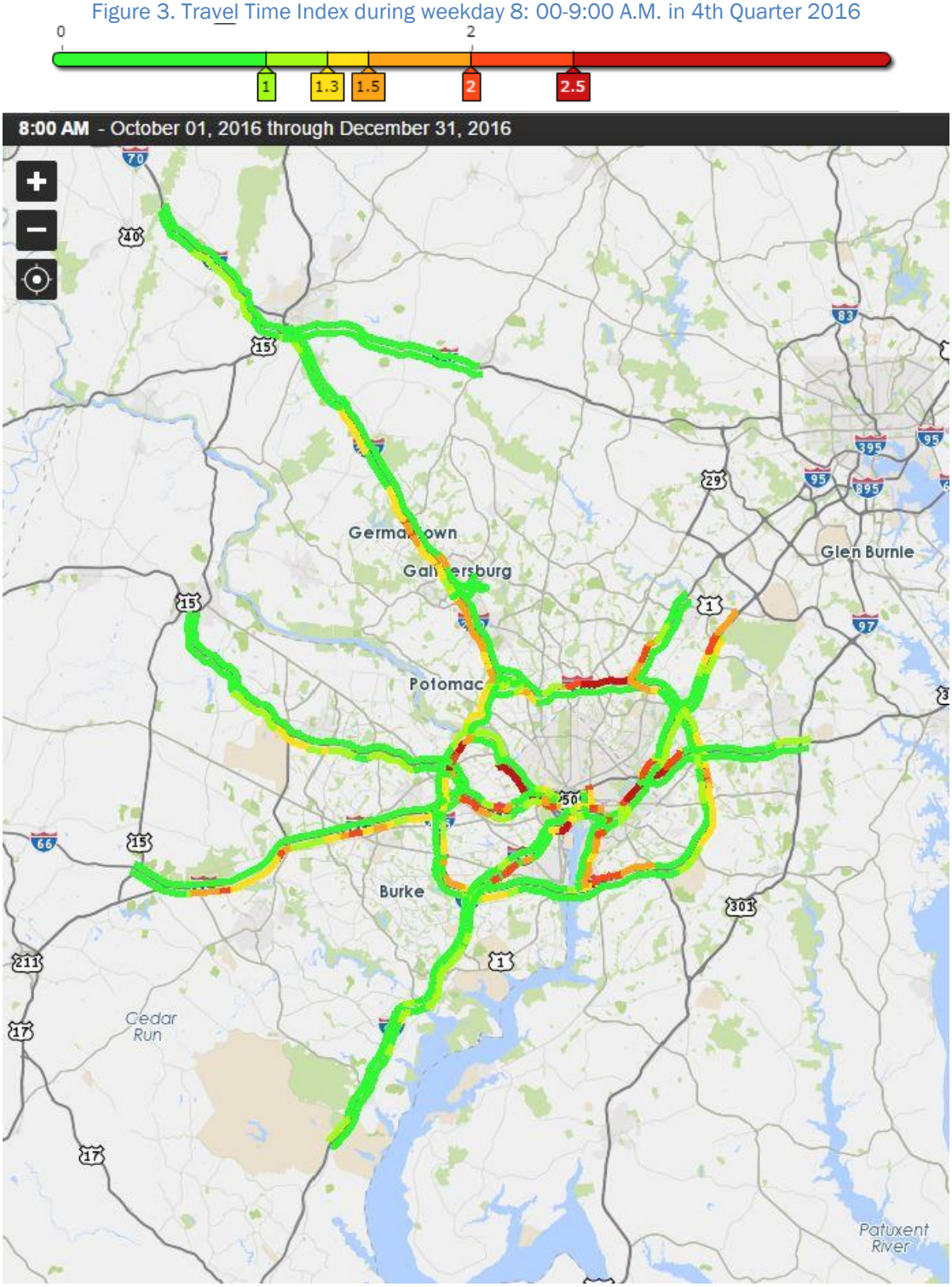
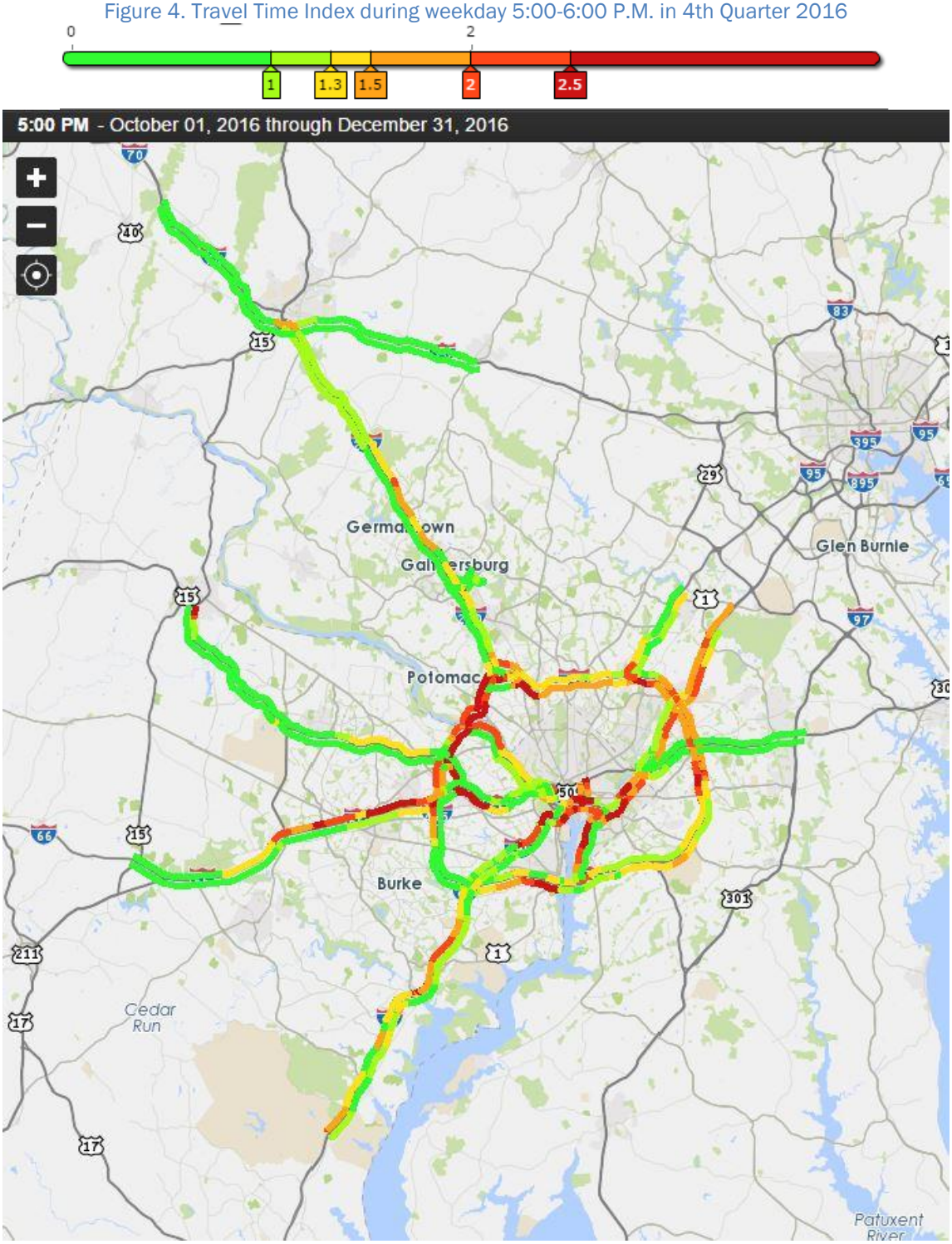


Figure 4. Travel Time Index during weekday 5:00-6:00 P.M. in 4th Quarter 2016



2016Q4 SPOTLIGHT – MORE INSIGHTS ON PRE-THANKSGIVING TRAFFIC SLOWDOWNS

Introduction

This quarterly spotlight reproduces the December 1, 2016 edition of TPB News, with a post-publication addendum. The article shows the evening of Tuesday before Thanksgiving always sees the biggest pre-holiday slowdown, based on data from 2012-2016. This spotlight provides additional insight into the Thanksgiving holiday traffic conditions and congestion since 2012.

Metropolitan Washington
Council of Governments

TPB NEWS

Pre-Thanksgiving traffic slowdowns reached their worst point Tuesday evening

Dec 1, 2016

(Andrew Bossi/Flickr)

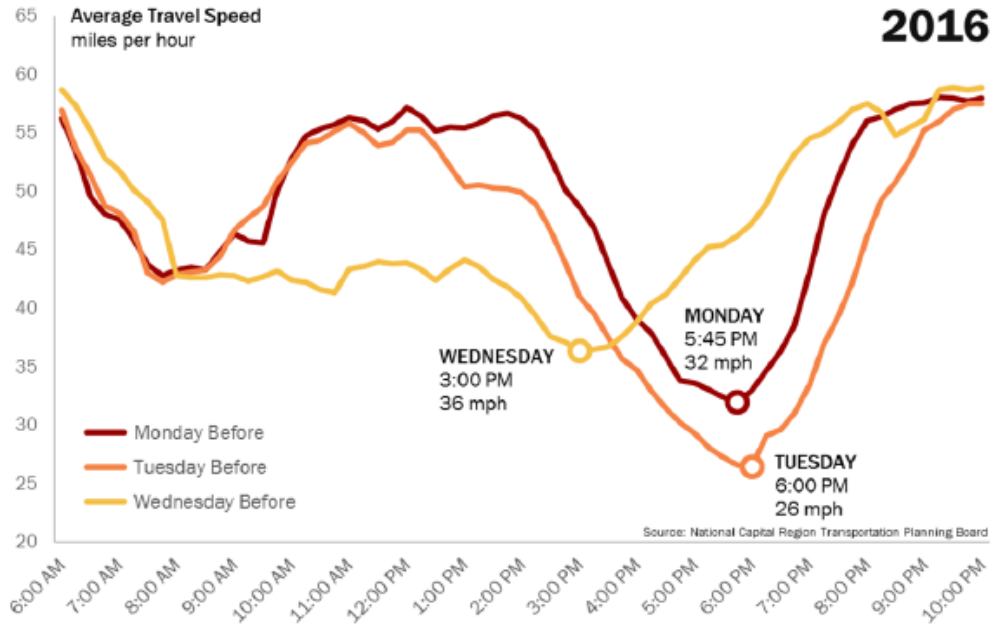
The leftover turkey is almost gone and many people are turning their attention to other holidays as 2016 comes to an end. But traffic researchers at the TPB have taken a quick look back to see how traffic conditions on area roadways played out in the days leading up to Thanksgiving Day. Their analysis points to the best and worst times for holiday getaway travelers to hit the road on their way out of town.

Tuesday before Thanksgiving still sees the biggest pre-holiday slowdowns

Average travel speeds on area freeways slowed to just 26 mph at around 6:00 P.M. on the Tuesday before Thanksgiving. That was about 12 mph lower than a normal Tuesday and the slowest average travel speed recorded all week.

That finding runs counter to a common perception that the Wednesday before Thanksgiving sees the worst traffic conditions leading up to the holiday. And it's consistent with a pattern that the TPB has now observed for the four years it has studied—2012, 2014, 2015, and 2016. (Comparable data for 2013 were not available.)

Busiest Times to Hit the Road Before the Thanksgiving Holiday



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The TPB's traffic researchers theorize that early getaway traffic combines with regular afternoon commute traffic to magnify Tuesday slowdowns. A similar though less pronounced phenomenon appears to occur on the Monday before the holiday as well.

New this year: all-day rush-hour conditions on Wednesday

Although Tuesday dominated in terms of absolute drops in travel speeds, Wednesday was no easy day to travel, either. Average freeway speeds hovered in the 40-45 mph range from 8:00 in the morning to 5:00 in the evening—essentially making for all-day rush-hour conditions.

That is a somewhat new development. In the three others years the TPB studied, travel conditions only started to deteriorate around lunchtime, leaving an early-morning window for getaway travelers to hit the road.

The cause of this year's day-long slowdown is not entirely clear, though the TPB's researchers think that a major traffic incident on the Capital Beltway during the morning commute might be the main culprit. A tractor-trailer that overturned on the Beltway's American Legion Bridge caused miles-long back-ups in both directions for several hours. The incident, the researchers say, could have been enough to bring down the average regional travel speed down during the morning hours Wednesday.

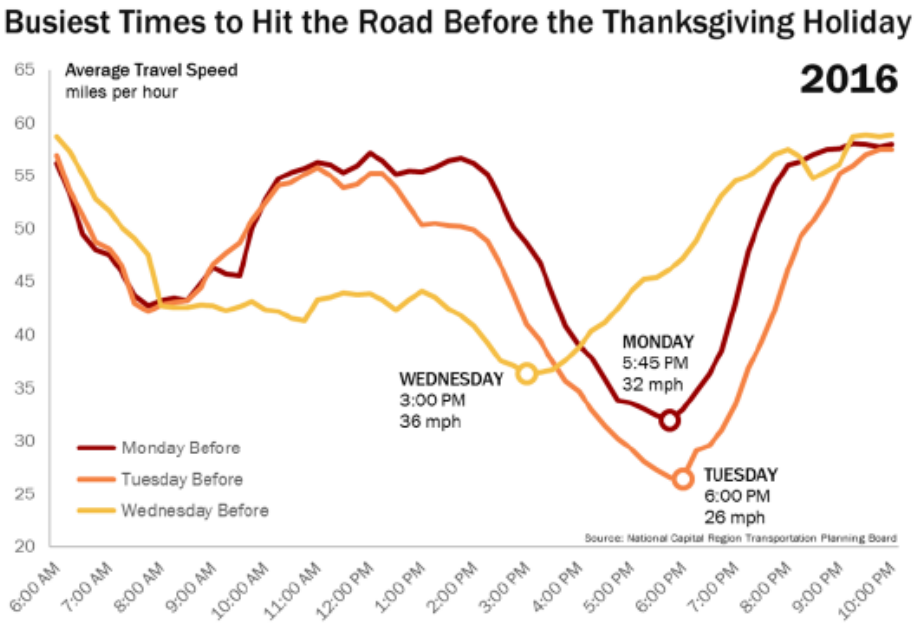
What to expect next year

It's probably far too early for most travelers to start thinking about their holiday-related travel for next Thanksgiving, but the TPB's researchers have a few key takeaways to keep in mind when the time comes.

One is that Tuesday consistently proves to have the worst slowdowns, usually occurring between about 4:00 and 7:00 P.M. Big slowdowns come on Wednesday, too, though they usually start earlier in the day and peak mid-afternoon. The best times to travel continue to be on Tuesday between 10:00 A.M. and 2:00 P.M., or after about 6:00 P.M. on Wednesday.

One new caveat in this year's analysis is that Wednesday traffic conditions are highly susceptible to fluctuations caused by major incidents, adding an extra degree of uncertainty to traveling on the day before the holiday.

GRAPHS FOR 2014-2016



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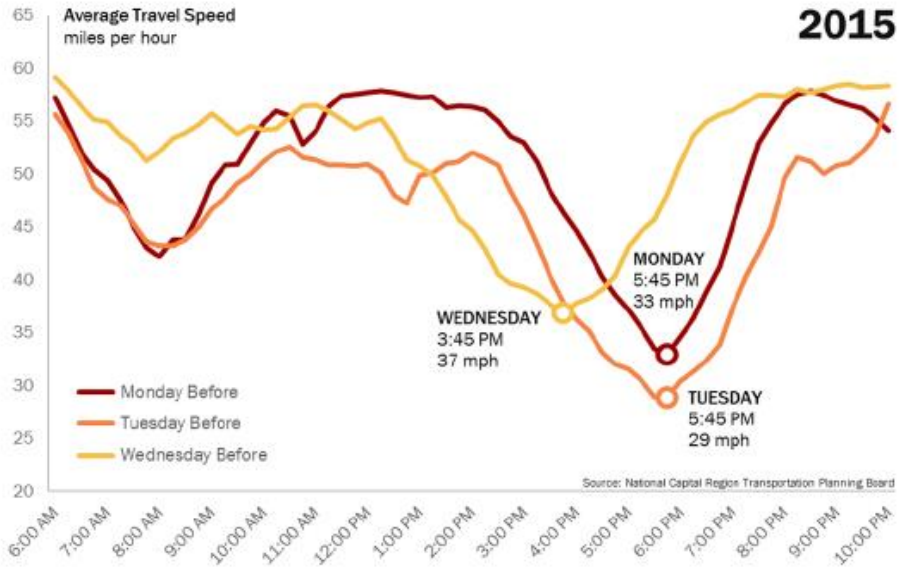

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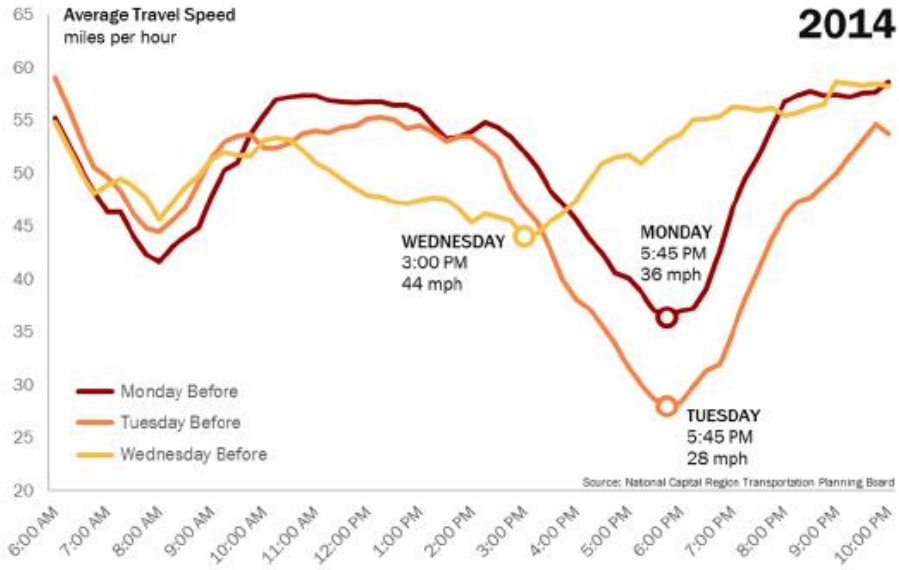


Addendum

By now it is a familiar story to many that the expected peak traffic rushes in years gone by being on the day before Thanksgiving have in recent years given way to the biggest rushes being on Tuesday, two days before Thanksgiving. Now we have several years of vehicle probe data to delve further into this trend, to see how consistent it is over time, and how it compares to yearly traffic patterns as a whole.

Patterns from Year to Year

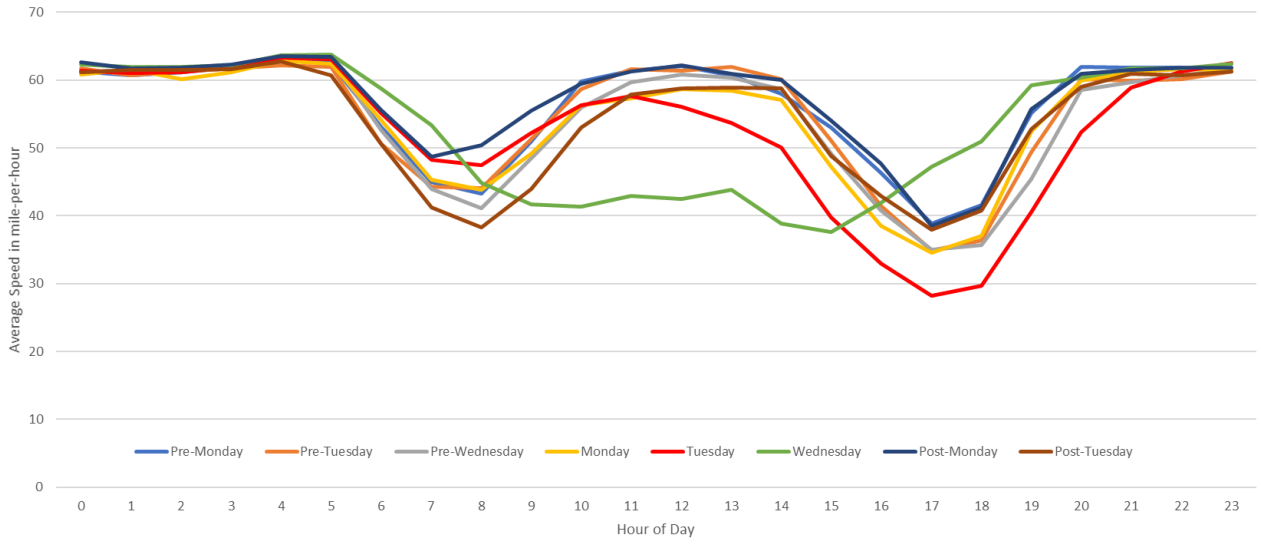
This addendum reinforces that the Tuesday evening prior to Thanksgiving is worse compared to other days in the Thanksgiving period. As shown in Figure 5, the average speed at 5 p.m. of the Tuesday prior to Thanksgiving can be 22% or more lower than the average of Tuesdays before and after the Thanksgiving.

Figure 5 Comparison of average speeds at 5 p.m. on Tuesdays

Average Speed / Year	The Tuesday	Average Tuesday	Difference
2012	32	48	-33%
2013	29	40	-27%
2014	28	36	-22%
2015	30	41	-26%
2016	28	36	-23%

Five years of data from 2012 to 2016, including comparison of Thanksgiving week travel on Monday, Tuesday, and Wednesday against the same days a week before and after Thanksgiving, are shown by year in Figures 6 through 10. Red lines in those figures represent average speeds at corresponding hours for the Tuesday prior to Thanksgiving. All five years have shown a similar but significant drop of average speed in afternoon of the Tuesdays on the regional Interstate system. It is worth noting that the drop did not occur just at a certain time but throughout the afternoon.

Figure 6 Comparison of hourly average speeds on area freeways before Thanksgiving in 2016



Looking at the distributions of average speed shown, on the Wednesday before Thanksgiving many drivers entered area freeways two-to-three hours earlier than usual. The evening peak hour was therefore observed two-to-three hours earlier than the regular weekdays. Even though the peak was earlier, it did not reach the same intensity as the Tuesday before Thanksgiving, and was even less congested than the average weekday peaks. Also, the peak ended earlier – by 6 PM – and travel after 6 PM on Wednesdays was close to free-flow conditions. The shifting of the peaks on these days could be caused by travelers mixing with commuters who were dismissed or chose to leave early from work. In 2016, due to incidents combined with the early afternoon peak, the Wednesday before Thanksgiving had one of the longest durations of congestion on area freeways observed, lasting from 6 AM to 6 PM, with a regional average speed of 40 mph.

Figure 7 Comparison of hourly average speeds on area freeways before Thanksgiving in 2015

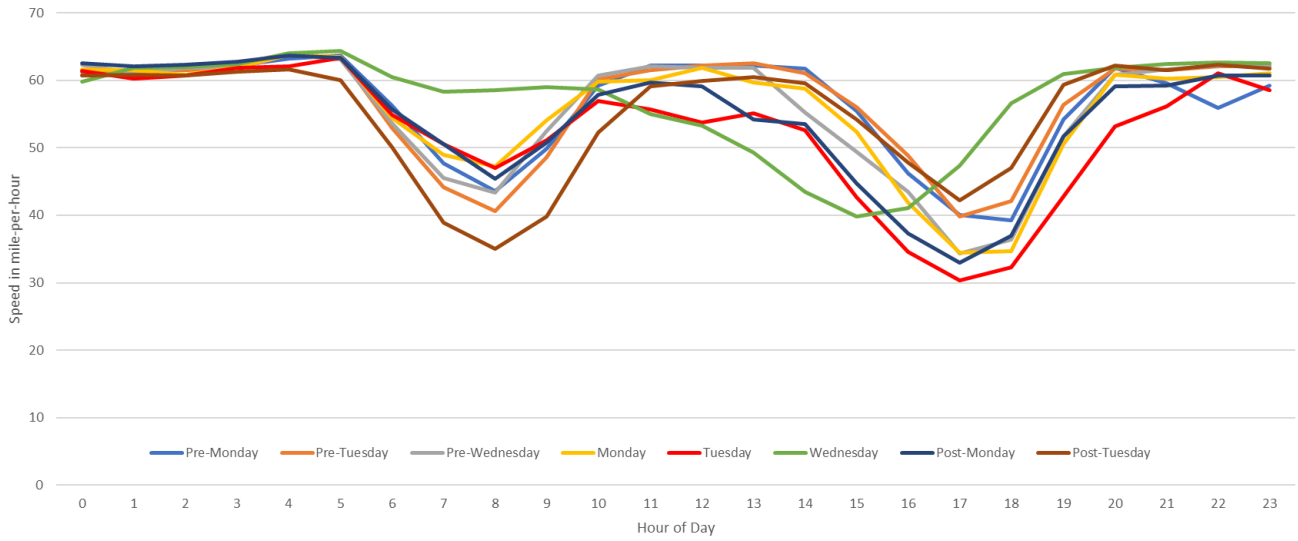


Figure 8 Comparison of hourly average speeds on area freeways before Thanksgiving in 2014

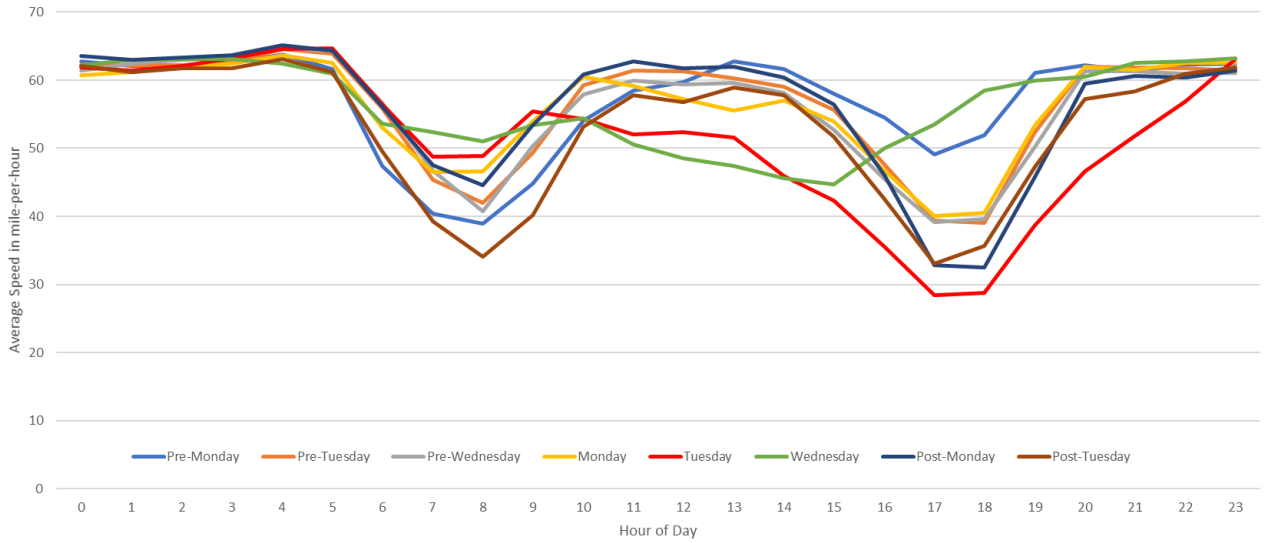


Figure 9 Comparison of hourly average speeds on area freeways before Thanksgiving in 2013

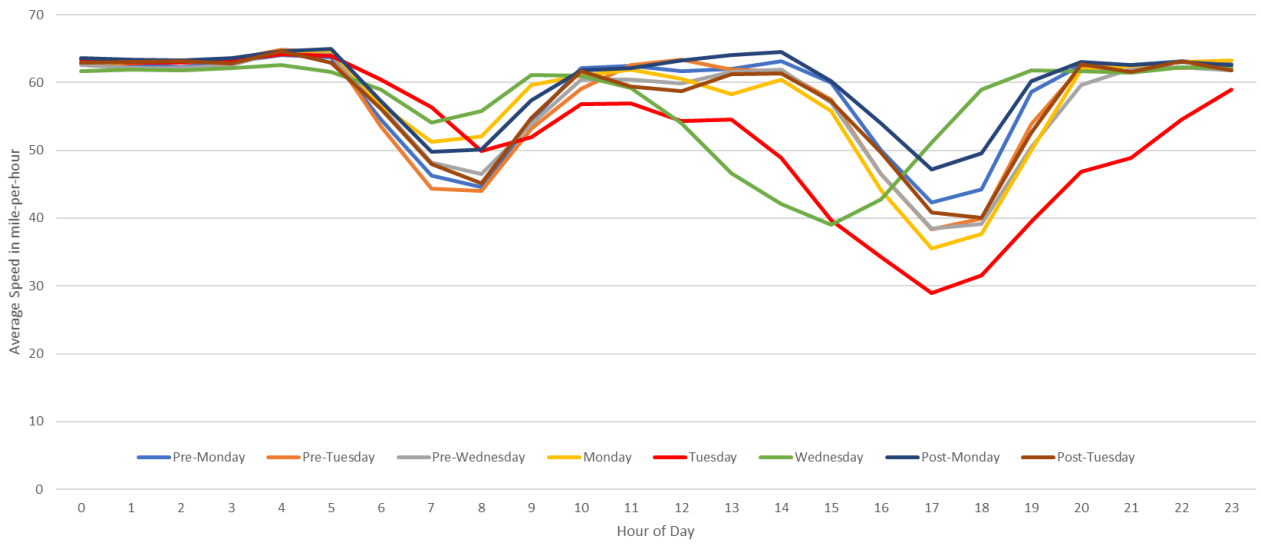
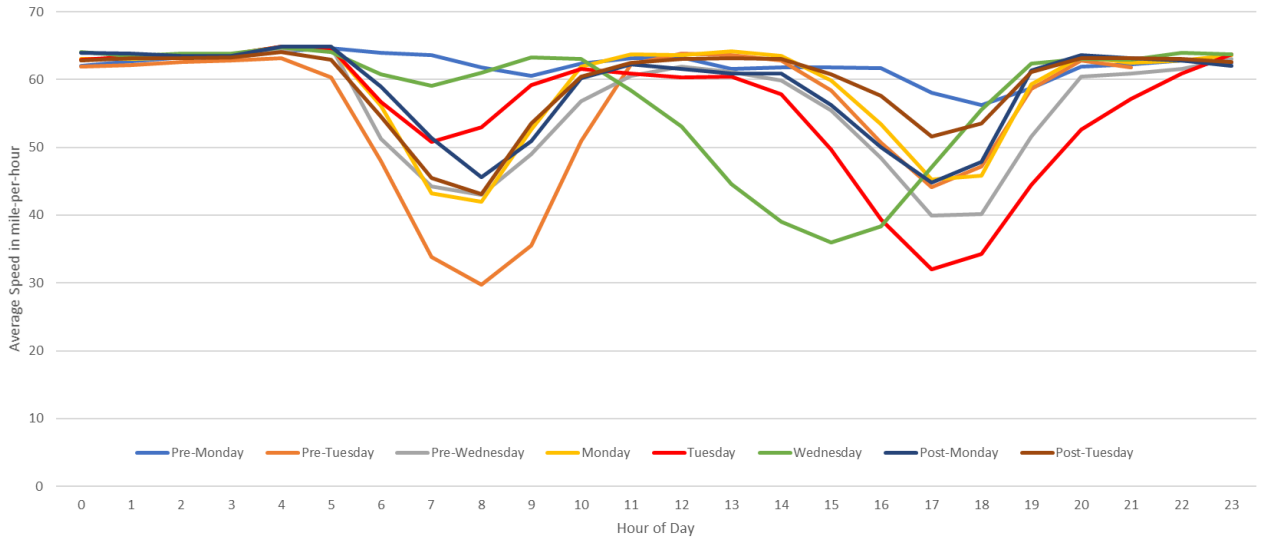


Figure 10 Comparison of hourly average speeds on area freeways before Thanksgiving in 2012



Outlook

The significant slowdown on Tuesday evening before Thanksgiving is "recurring" yearly. Travelers should plan their travel accordingly if they want to avoid congestion. It can take 30% to 50% longer than the regular congested weekday travel conditions, and incidents can exasperate drivers already facing severe congestion. What was once perhaps unexpected has now become the norm.

National Capital Region
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