

# CONGESTION REPORT

## 1<sup>st</sup> Quarter 2020

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

April 17, 2020



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**

Author: Jan-Mou Li

Project Management: Andrew J. Meese

Oversight: Kanti Srikanth

Data/Tools: I-95 Corridor Coalition Vehicle Probe Project; INRIX, Inc.;  
CATT Lab of University of Maryland

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1<sup>st</sup> Quarter 2020

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# CONGESTION – TRAVEL TIME INDEX (TTI)

## Interstate System

TTI 1<sup>st</sup> Quarter 2019: **1.24** ↓8.0% or -0.11<sup>1</sup>  
 TTI Trailing 4 Quarters: **1.34** ↓2.5% or -0.04<sup>2</sup>

## Non-Interstate NHS<sup>3</sup>

TTI 1<sup>st</sup> Quarter 2019: **1.15** ↓2.4% or -0.03  
 TTI Trailing 4 Quarters: **1.18** ↓0.2% or -0.02

## Transit-Significant<sup>4</sup>

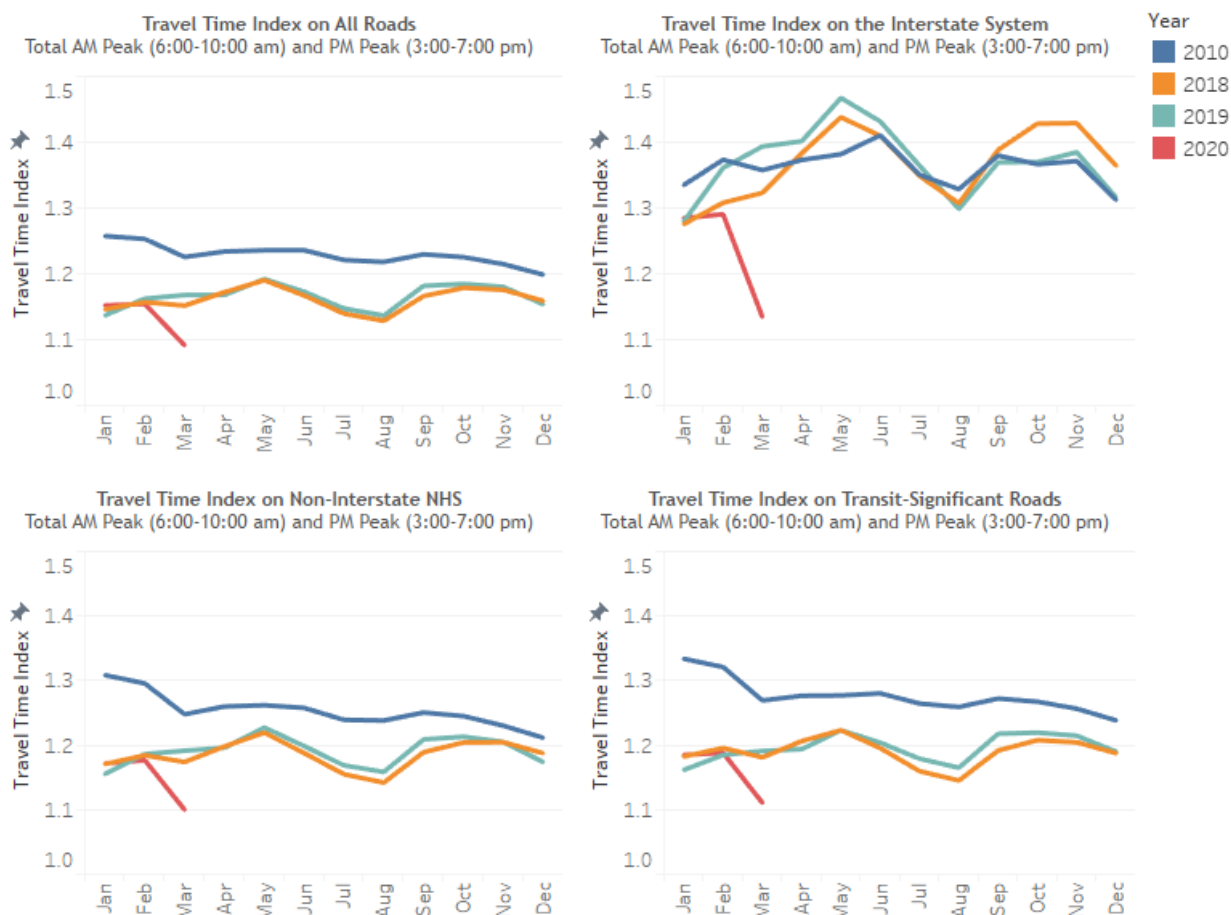
TTI 1<sup>st</sup> Quarter 2019: **1.16** ↓1.5% or -0.02  
 TTI Trailing 4 Quarters: **1.19** ↑0.2% or 0.00

## All Roads

TTI 1<sup>st</sup> Quarter 2019: **1.13** ↓2.0% or -0.02  
 TTI Trailing 4 Quarters: **1.16** ↓0.2% or 0.00

<sup>1</sup> Compared to 1<sup>st</sup> Quarter 2019; <sup>2</sup> Compared to one year earlier; <sup>3</sup> NHS: National Highway System; <sup>4</sup> 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.

# RELIABILITY – PLANNING TIME INDEX (PTI)

### Interstate System

PTI 1<sup>st</sup> Quarter 2019: **1.60** ↓13.2% or -0.24<sup>1</sup>  
 PTI Trailing 4 Quarters: **1.82** ↓5.3% or -0.10<sup>2</sup>

### Non-Interstate NHS<sup>3</sup>

PTI 1<sup>st</sup> Quarter 2019: **1.32** ↓6.0% or -0.09  
 PTI Trailing 4 Quarters: **1.40** ↓2.3% or -0.03

### Transit-Significant<sup>4</sup>

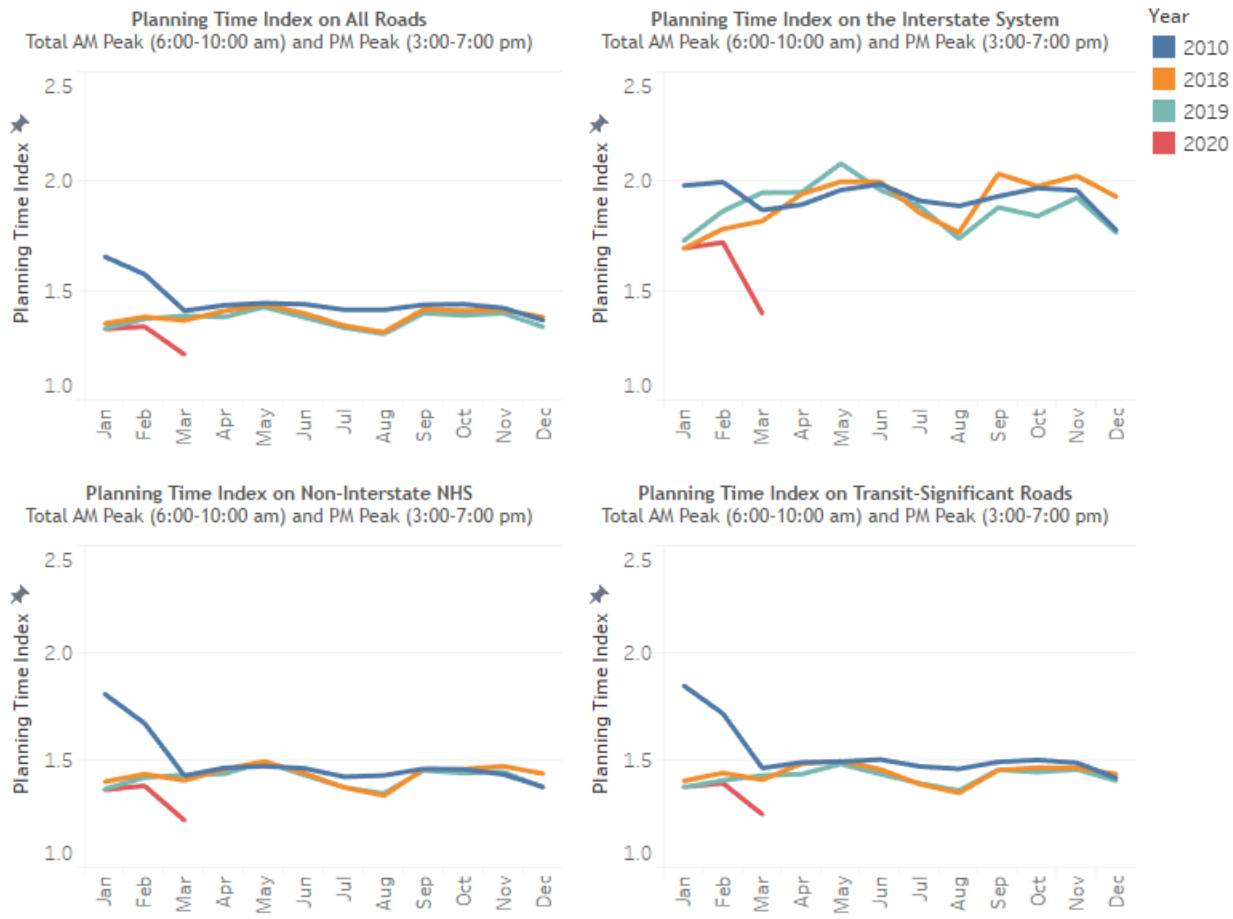
PTI 1<sup>st</sup> Quarter 2019: **1.34** ↓4.6% or -0.06  
 PTI Trailing 4 Quarters: **1.41** ↓1.9% or -0.03

### All Roads

PTI 1<sup>st</sup> Quarter 2019: **1.29** ↓5.3% or -0.07  
 PTI Trailing 4 Quarters: **1.35** ↓2.3% or -0.03

<sup>1</sup> Compared to 1<sup>st</sup> Quarter 2019; <sup>2</sup> Compared to one year earlier; <sup>3</sup> NHS: National Highway System; <sup>4</sup> 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)

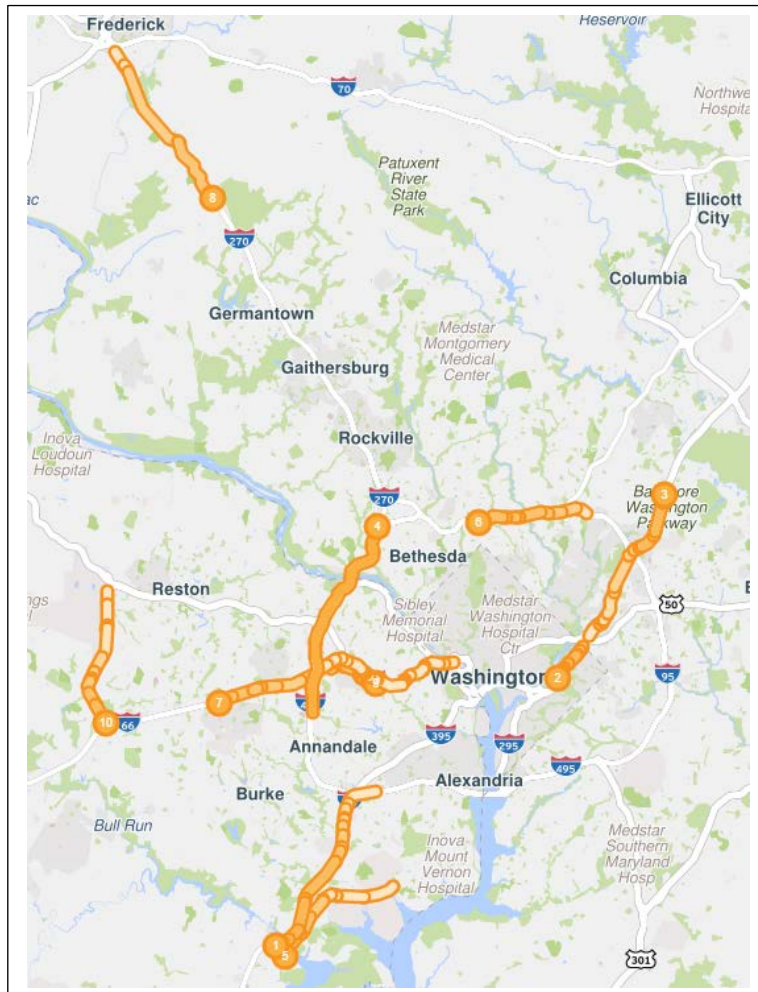


**Planning Time Index (PTI)**, defined as the ratio of 95th percentile travel time to free flow travel time, measures travel time reliability. The higher the index, the less reliable traffic conditions it represents, e.g., PTI = 1.30 means a traveler must budget 30% longer than the uncongested travel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

# TOP 10 BOTTLENECKS

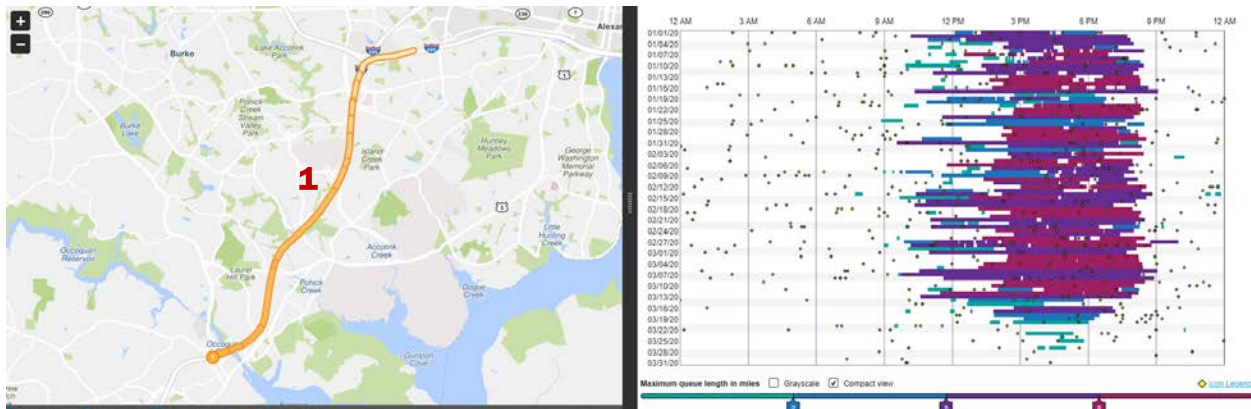
Rank (Last Quarter Rank)	Location	Average duration	Average max length (miles)	Total duration	Impact factor
1 (1)	I-95 S @ VA-123/EXIT 160	6 h 13 m	4.99	23 d 13 h 46 m	130,769
2 (4)	DC-295 S @ E CAPITOL ST	6 h 34 m	1.43	24 d 21 h 48 m	46,685
3 (2)	BW PKWY N @ POWDER MILL RD	4 h 4 m	2.77	15 d 11 h 4 m	46,353
4 (3)	I-495 CW @ I-270-SPUR	1 h 37 m	4.54	6 d 3 h 36 m	44,408
5 (19)	US-1 S @ VA-123/GORDON BLVD	3 h 19 m	1.84	12 d 14 h 12 m	37,961
6 (9)	I-495 CCW @ MD-97/GEORGIA AVE/EXIT 31	1 h 31 m	3.65	5 d 18 h 44 m	36,224
7 (14)	I-66 W @ VA-123/EXIT 60	2 h 3 m	3.51	7 d 19 h 10 m	36,052
8 (13)	I-270 S @ MD-109/EXIT 22	1 h 39 m	3.62	6 d 6 h 45 m	33,082
9 (6)	I-66 E @ SYCAMORE ST/EXIT 69	3 h 36 m	1.58	13 d 16 h 52 m	33,053
10 (26)	VA-28 S @ VA-620/BRADDOCK RD/WALNEY RD	2 h 30 m	2.43	9 d 12 h 16 m	30,339

*\*\*Not in the top 50 bottlenecks of the previous report.*

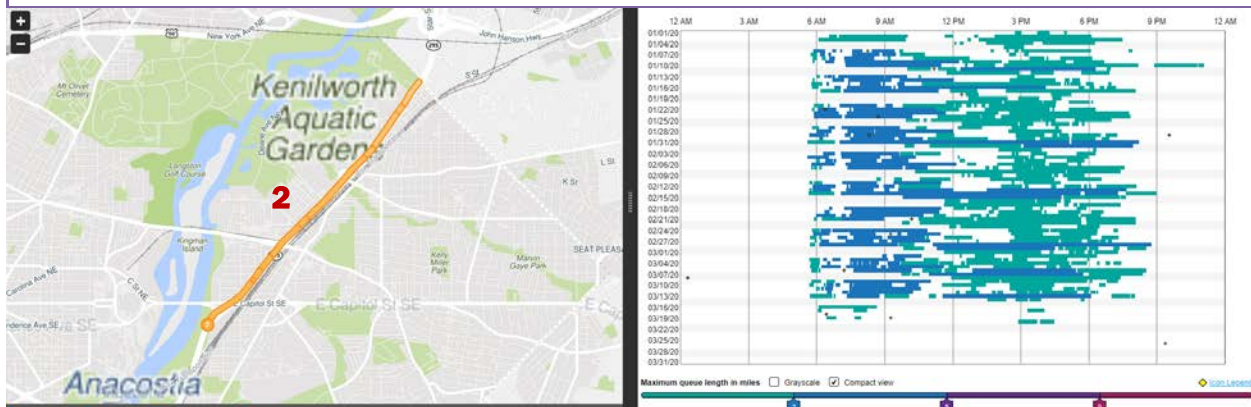


Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor*
1	I-95 S @ VA-123/EXIT 160	6 h 13 m	4.99	23 d 13 h 46 m	130,769

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

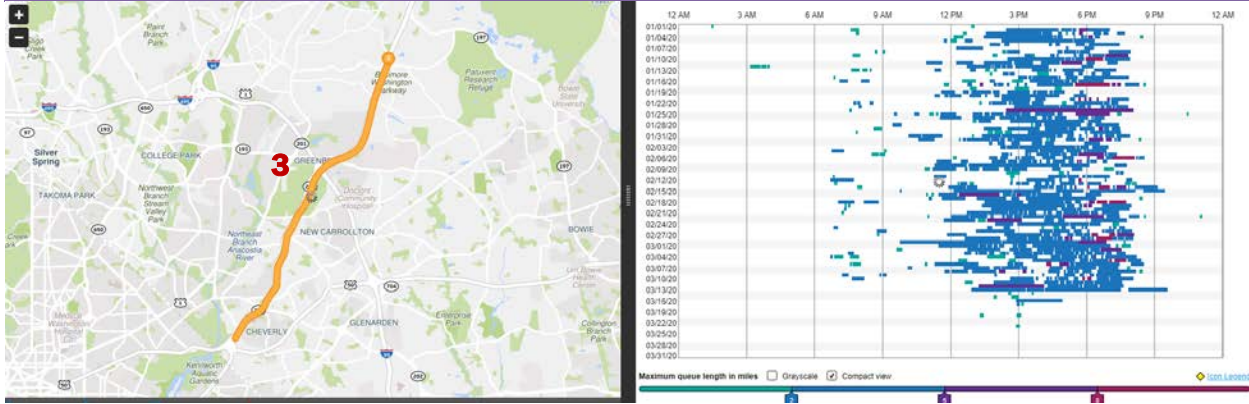


Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor
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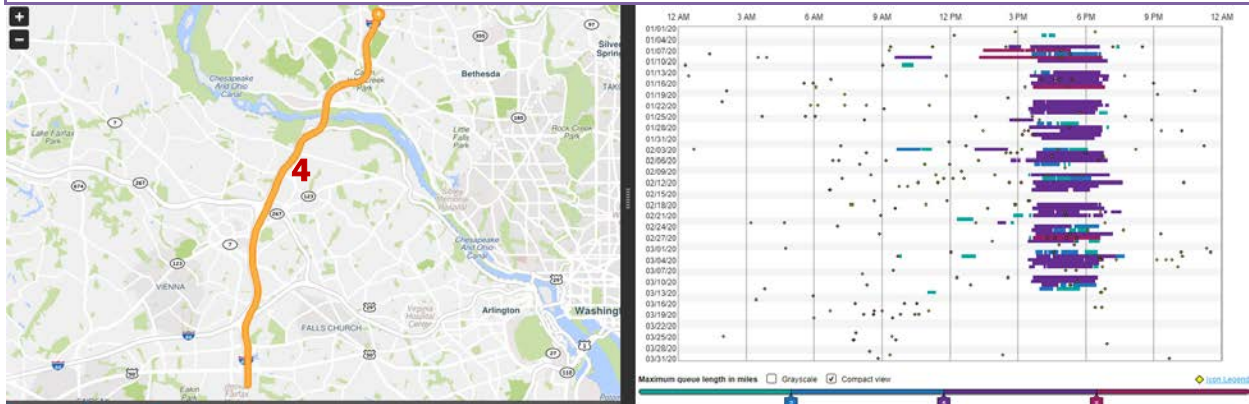




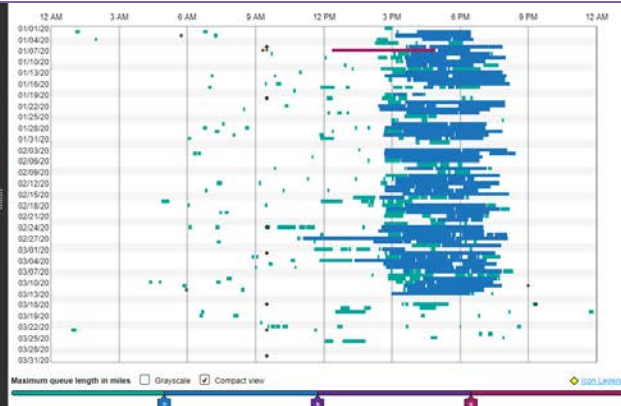
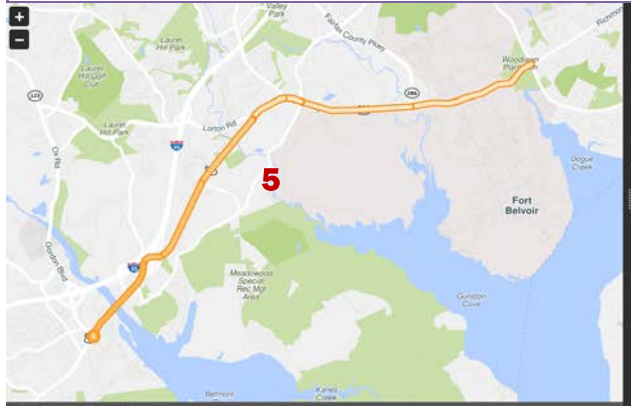
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3	BW PKWY N @ POWDER MILL RD	4 h 4 m	2.77	15 d 11 h 4 m	46,353



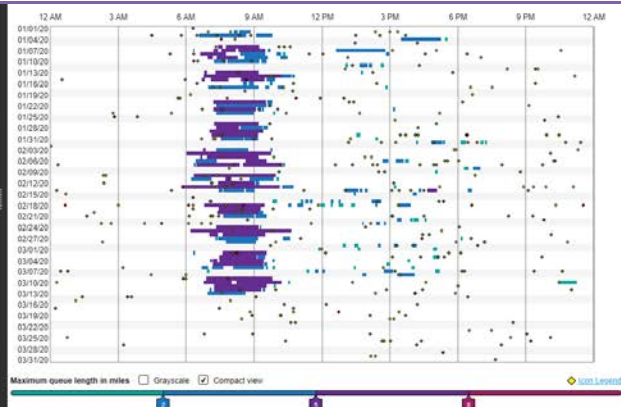
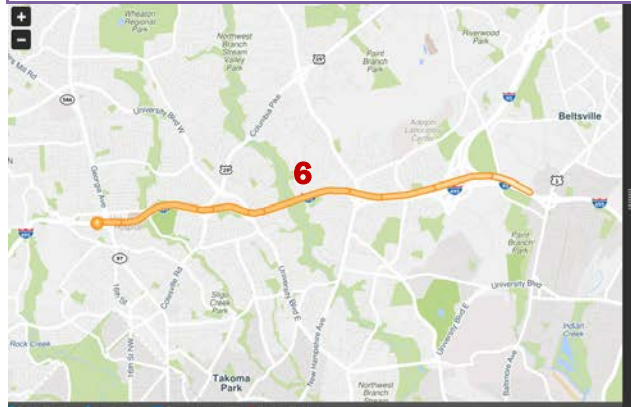
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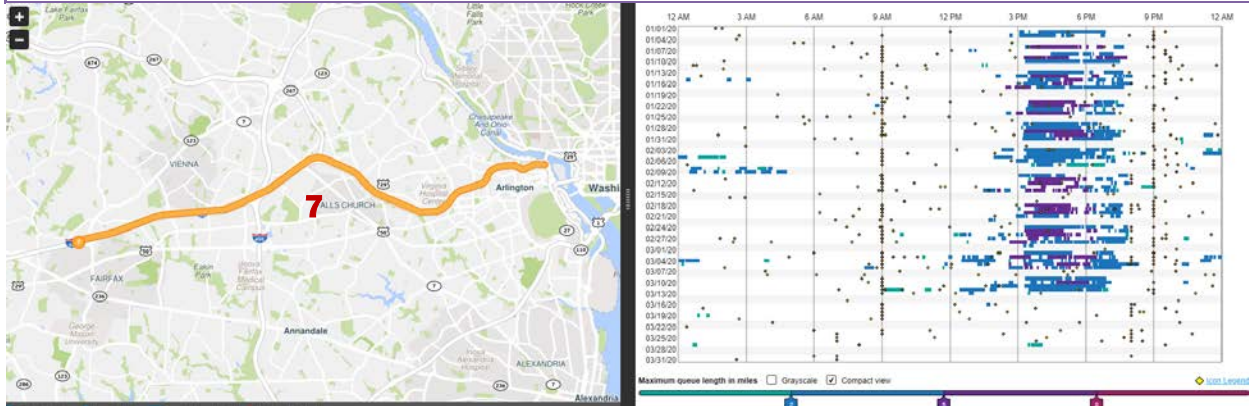
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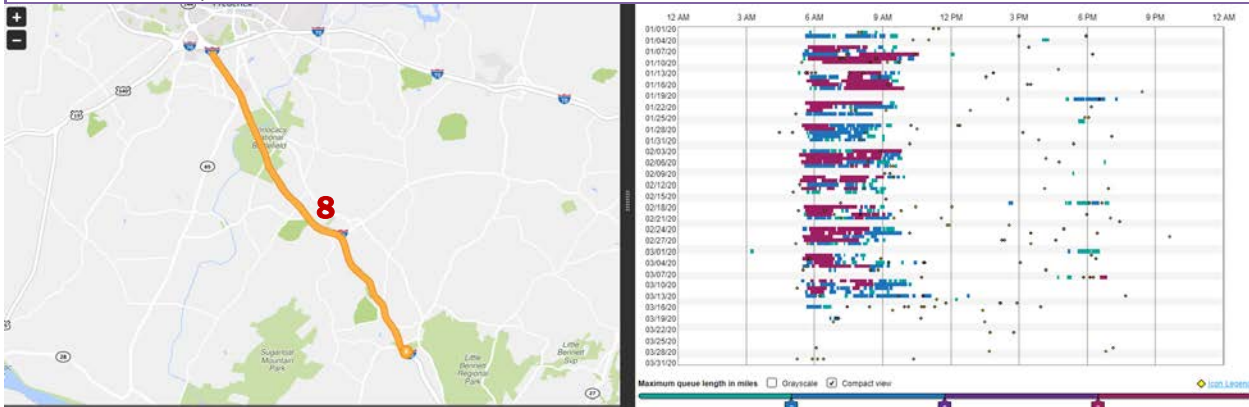
Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor
6	I-495 CCW @ MD-97/GEORGIA AVE/EXIT 31	1 h 31 m	3.65	5 d 18 h 44 m	36,224



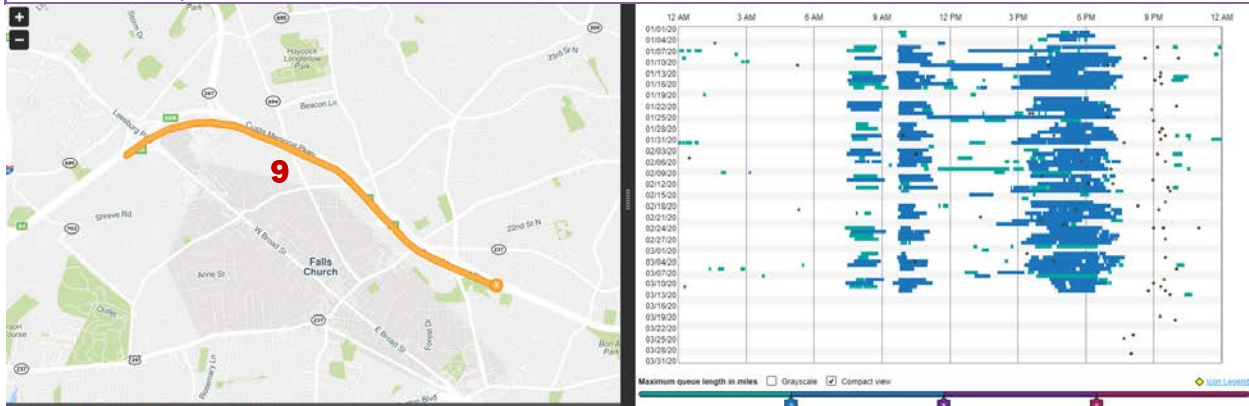
Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor
7	I-66 W @ VA-123/EXIT 60	2 h 3 m	3.51	7 d 19 h 10 m	36,052



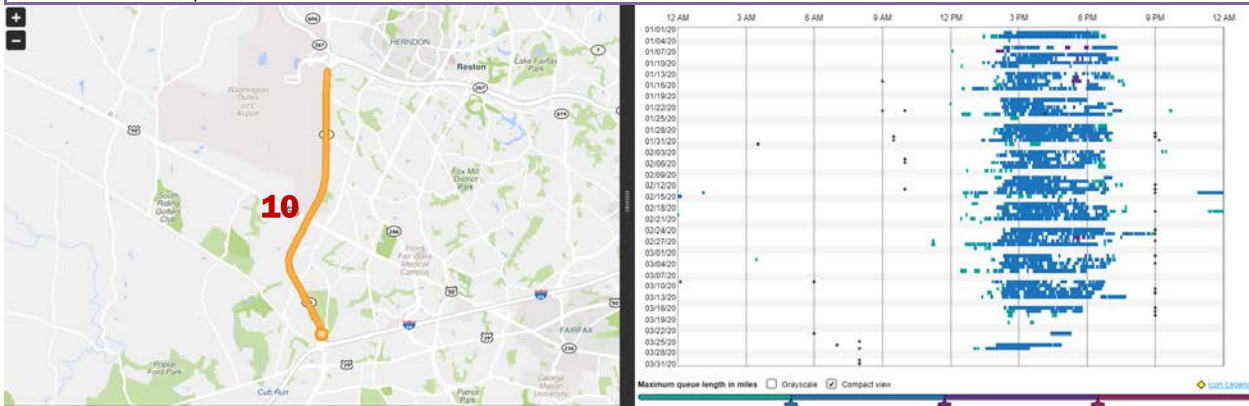
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8	I-270 S @ MD-109/EXIT 22	1 h 39 m	3.62	6 d 6 h 45 m	33,082



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Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor
10	VA-28 S @ VA-620/BRADDOCK RD/WALNEY RD	2 h 30 m	2.43	9 d 12 h 16 m	30,339



# CONGESTION MAPS

Figure 3. Travel Time Index during weekday 8: 00-9:00 A.M. in 1<sup>st</sup> Quarter of 2020

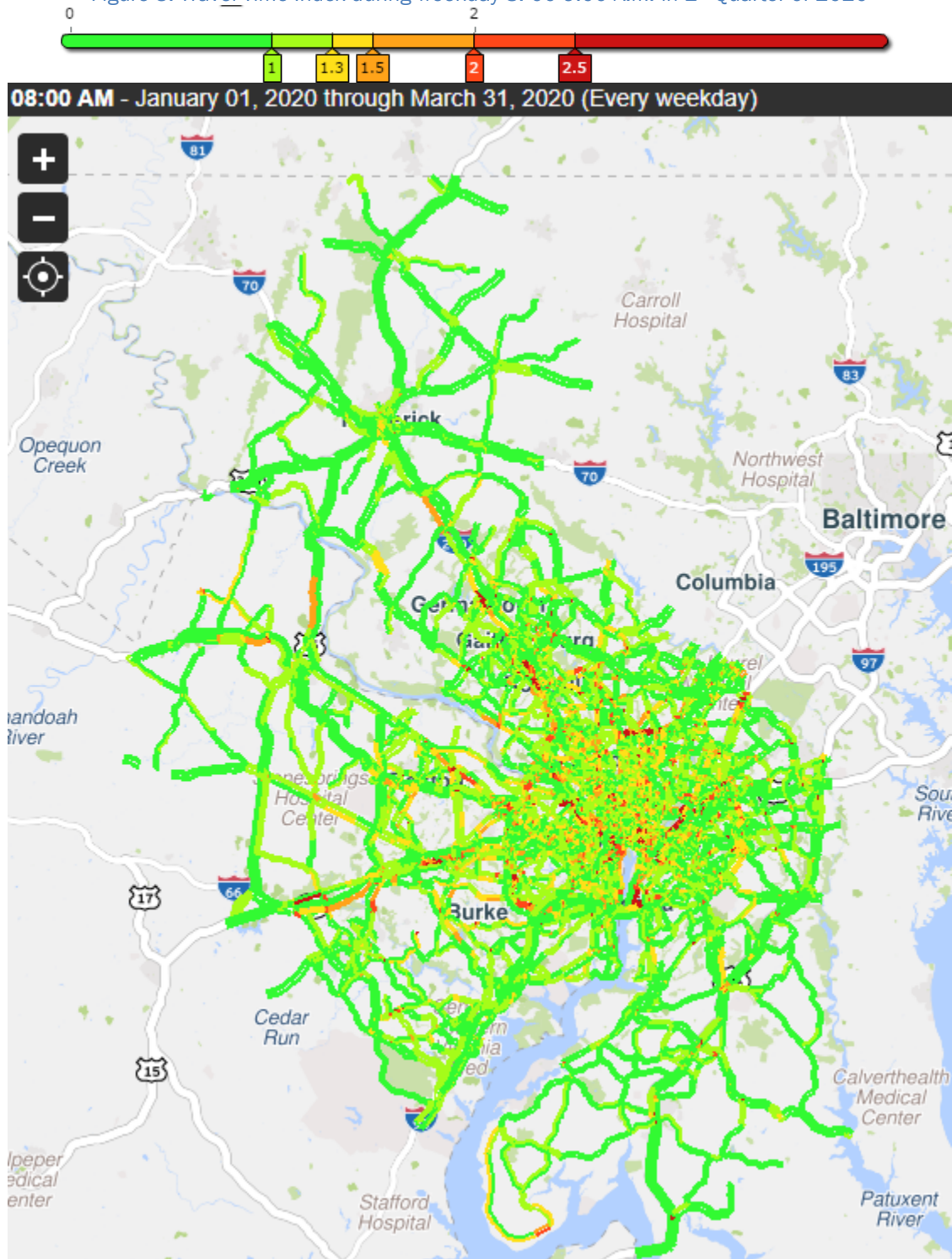
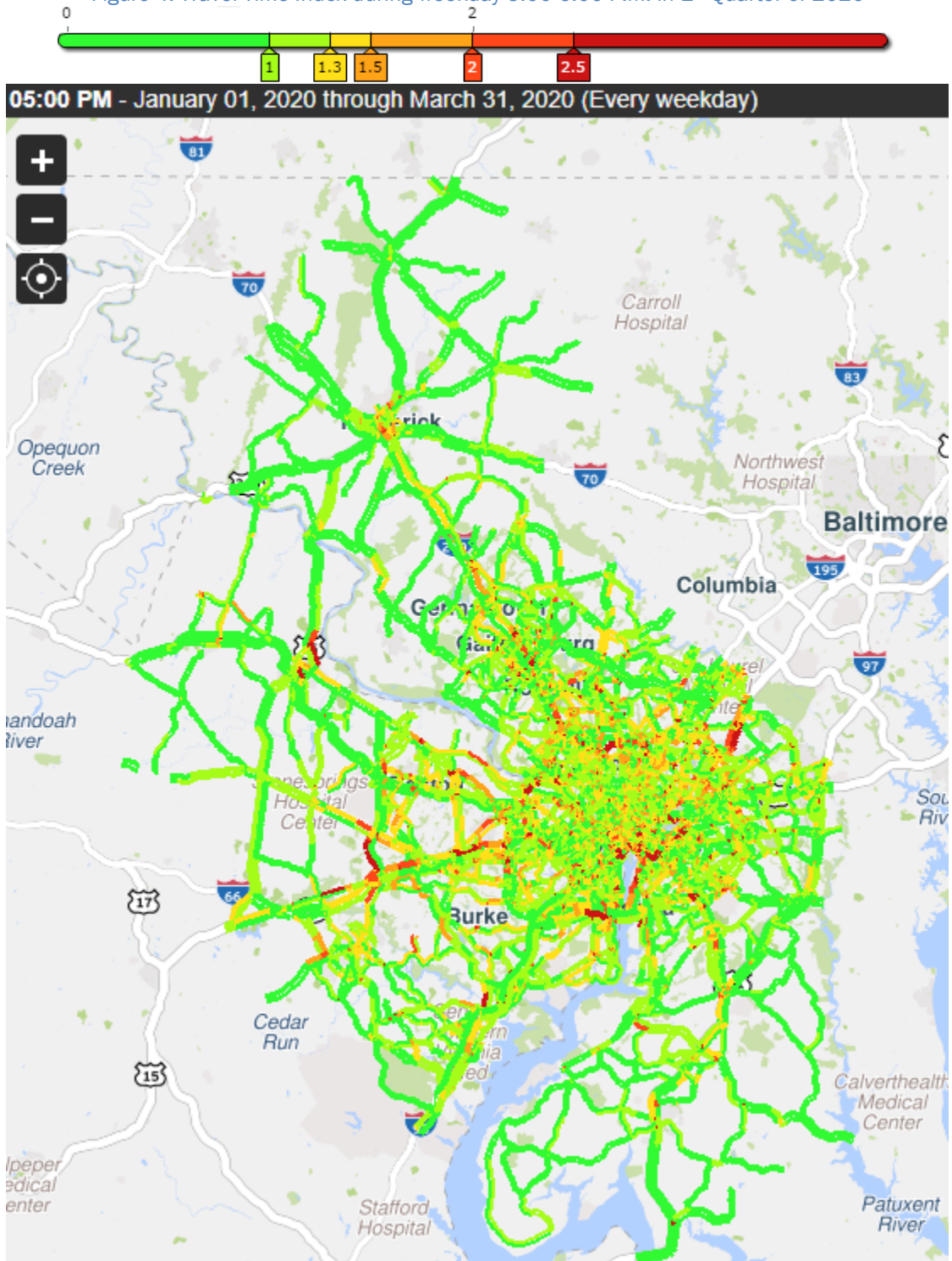


Figure 4. Travel Time Index during weekday 5:00-6:00 P.M. in 1<sup>st</sup> Quarter of 2020



## 2020Q1 SPOTLIGHT – IMPACTS OF THE COVID-19 PANDEMIC ON TRAFFIC STARTED

In the first quarter, or more specifically in March, of 2020, impacts of measures in responding COVID-19 pandemic on regional traffic became significant.

Without taking possible rate of natural increase into consideration, year-over-year trend of the congestion measure (i.e. travel time index, TTI) for this quarter on all roads in the region dropped about 2% (as shown in the Congestion table previously). For a comparison, the trend of the first quarter in 2019 was increasing 0.3% and variations of the trend in recent years are most likely less than 0.5%.

TTI on all roads in March 2020 dropped almost 7% comparing to that in 2019 (as shown in Figure 5) since most of temporary restrictions on activities were put into place in this month. For example, the governor of Virginia ordered all K-12 schools in the commonwealth closed for two weeks starting on March 13, 2020.

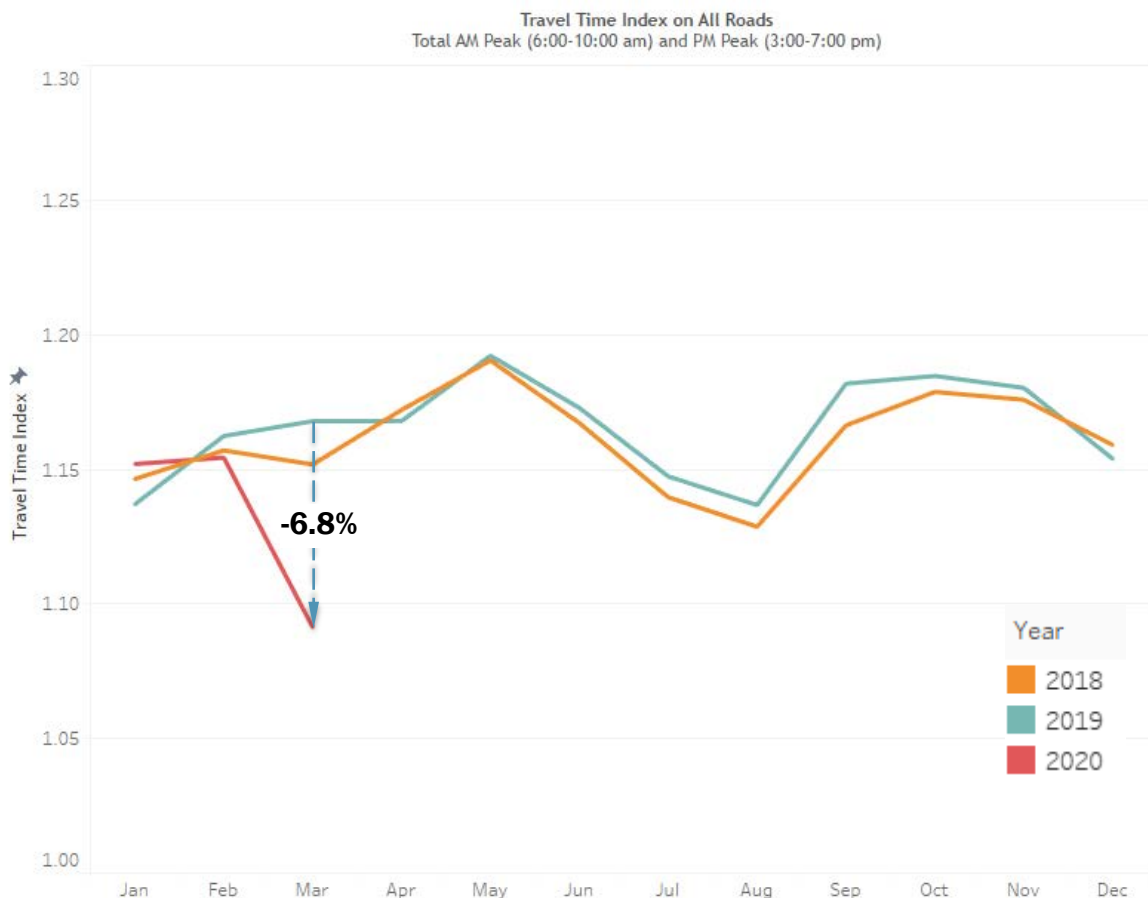


Figure 5 Travel Time Index on All Roads

The most obvious traffic congestion relief could be experienced while driving on the regional interstates in March 2020. During the month, TTI on the interstate system has reached to an unprecedented level at 1.13. It implied an about 20% reduction (as shown in Figure 6) compared to the same month of 2019.

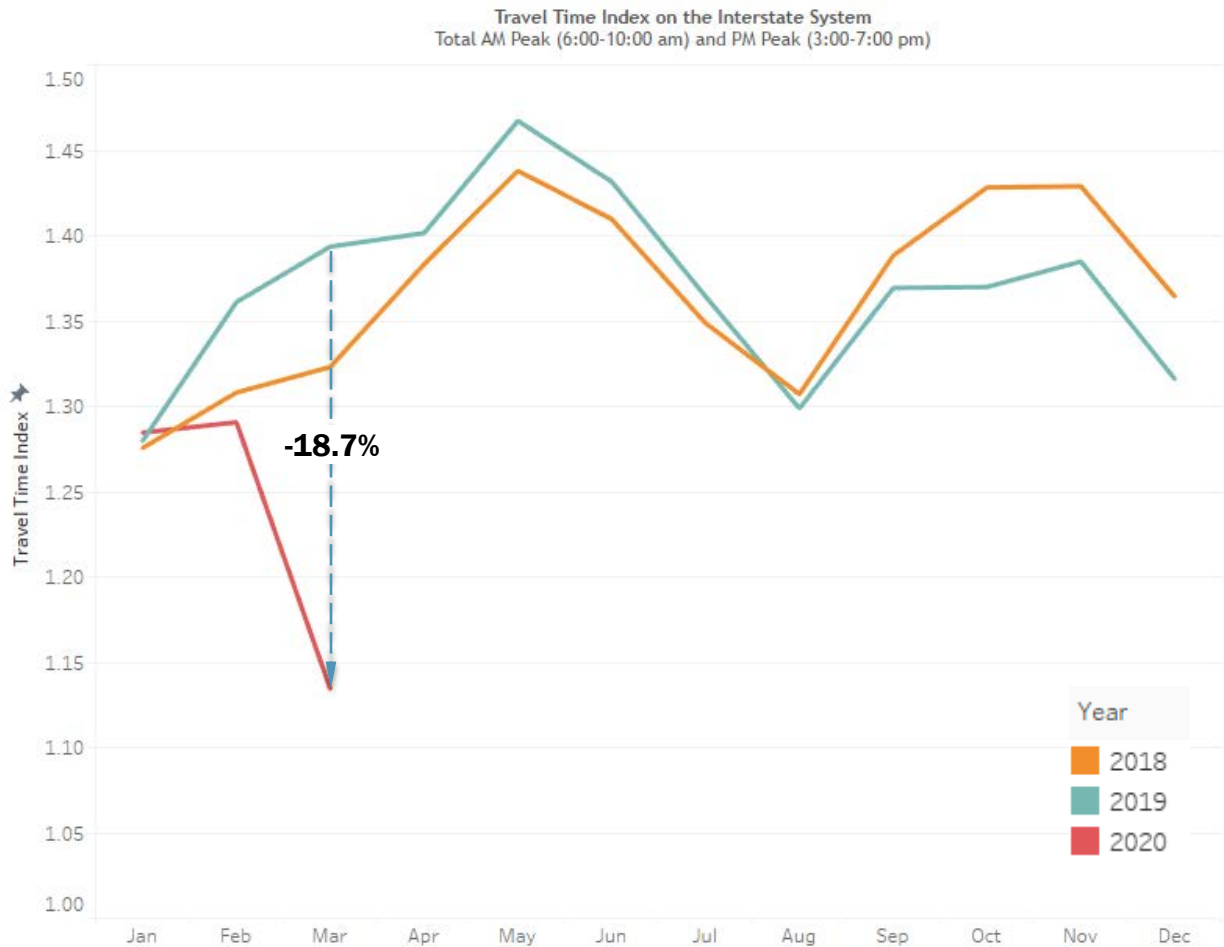


Figure 6 Travel Time Index on the Interstate System

It will be important to continue to track the extraordinary impacts of the pandemic on travel and congestion in the region, to understand the severity of the impacts, to discover the magnitude of congestion changes that result from changes in people’s travel behavior, and hopefully to discern trends for recovery from the pandemic as indicated by travel patterns.





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777 North Capitol Street NE, Suite 300  
Washington, DC 20002

[www.mwcog.org](http://www.mwcog.org)