

CONGESTION REPORT

1st Quarter 2021

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

April 2021



National Capital Region
Transportation Planning Board

CONGESTION REPORT

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ABOUT THE TPB

The National Capital Region Transportation Planning Board (TPB) is the federally designated metropolitan planning organization (MPO) for metropolitan Washington. It is responsible for developing and carrying out a continuing, cooperative, and comprehensive transportation planning process in the metropolitan area. Members of the TPB include representatives of the transportation agencies of the states of Maryland and Virginia and the District of Columbia, 24 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 at the Metropolitan Washington Council of Governments (COG).

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TABLE OF CONTENTS

CONGESTION – TRAVEL TIME INDEX (TTI)	1
RELIABILITY – PLANNING TIME INDEX (PTI)	2
TOP 10 BOTTLENECKS	3
CONGESTION MAPS	9
2021Q1 SPOTLIGHT: PERFORMANCE OF THE ROADS AS COVID-19 VACCINATIONS BECOME AVAILABLE	11

FIGURES AND TABLES

FIGURE 1 MONTHLY TRAVEL TIME INDEX FOR TOTAL AM PEAK (6:00-10:00 AM) AND PM PEAK (3:00-7:00 PM)	1
FIGURE 2 MONTHLY PLANNING TIME INDEX FOR TOTAL AM PEAK (6:00-10:00 AM) AND PM PEAK (3:00-7:00 PM)	2
FIGURE 3. TRAVEL TIME INDEX DURING WEEKDAY 8: 00-9:00 A.M. IN 1ST QUARTER OF 2021	9
FIGURE 4. TRAVEL TIME INDEX DURING WEEKDAY 5:00-6:00 P.M. IN 1ST QUARTER OF 2021	10

CONGESTION – TRAVEL TIME INDEX (TTI)

Interstate System

TTI 1st Quarter 2021: **1.12** ↓9.3% or -0.12¹
 TTI Trailing 4 Quarters: **1.10** ↓18.3% or -0.25²

Non-Interstate NHS³

TTI 1st Quarter 2021: **1.11** ↓3.7% or -0.04
 TTI Trailing 4 Quarters: **1.08** ↓8.3% or -0.10

Transit-Significant⁴

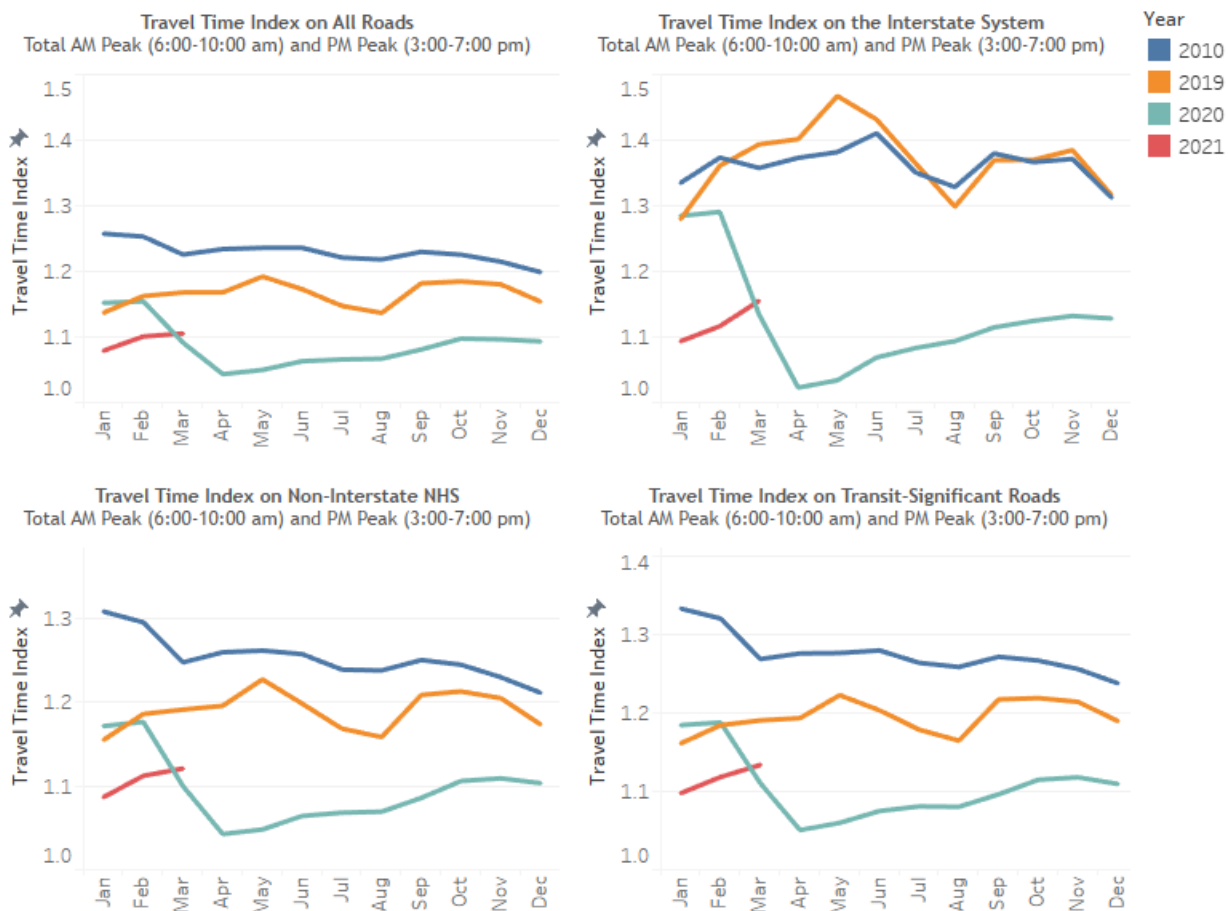
TTI 1st Quarter 2021: **1.12** ↓3.8% or -0.04
 TTI Trailing 4 Quarters: **1.09** ↓8.1% or -0.1

All Roads

TTI 1st Quarter 2021: **1.10** ↓3.3% or -0.04
 TTI Trailing 4 Quarters: **1.08** ↓7.0% or -0.08

¹ Compared to 1st Quarter 2020; 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)



Source: TPB

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 1st Quarter 2020: **1.41** ↓12.2% or -0.20¹
 PTI Trailing 4 Quarters: **1.32** ↓27.2% or -0.49²

Non-Interstate NHS³

PTI 1st Quarter 2020: **1.22** ↓7.9% or -0.11
 PTI Trailing 4 Quarters: **1.17** ↓15.9% or -0.22

Transit-Significant⁴

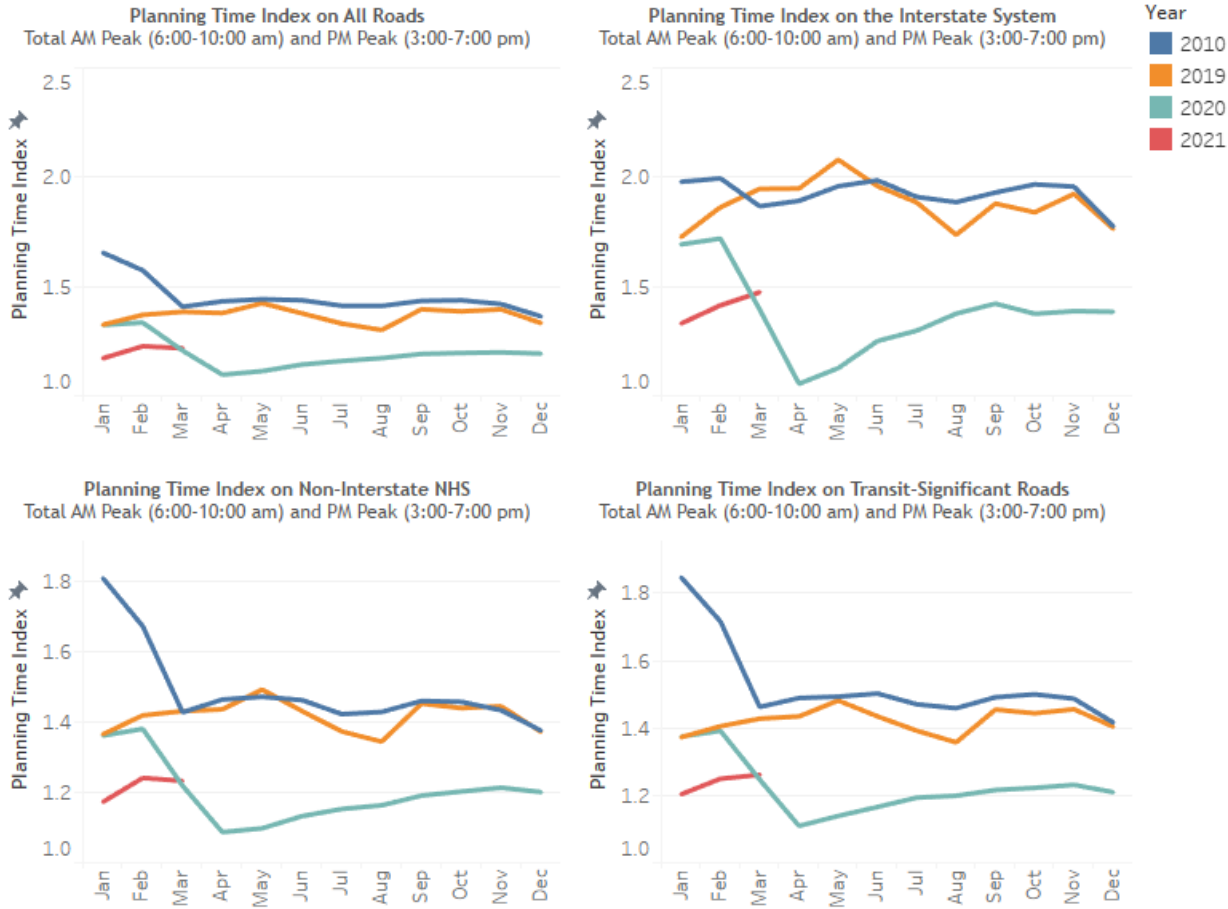
PTI 1st Quarter 2020: **1.24** ↓7.5% or -0.1
 PTI Trailing 4 Quarters: **1.20** ↓14.6% or -0.21

All Roads

PTI 1st Quarter 2020: **1.21** ↓6.5% or -0.08
 PTI Trailing 4 Quarters: **1.17** ↓13.0% or -0.18

¹ Compared to 1st Quarter 2020; 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)



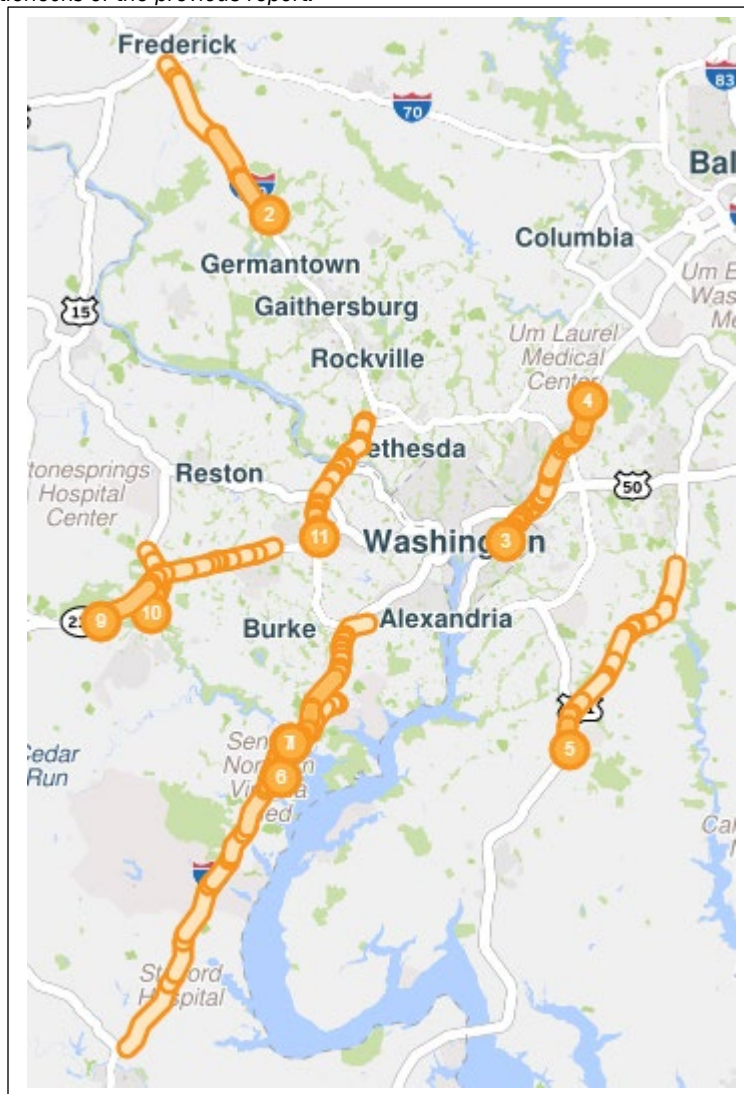
Source: TPB

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

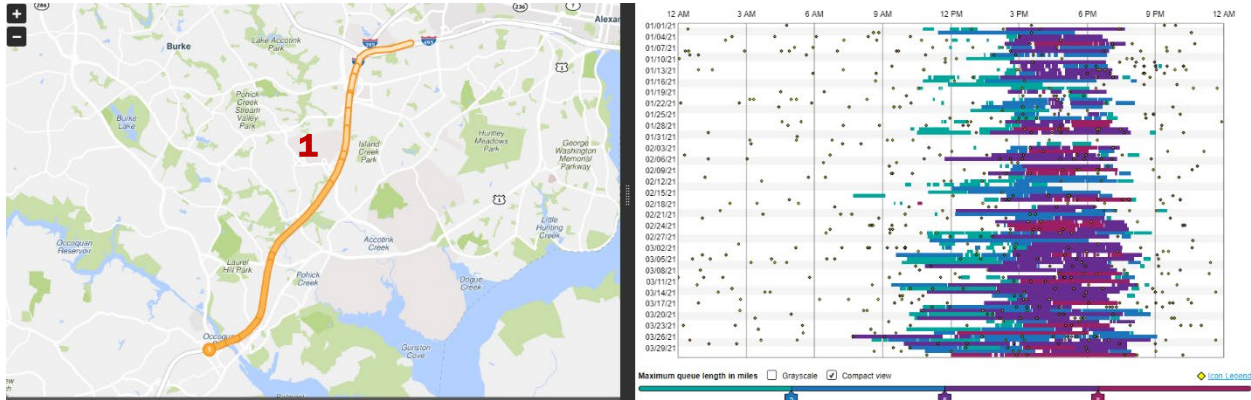
Rank (Last Quarter Rank)	Location	Average duration	Average max length (miles)	Total duration	Impact factor
1 (1)	I-95 S @ VA-123/EXIT 160	5 h 42 m	4.25	21 d 9 h 13 m	96,807
2 (**)	I-270 S @ MD-121	1 h 55 m	7.1	7 d 5 h 35 m	70,933
3 (6)	DC-295 S @ E CAPITOL ST	6 h 43 m	1.33	25 d 4 h 55 m	45,870
4 (7)	BW PKWY N @ POWDER MILL RD	3 h 13 m	2.97	12 d 2 h 40 m	40,413
5 (5)	US-301 S @ MCKENDREE RD/CEDARVILLE RD	3 h 1 m	2.33	11 d 8 h 9 m	36,655
6 (10)	US-1 S @ OPITZ BLVD/REDDY DR	2 h 31 m	2.53	9 d 10 h 25 m	33,254
7 (4)	I-95 N @ VA-123/EXIT 160	1 h 24 m	3.92	5 d 6 h 59 m	28,328
8 (2)	I-66 W @ VA-234/VA-234-BR/EXIT 47	57 m	5.17	3 d 13 h 31 m	25,302
9 (**)	VA-28 S @ VA-658/COMPTON RD	2 h 3 m	1.93	7 d 17 h 46 m	20,491
10 (**)	I-495 CCW @ I-66/EXIT 49	2 h 1 m	1.68	7 d 14 h 7 m	19,386

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

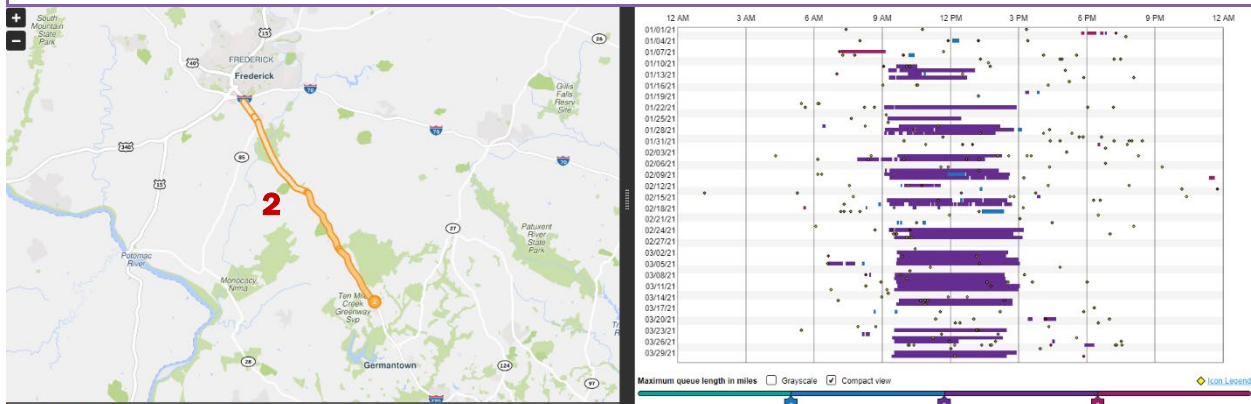


Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor*
1	I-95 S @ VA-123/EXIT 160	5 h 42 m	4.25	21 d 9 h 13 m	96,807

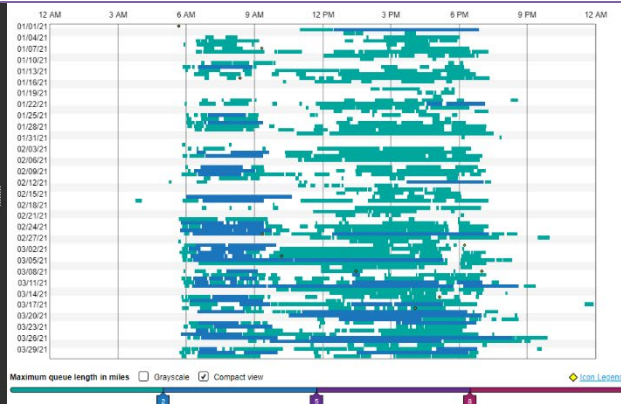
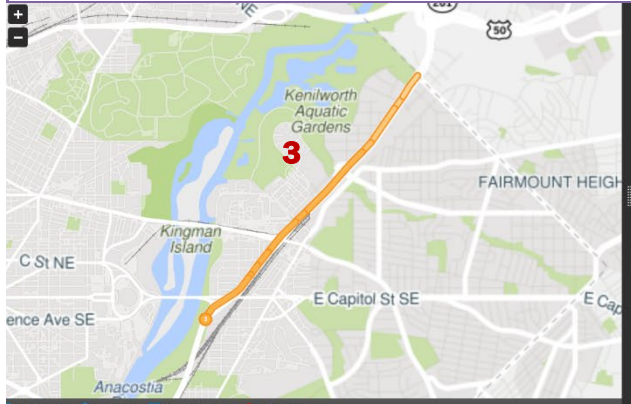
* The Impact Factor of a bottleneck is simply the product of the Average Duration (minutes), Average Max Length (miles) and the number of occurrences.



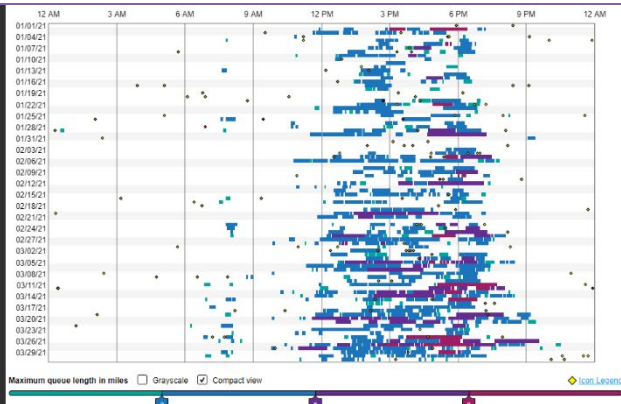
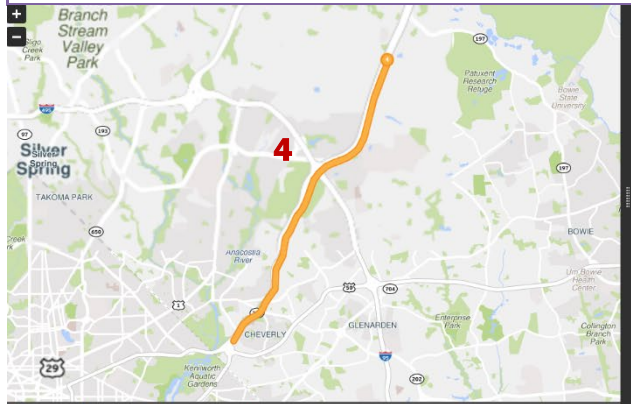
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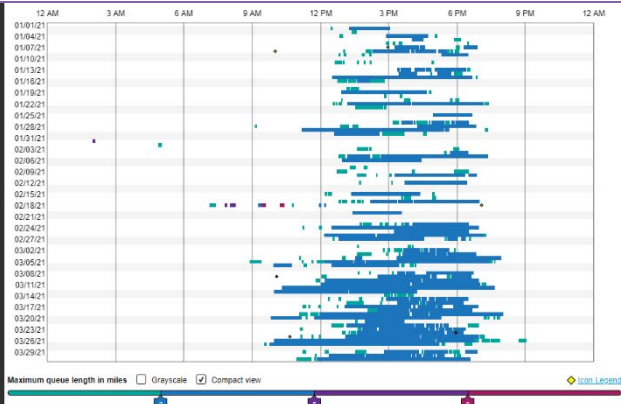
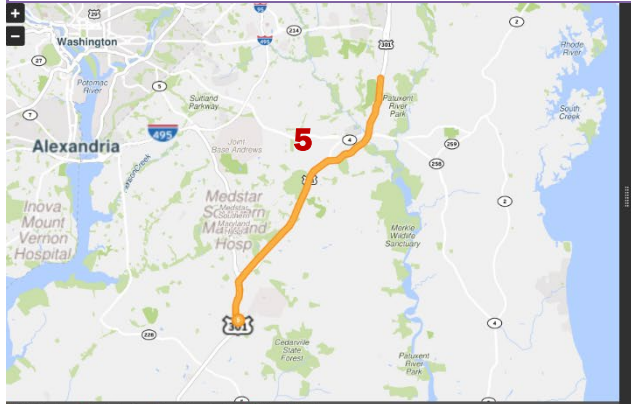
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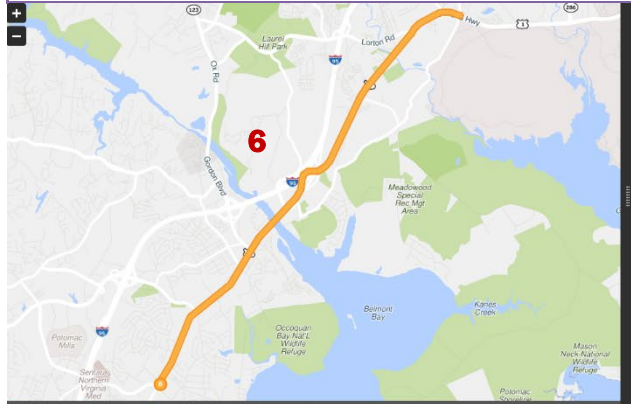
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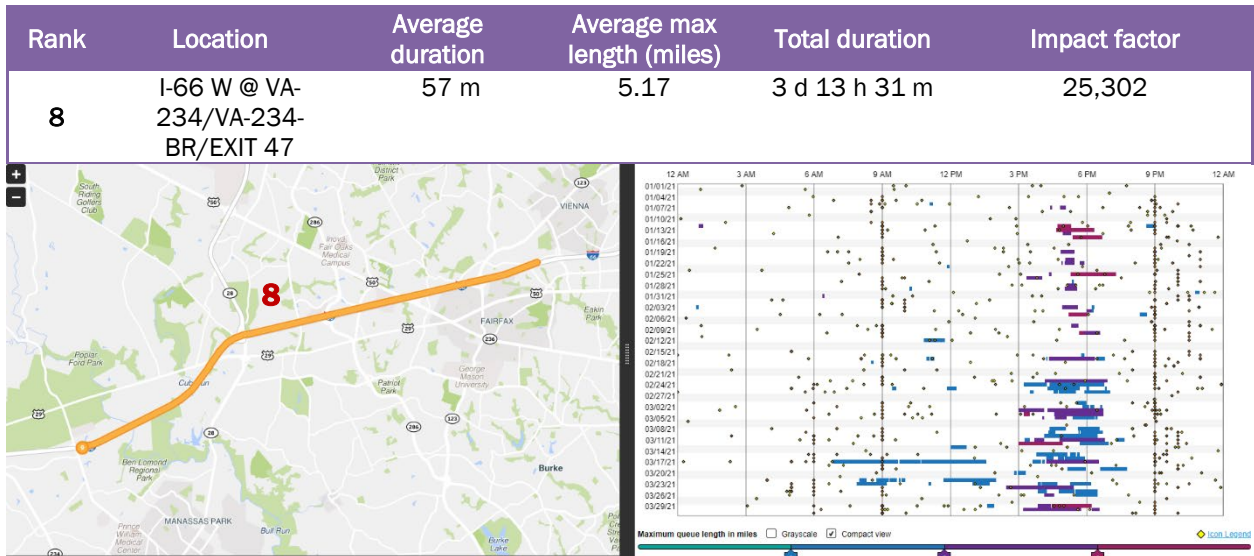
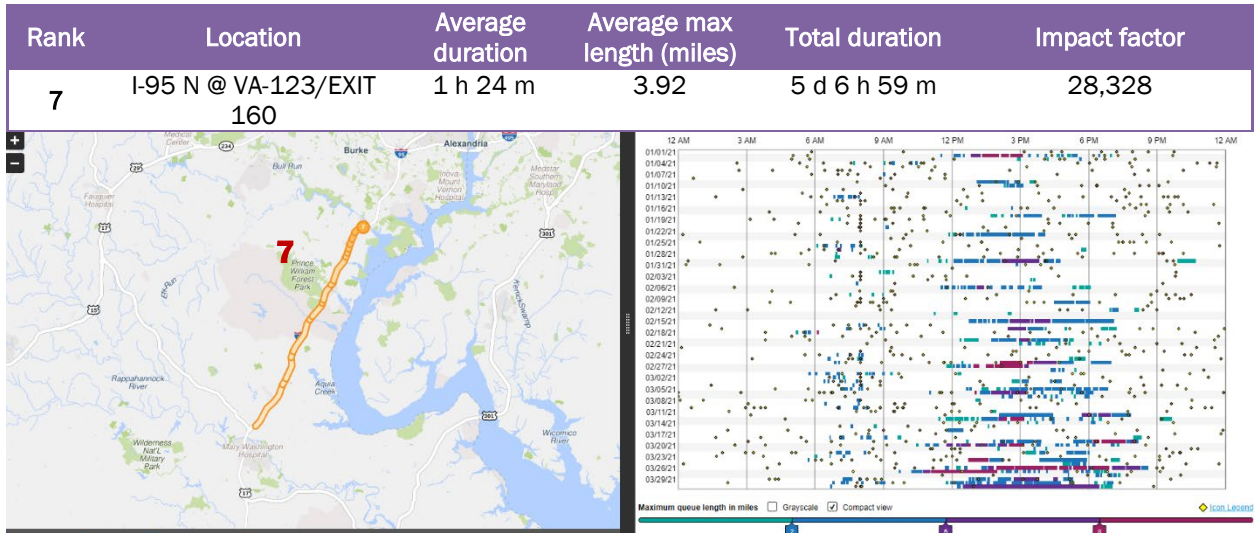


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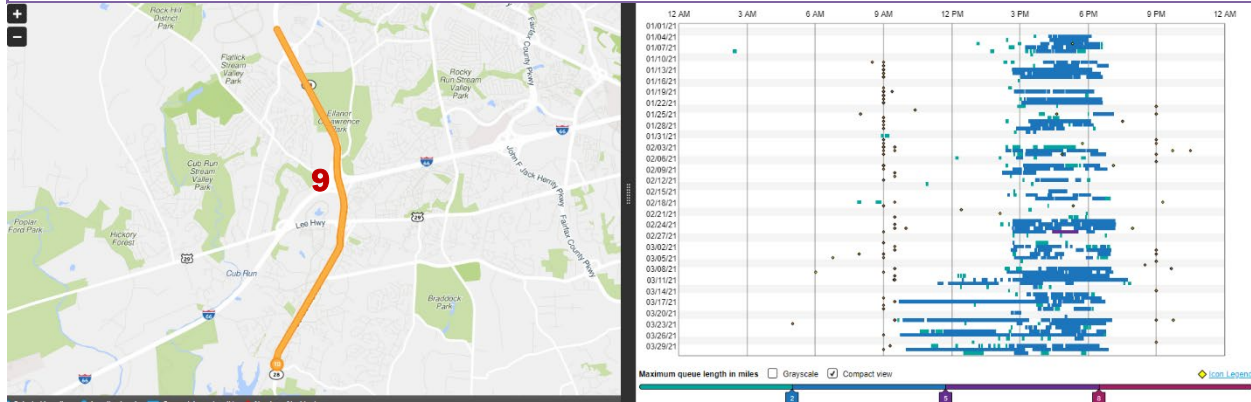


Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor
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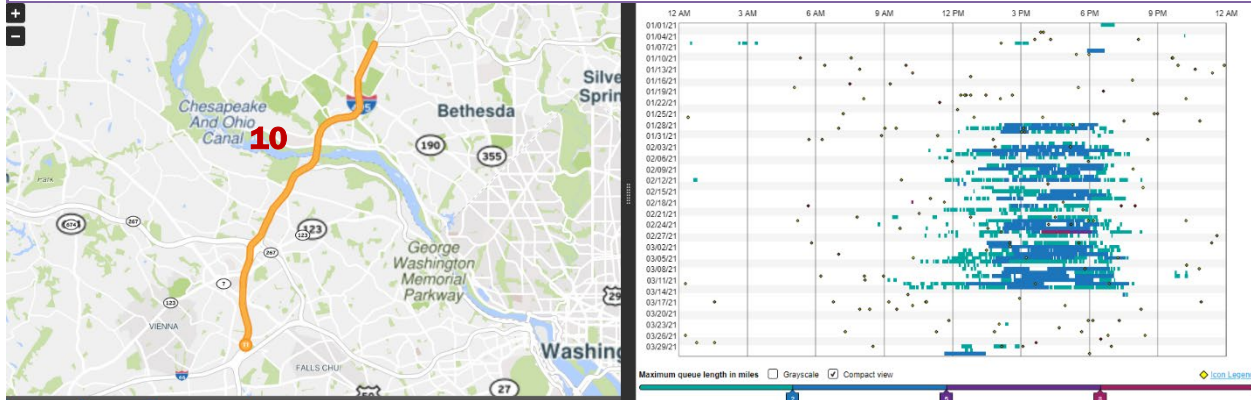




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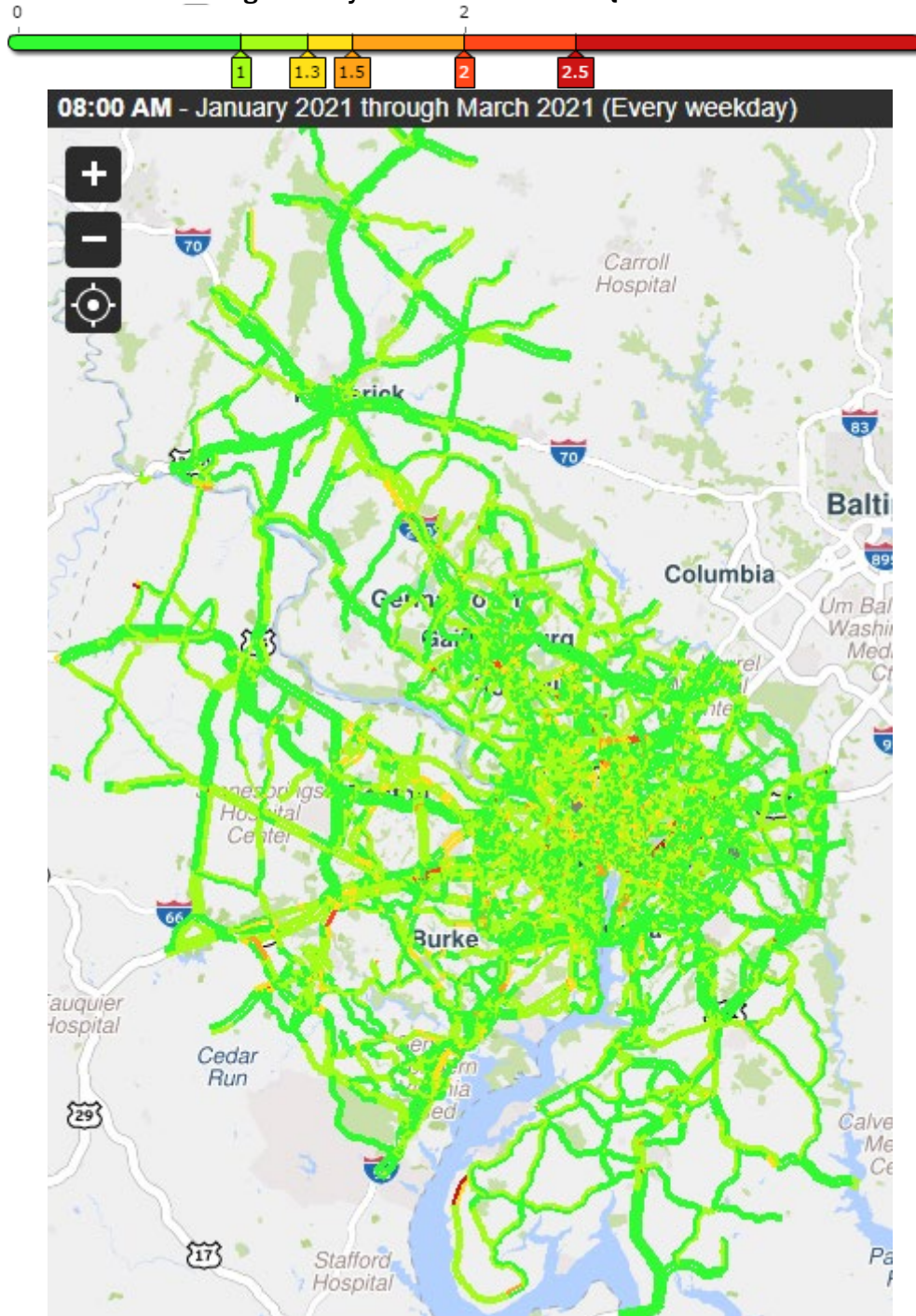


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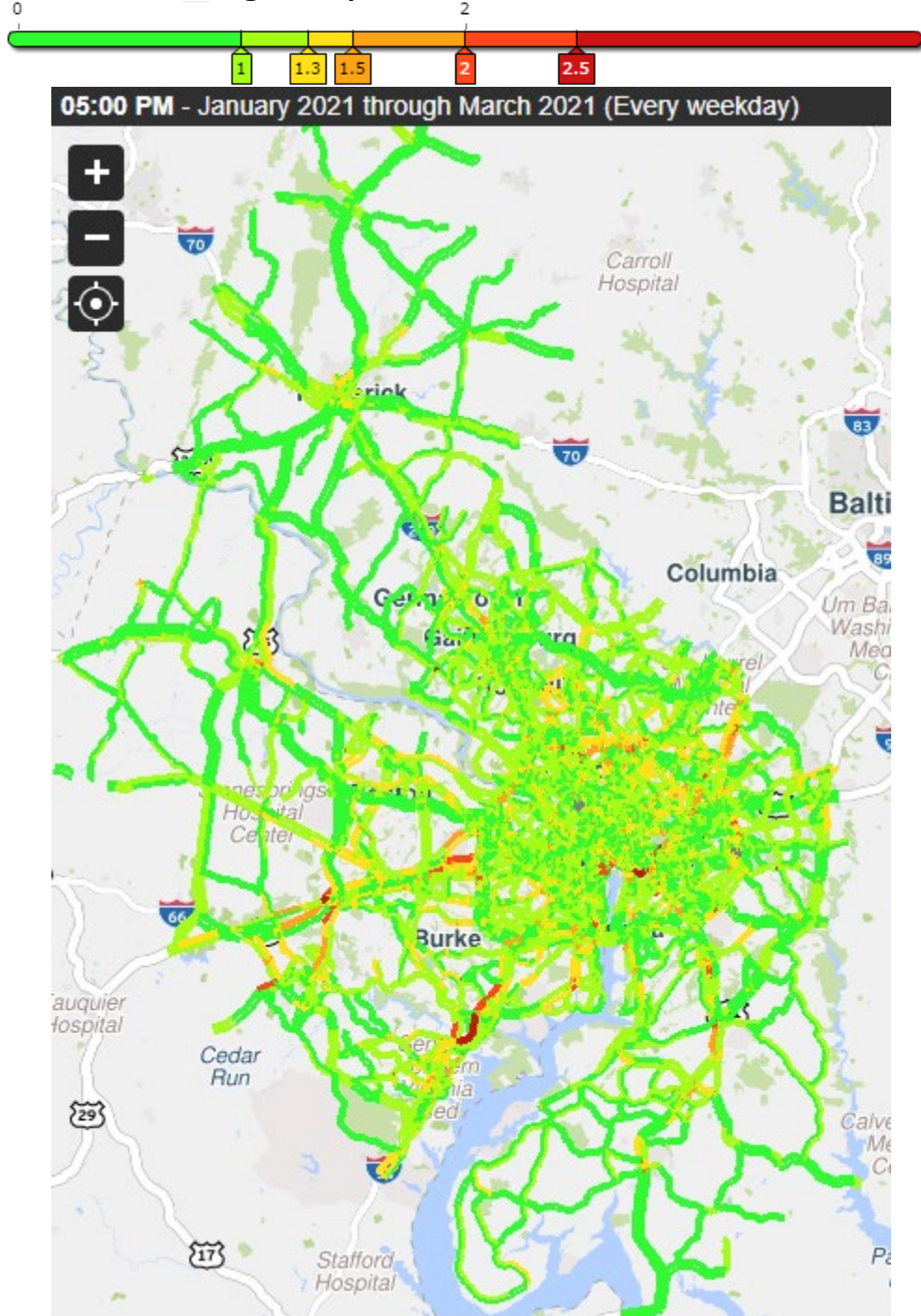
CONGESTION MAPS

Figure 3. Travel Time Index during weekday 8: 00-9:00 A.M. in 1st Quarter of 2021



Source: University of Maryland CATT Lab

Figure 4. Travel Time Index during weekday 5:00-6:00 P.M. in 1st Quarter of 2021



Source: University of Maryland CATT Lab

2021Q1 SPOTLIGHT: PERFORMANCE OF THE ROADS AS COVID-19 VACCINATIONS BECOME AVAILABLE

The first quarter of 2021 saw the first widespread vaccination of larger segments of the population against the COVID-19 virus. Travel time index (TTI) values increased slightly in the quarter on the observed road networks, indicating a slight decline in speeds, but were still well below values observed in the first quarter of 2019. Travel reliability (planning time index, or PTI) also increased, but was still below what was recorded in the first quarter of 2019.

The top ten congested parts of the regional road network were mostly those that have been reported in these reports prior to 2020. Seven of the top ten were on roads with full access control¹. The first entry on the list is nearly always near the top of such lists – I-95 southbound (conventional lanes) between the Springfield Interchange and VA-123 (Gordon Boulevard).

Plots of traffic conditions during the first quarter of 2021 in the morning weekday hour of 8 AM to 9 AM (Figure 3) shows relatively few locations with severe congestion. In the afternoon on weekdays, 5 PM to 6 PM (Figure 4), there was more congestion visible around the region.

¹ Interstates, expressways and federal parkways.