

CONGESTION REPORT

4th Quarter 2021

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

January 2022



National Capital Region
Transportation Planning Board

CONGESTION REPORT

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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).

CREDITS

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CONGESTION – TRAVEL TIME INDEX (TTI)

Interstate System

TTI 4th Quarter 2021: **1.27** ↑12.4% or 0.14¹
 TTI Trailing 4 Quarters: **1.21** ↑7.4% or 0.08²

Non-Interstate NHS³

TTI 4th Quarter 2021: **1.15** ↑3.7% or 0.04
 TTI Trailing 4 Quarters: **1.12** ↑2.3% or 0.03

Transit-Significant⁴

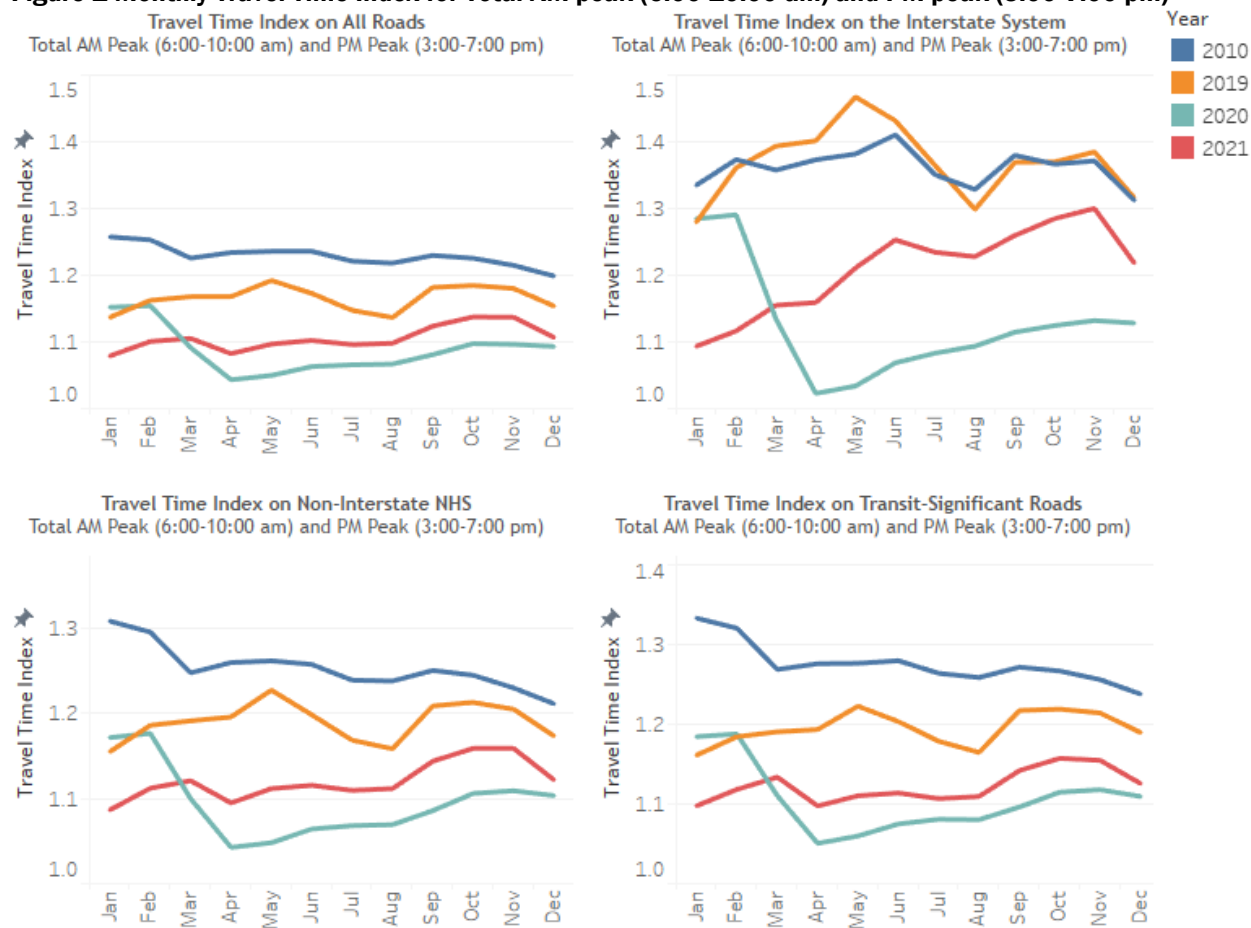
TTI 4th Quarter 2021: **1.15** ↑2.9% or 0.03
 TTI Trailing 4 Quarters: **1.12** ↑1.5% or 0.02

All Roads

TTI 4th Quarter 2021: **1.13** ↑2.9% or 0.03
 TTI Trailing 4 Quarters: **1.11** ↑1.6% or 0.02

¹ Compared to 4th 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 4th Quarter 2021: **1.65** ↑19.5% or 0.27¹
 PTI Trailing 4 Quarters: **1.56** ↑13.5% or 0.19²

Non-Interstate NHS³

PTI 4th Quarter 2021: **1.29** ↑7.4% or 0.09
 PTI Trailing 4 Quarters: **1.52** ↑3.8% or 0.05

Transit-Significant⁴

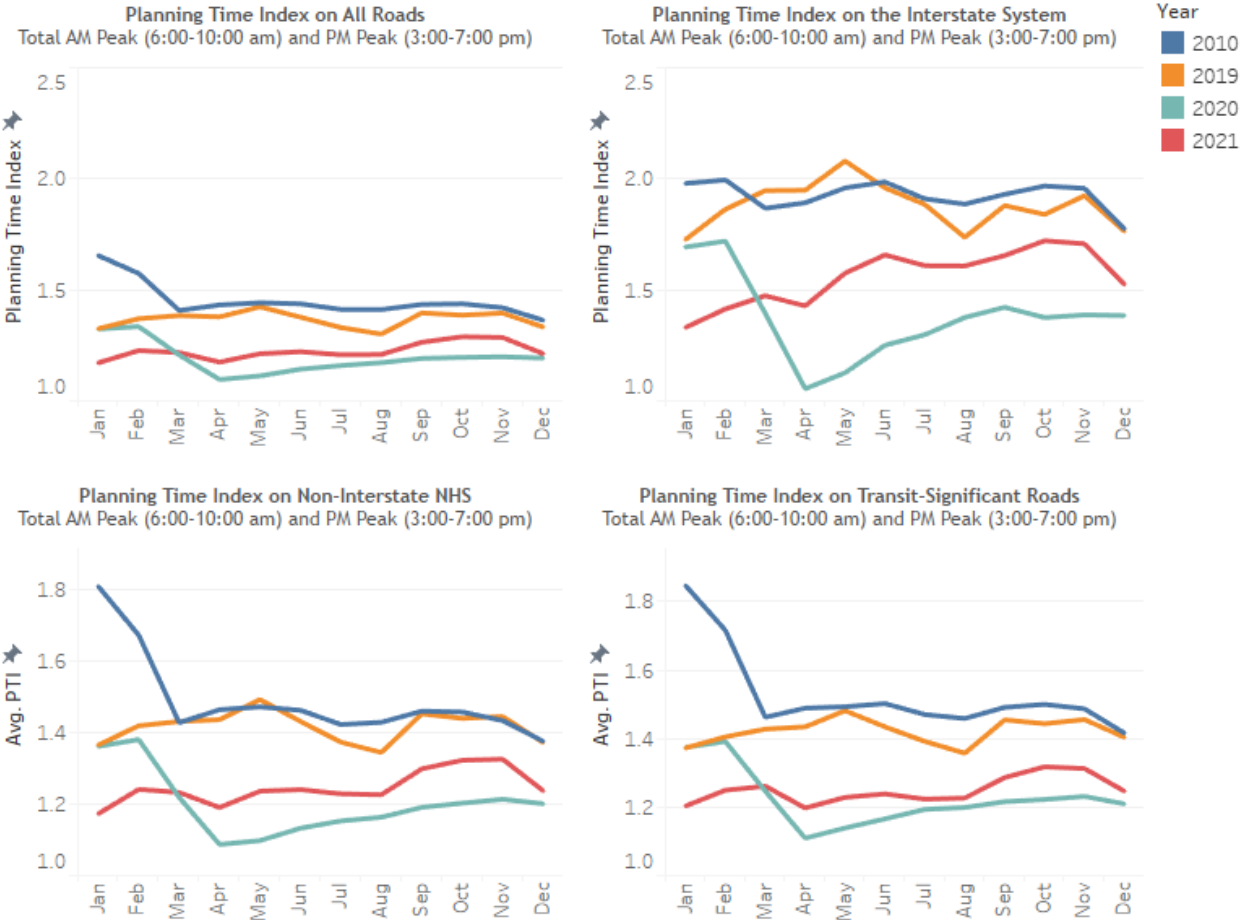
PTI 4th Quarter 2021: **1.29** ↑5.8% or 0.07
 PTI Trailing 4 Quarters: **1.25** ↑2.0% or 0.02

All Roads

PTI 4th Quarter 2021: **1.26** ↑5.6% or 0.07
 PTI Trailing 4 Quarters: **1.22** ↑2.6% or 0.03

¹ Compared to 4th 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)



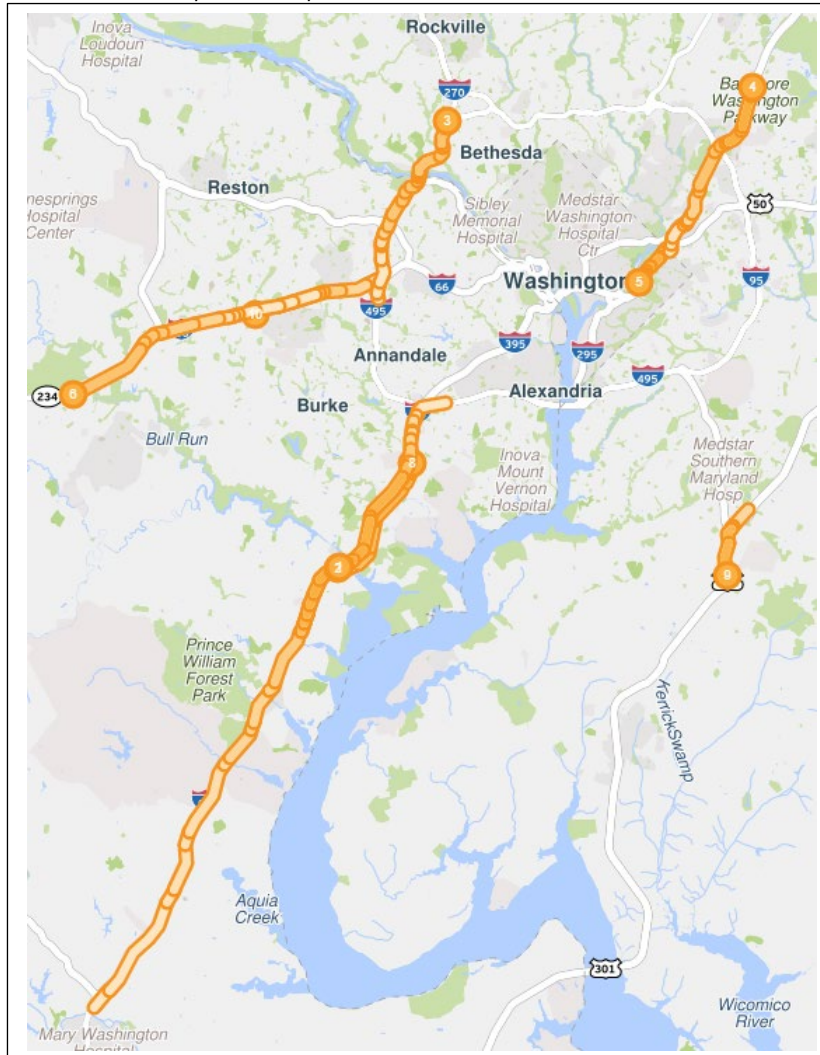
Source: TPB

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

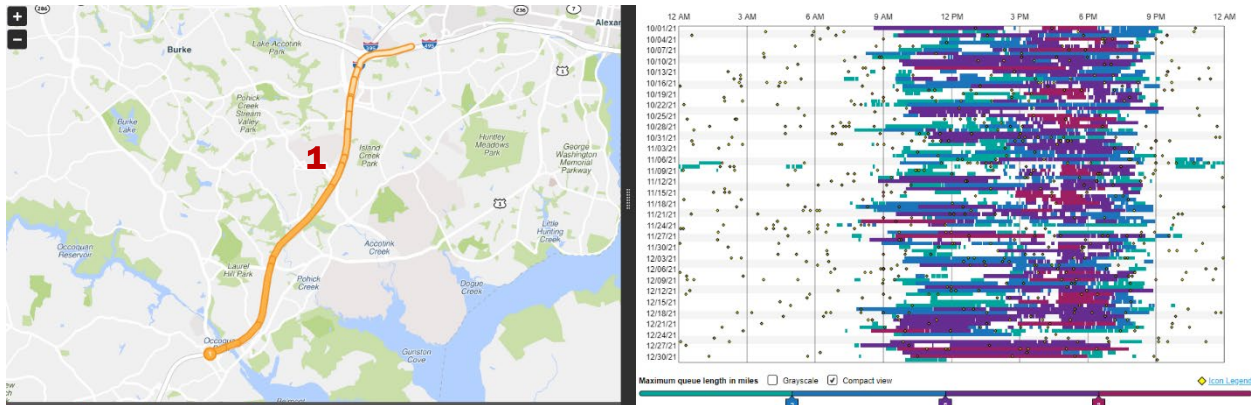
Rank (Last Quarter Rank)	Location	Average duration	Average max length (miles)	Total duration	Impact factor
1 (1)	I-95 S @ VA-123/EXIT 160	8 h 7 m	4.19	31 d 3 h 56 m	140,060
2 (2)	I-95 N @ VA-123/EXIT 160	4 h 12 m	4.43	16 d 3 h 25 m	99,127
3 (7)	I-495 CW @ I-270-SPUR	2 h 13 m	6.01	8 d 12 h 3 m	73,887
4 (**)	BW PKWY N @ POWDER MILL RD	5 h 48 m	2.88	22 d 6 h 12 m	72,318
5 (3)	DC-295 S @ E CAPITOL ST	8 h 58 m	1.65	34 d 9 h 53 m	69,182
6 (14)	I-66 W @ VA-234/VA-234-BR/EXIT 47	1 h 35 m	6.88	6 d 2 h 55 m	57,002
7 (5)	I-270 S @ MD-109/EXIT 22	2 h 23 m	4.29	9 d 3 h 33 m	53,709
8 (4)	I-95 N @ VA-617/BACKLICK RD/EXIT 167	2 h 20 m	4.12	9 d 8 m	51,685
9 (8)	US-301 S @ MCKENDREE RD/CEDARVILLE RD	3 h 57 m	2.31	15 d 4 h 40 m	49,987
10 (**)	I-66 W @ US-50/EXIT 57	3 h 13 m	3.21	12 d 9 h 11 m	47,768

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

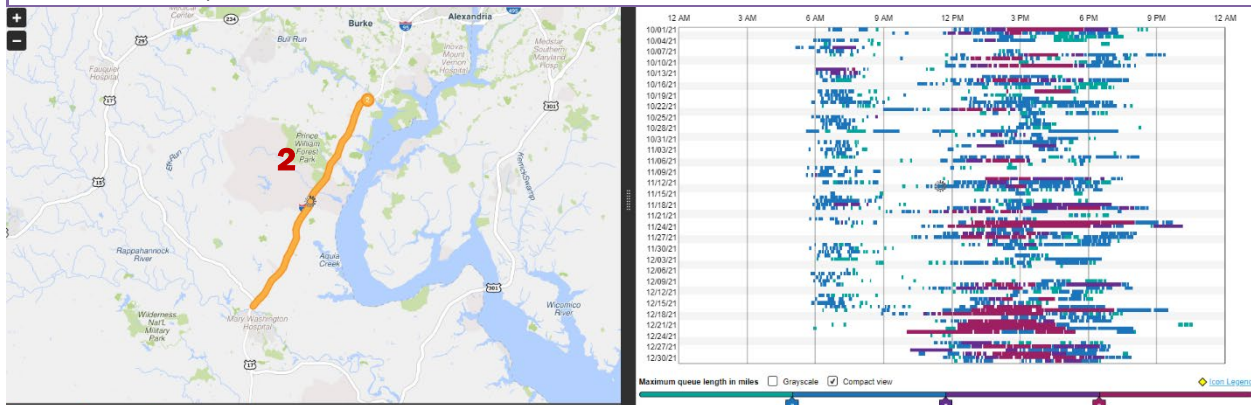


Rank	Location	Average duration	Average max length (miles)	Total duration	Impact factor*
1	I-95 S @ VA-123/EXIT 160	8 h 7 m	4.19	31 d 3 h 56 m	140,060

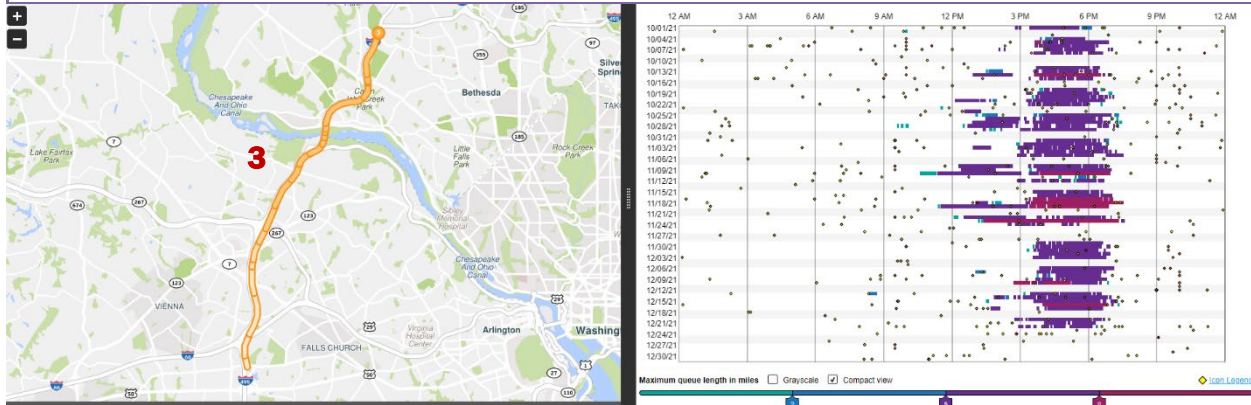
* The Impact Factor of a bottleneck is simply the product of the Average Duration (minutes), Average Max Length (miles) and the number of occurrences.



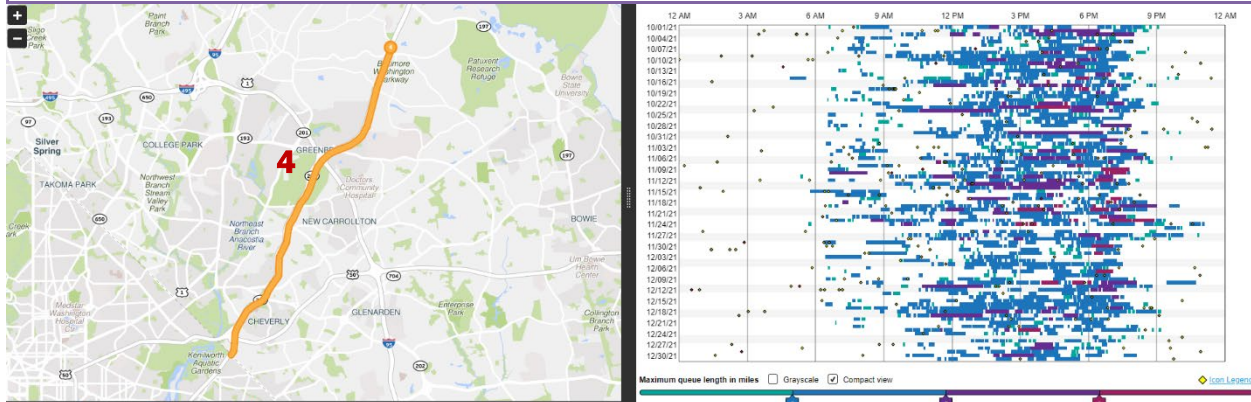
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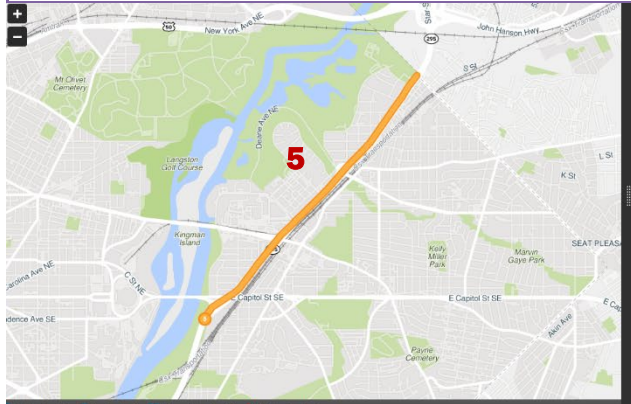
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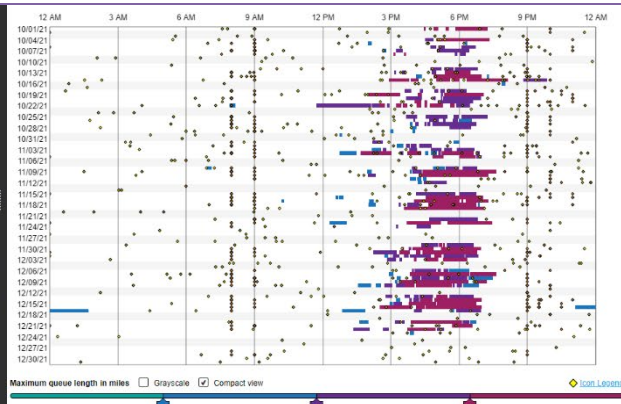
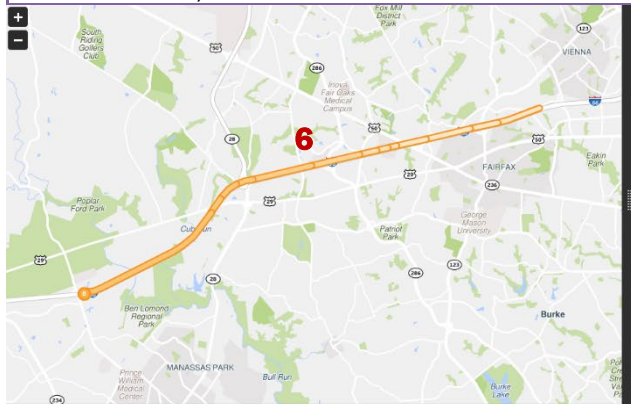
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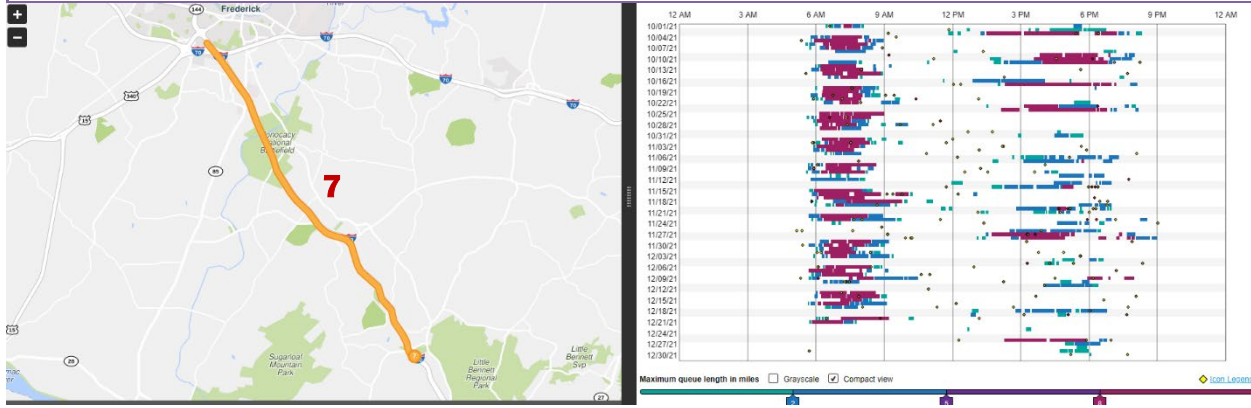
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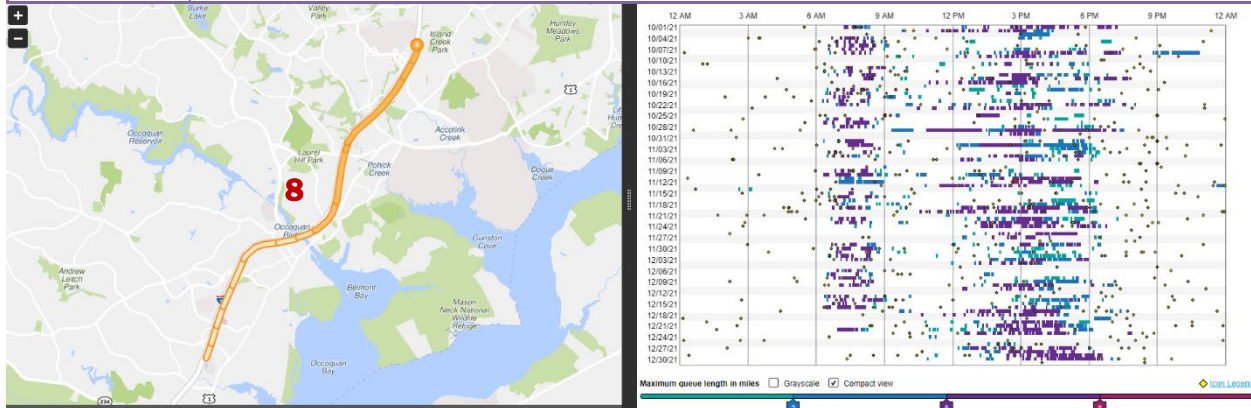
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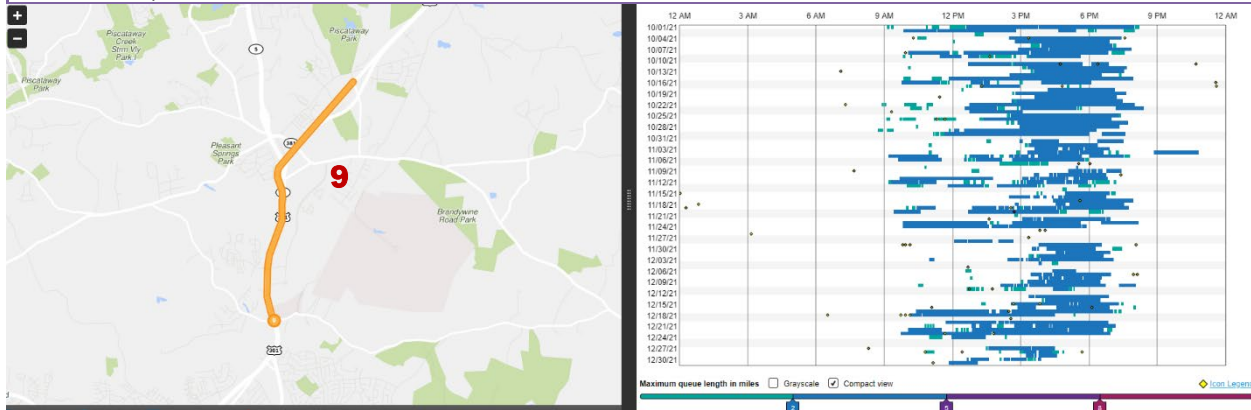
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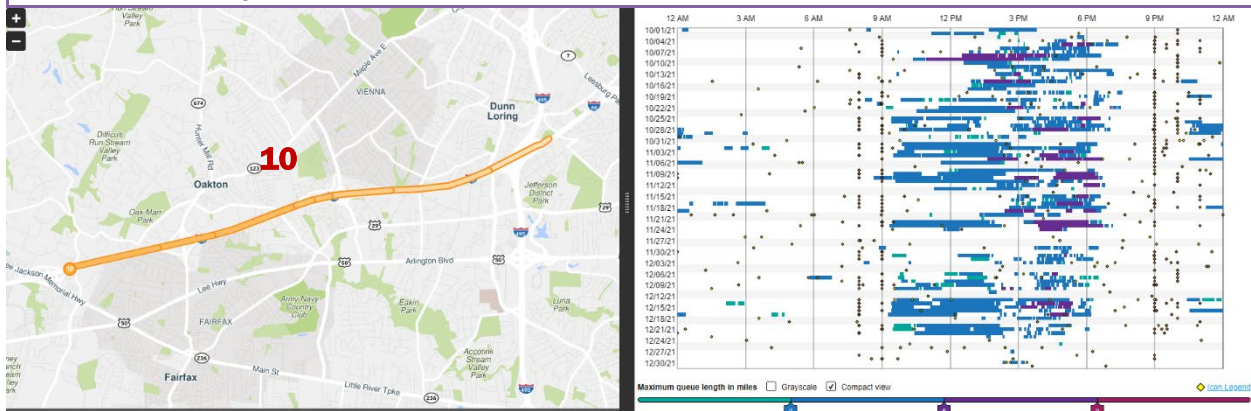
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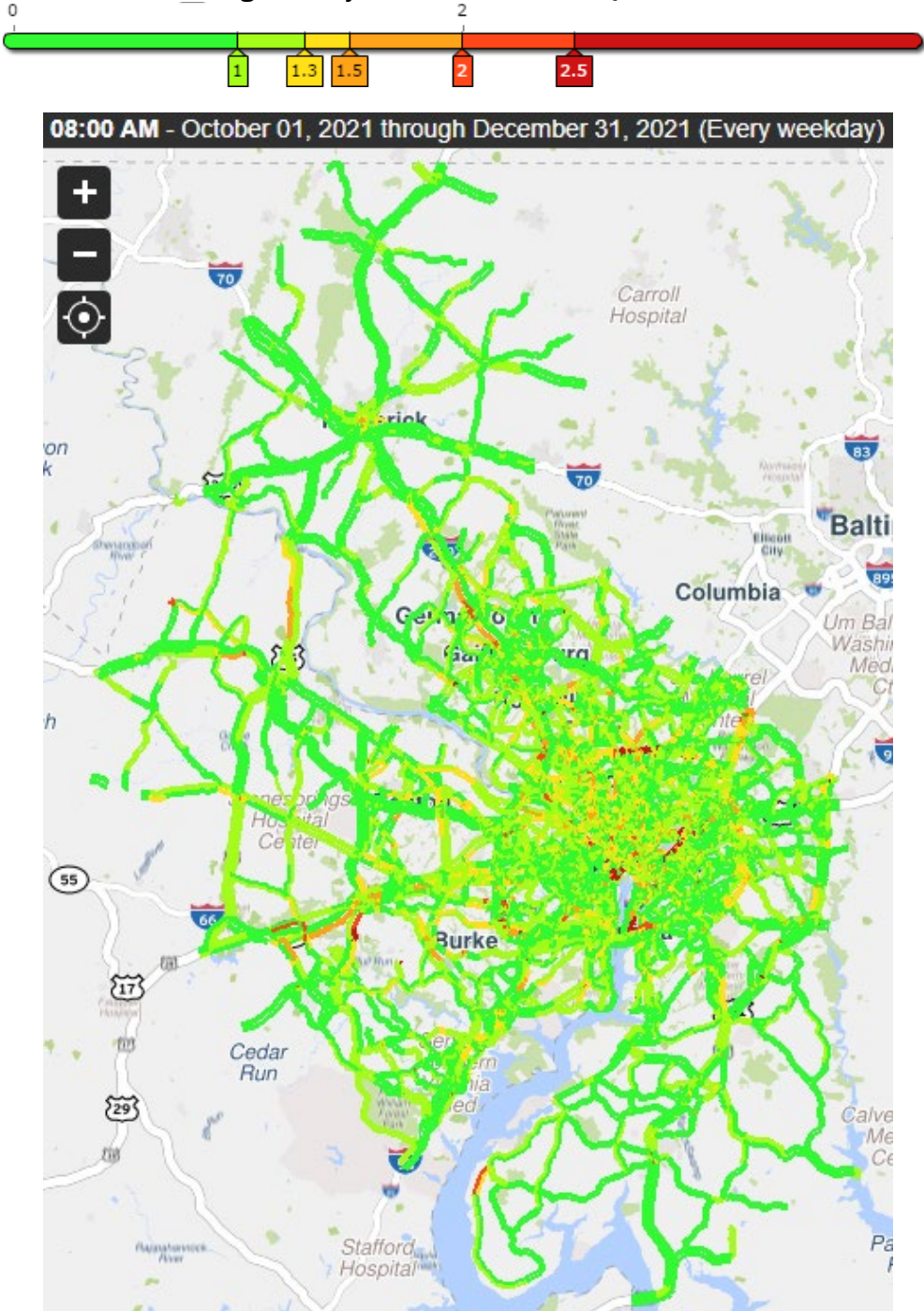


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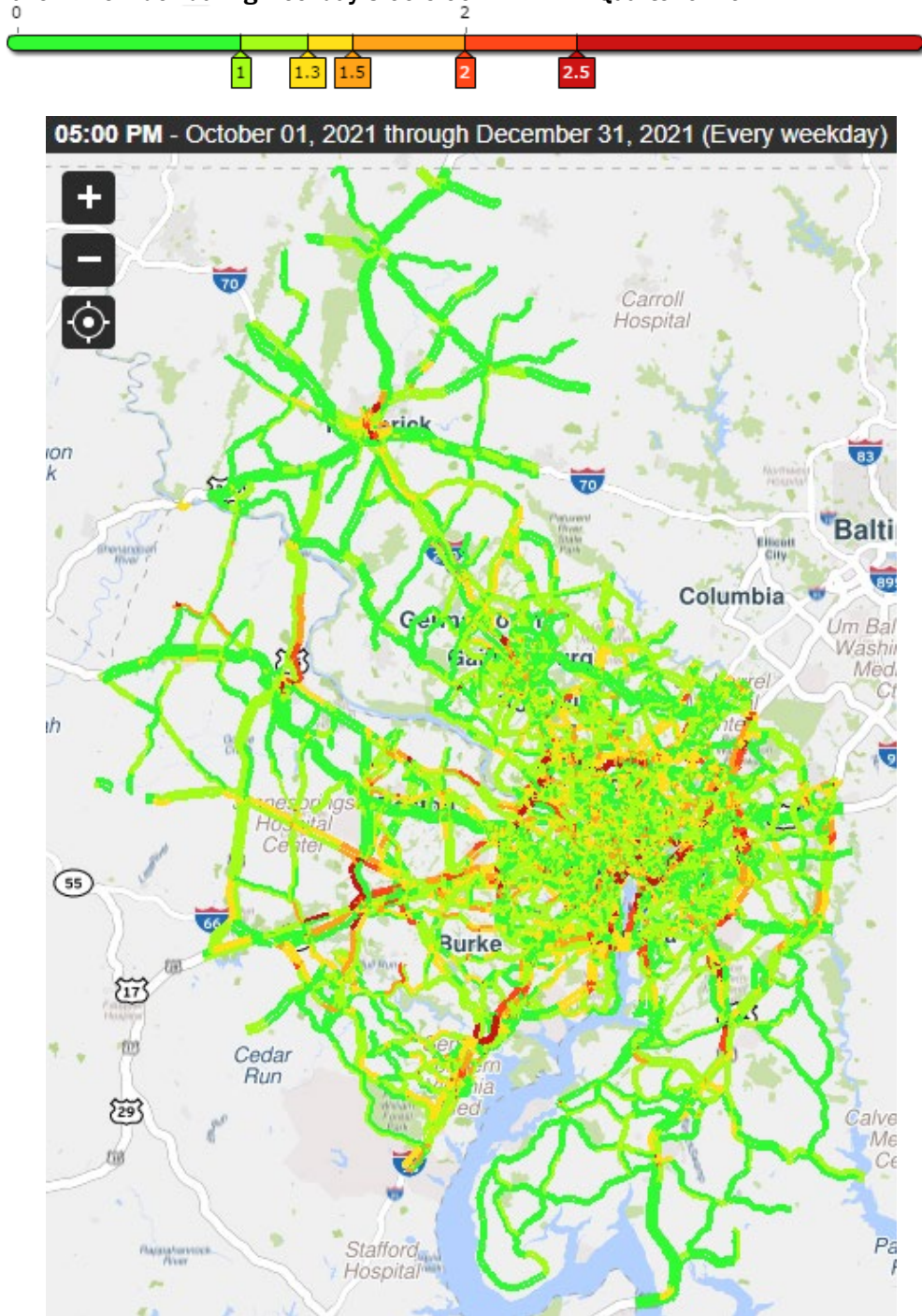
CONGESTION MAPS

Figure 3. Travel Time Index during weekday 8: 00-9:00 A.M. in 4th Quarter of 2021



Source: University of Maryland CATT Lab

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



Source: University of Maryland CATT Lab

2021Q4 SPOTLIGHT

The final quarter (October, November and December) of calendar year 2021 continued traffic congestion trends observed earlier in the year:

- More regionwide congestion as measured by travel time index (TTI) than in fourth quarter 2020 but less than what was observed in fourth quarter 2019 (see Figure 1); and
- Greater variability of travel speeds as measured by planning time index (PTI) than in fourth quarter 2020 but less than what was observed in fourth quarter 2019 (Figure 2).

The Top Ten locations for congestion included the familiar first entry of I-95 southbound south of Springfield, Virginia to the head of congestion at VA-123 (Gordon Boulevard) and two more entries on I-95 near this location.

These ten locations carry some degree of traffic moving through the region, including the one arterial system link in this list, US-301 (Crain Highway) in southern Prince George's County.

In general, the most-severely congested times on these links is in the afternoons.