



Quarterly Congestion Analysis Report. Top 10 Bottlenecks

3rd Quarter 2020

December, 2020



INTRODUCTION

About the Region

Located in the heart of the Mid-Atlantic on the east coast, the Baltimore region includes:



The Baltimore region is the nation's 19th largest market, with over 2.5 million people. The market also ranks among the top 20 in the country in the number of households, total effective buying income and retail sales.

Baltimore Metropolitan Region



Prepared by
 Transportation Planning Division
 Projected Coordinate System: NAD 1983 State Plane (ft)
 Data Source: BMC, © NAVTEQ 2016, TIGER/Line®, MTA
 Printed - April 2017



How are bottleneck conditions tracked?

- **Rank** - The ranked position of the location according to the current table ordering by **Base Impact** - the aggregation of queue length over time for congestion at each location in mile minutes. It is then weighted by **Total Delay** - Raw speed drop weighted by VMT factor.
- **Average max length** - The average maximum length, in miles, of queues formed by congestion originating at the location
- **Average daily duration** - The average amount of time per day that congestion is identified originating at the location
- **All Events/Incidents** - The number of traffic events and incidents that occurred within the space of the bottleneck at any time during the time period being analyzed
- **Volume Estimate** - AADT weighted by queue length

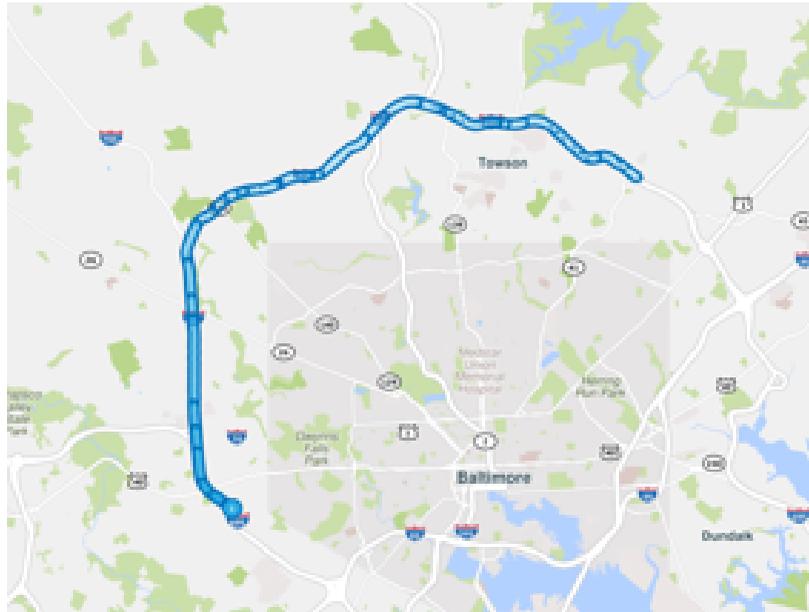
the aggregation of queue length over time for congestion at each location in mile minutes

Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	I-695 OL @ EDMONDSON AVE/EXIT 14	5.01	2 h 43 m	834	88946
2	I-695 IL @ I-83/MD-25/EXIT 23	3.53	2 h 56 m	463	95048
3	I-695 IL @ I-70/EXIT 16	2.11	2 h 54 m	233	95068
4	I-695 OL @ US-40/EXIT 15	3.57	1 h 48 m	766	89650
5	I-95 N @ MD-100/EXIT 43	4.23	1 h 22 m	310	95604
6	I-95 N @ MD-295/BALTIMORE WASHINGTON PKWY/EXIT 52	2.26	1 h 50 m	641	93260
7	MD-295 S @ POWDER MILL RD	5.26	1 h 24 m	318	45940
8	I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29	3.71	53 m	496	85789
9	I-95 N @ MD-175/EXIT 41	3.23	1 h 12 m	243	95344
10	I-695 OL @ I-83/MD-25/EXIT 23	3.48	1 h 06 m	484	79378

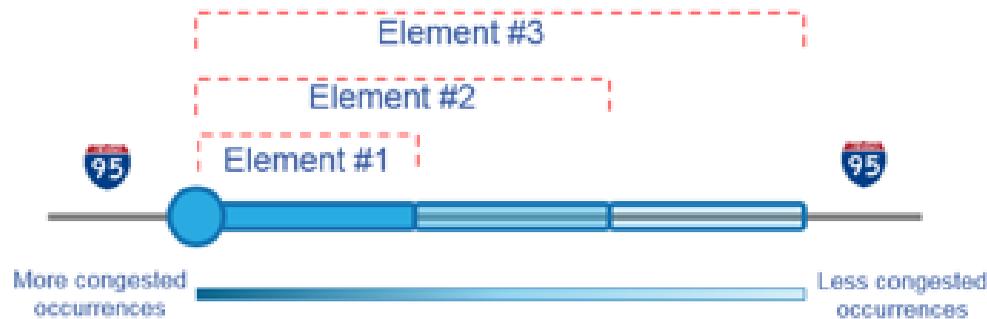
IL = Inner Loop

OL = Outer Loop

Maps



The Map view displays selected bottlenecks on a map. Each element occurring at the selected location is layered on the map, extending upstream from the head location to the maximum length of the specific element. As each element adds another layer on the map, road segments become more opaque. Segments closest to the head become the most opaque as they are more frequently affected by congestion at the selected location.

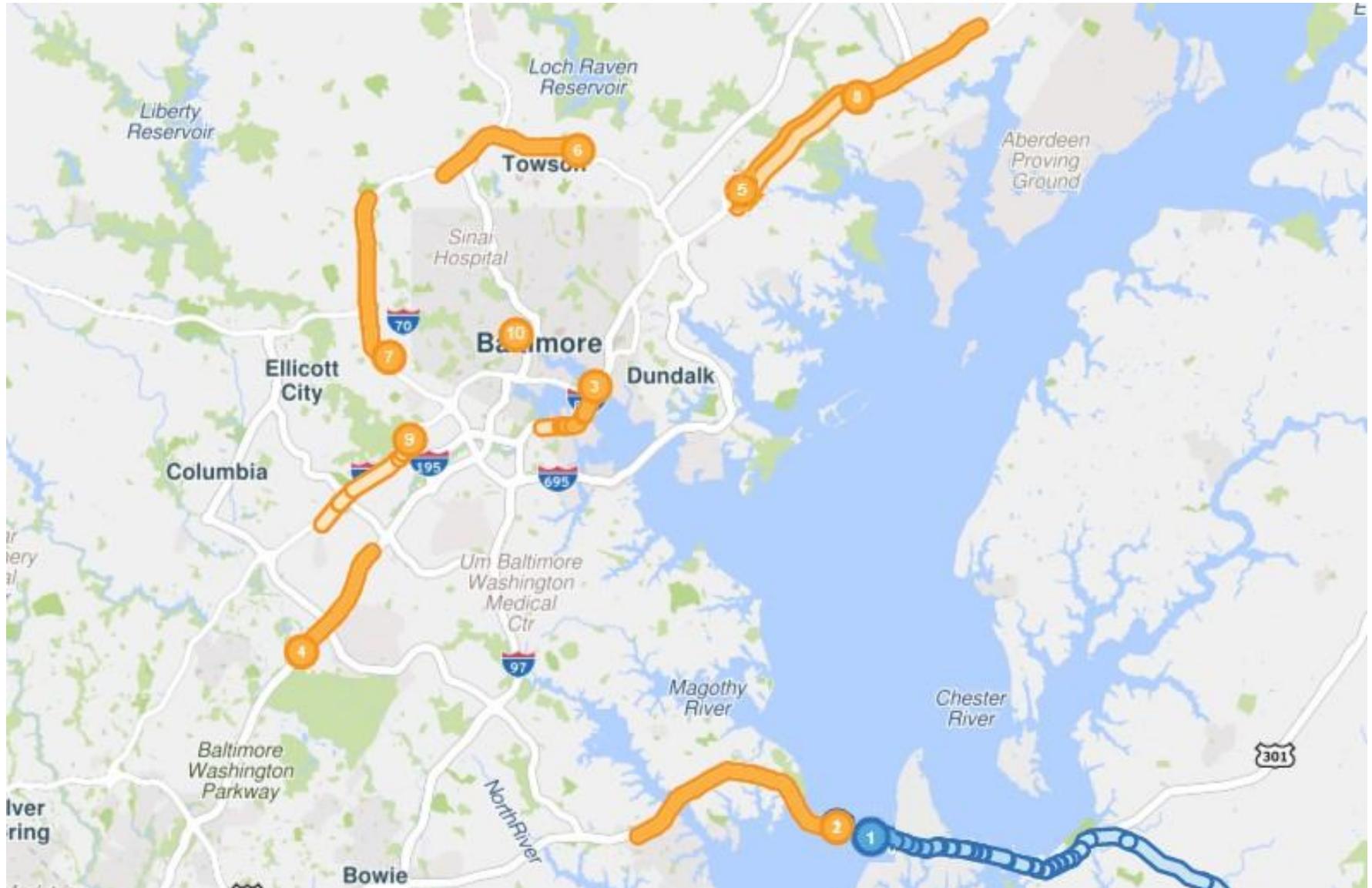


Top 10 Bottleneck Rankings – 3rd Quarter 2020

Top 10 Bottlenecks in the Baltimore Region

3rd Quarter 2020

Overview Map



Top 10 Bottlenecks in the Baltimore Region 3rd Quarter 2020

Ranked by Base Impact - the aggregation of queue length over time for congestion at each location in mile minutes. It is then weighted by **Total Delay** – Raw speed drop weighted by VMT factor

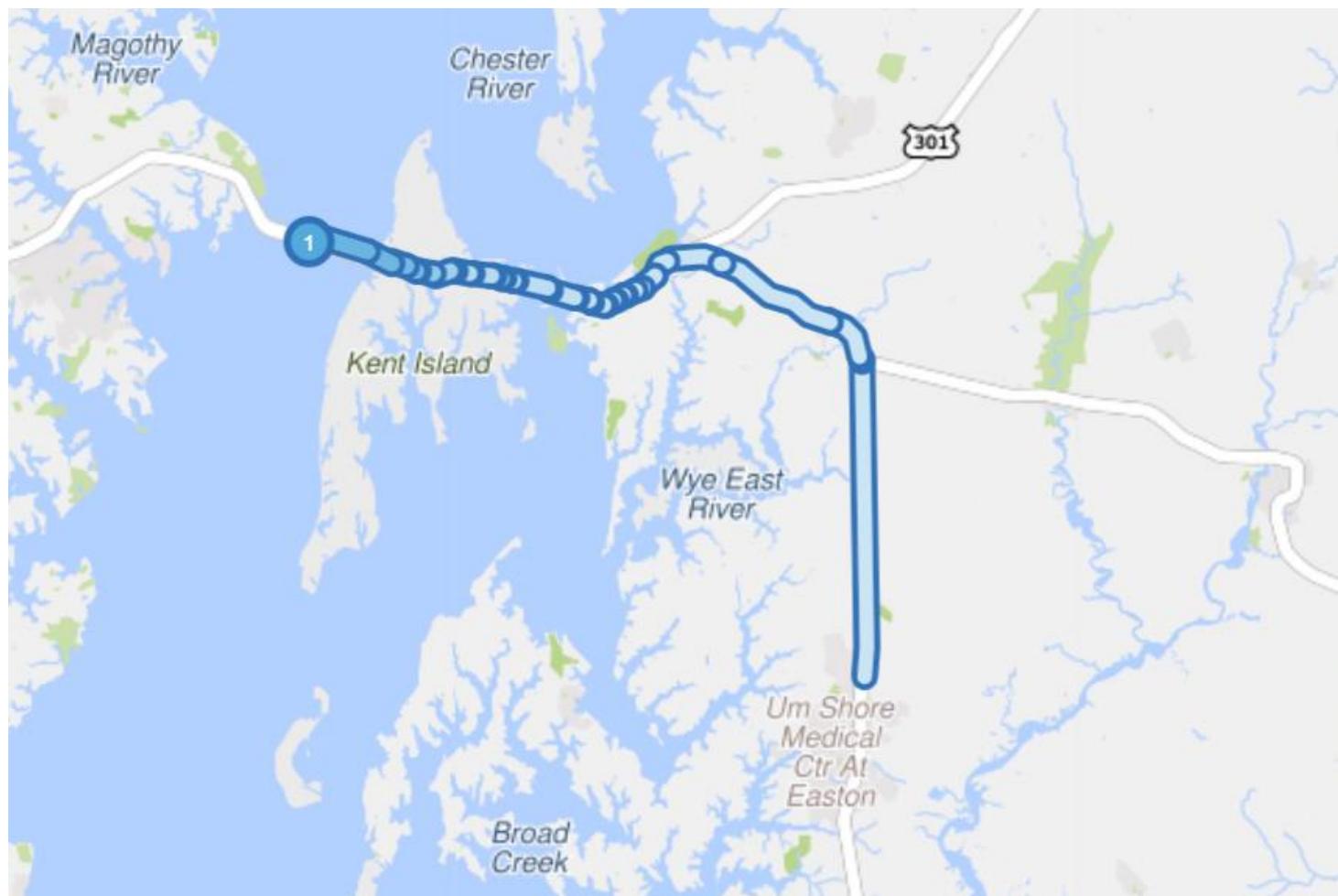
Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	US-50 W @ BAY BRIDGE	4.26	3 h 2 m	739	30,771
2	US-50 E @ BAY BRIDGE	4.67	1 h 2 m	751	35,927
3	I-895 N @ HARBOR TUNNEL THWY (NORTH)	1.81	3 h 41 m	129	33,802
4	MD-295 S @ MD-198	2.38	1 h 48 m	73	47,995
5	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.4	8 m	208	82,970
6	I-695 IL @ PROVIDENCE RD/EXIT 28	3.24	23 m	166	84,773
7	I-695 OL @ EDMONDSON AVE/EXIT 14	2.45	16 m	192	101,934
8	I-95 N @ MD-152/EXIT 74	6.76	9 m	165	82,547
9	I-95 N @ I-195/MD-166/EXIT 47	2.72	3 m	91	103,970
10	W FRANKLIN ST @ N MARTIN LUTHER KING JR BLVD	0.19	5 h 19 m	No data	26,259

IL = Inner Loop

OL = Outer Loop

#1 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 W @ BAY BRIDGE	4.26	3 h 2 m	739	30,771



Notes: Westbound off peak has lane closures due to deck rehabilitation on the Bay Bridge. Project expected end date September 7, 2023. Summer traffic pattern showing traffic heading back from Maryland beaches primarily on Sundays. PM peak period of traffic is at its heaviest from 2 to 5pm..

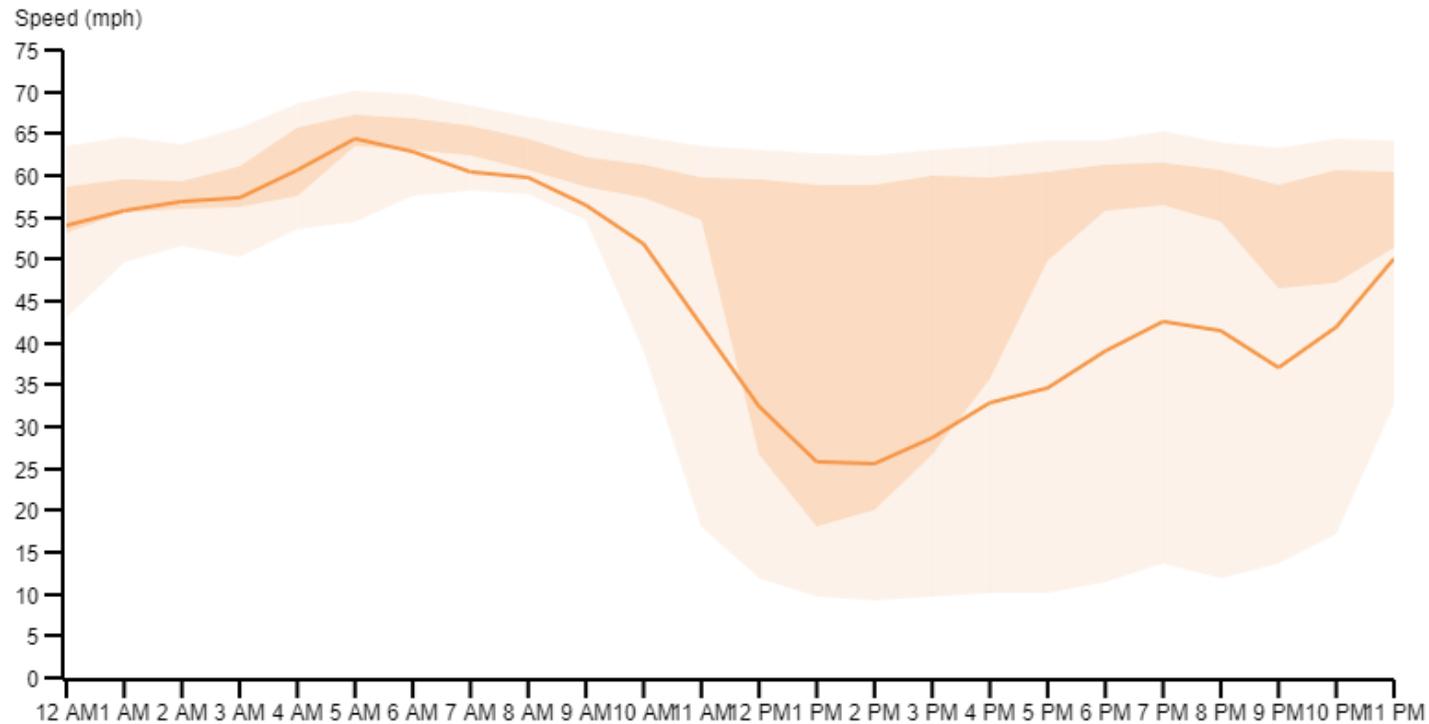
#1 Ranked Bottleneck in the Baltimore Region –3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 W @ BAY BRIDGE	4.26	3 h 2 m	739	30,771

Speed for US-50 Westbound between Bay Bridge and MD-18/Main St/Exit 38

Averaged per hour for July 01, 2020 through September 30, 2020

Westbound

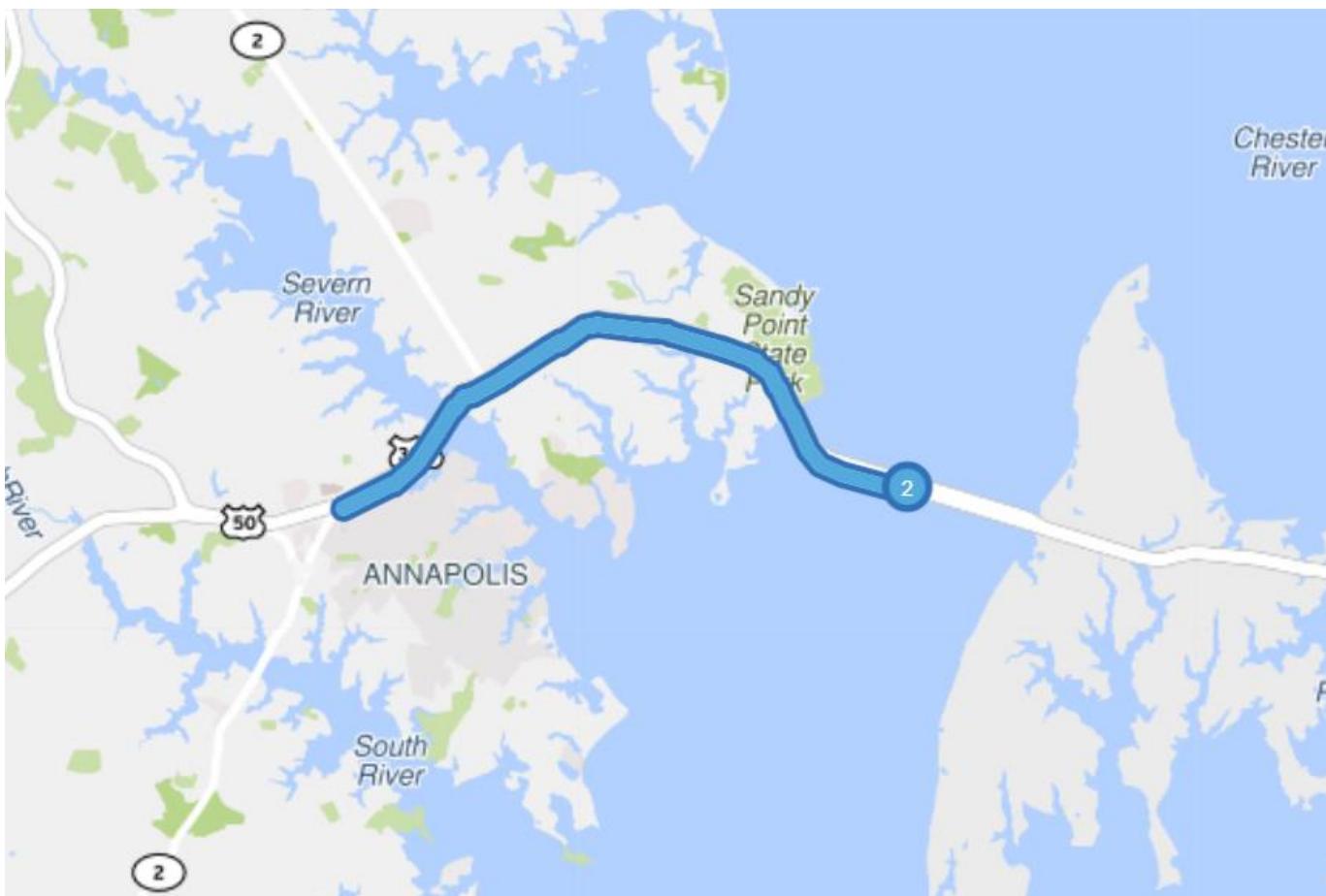


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#2 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 E @ BAY BRIDGE	4.67	1 h 2 m	751	35,927

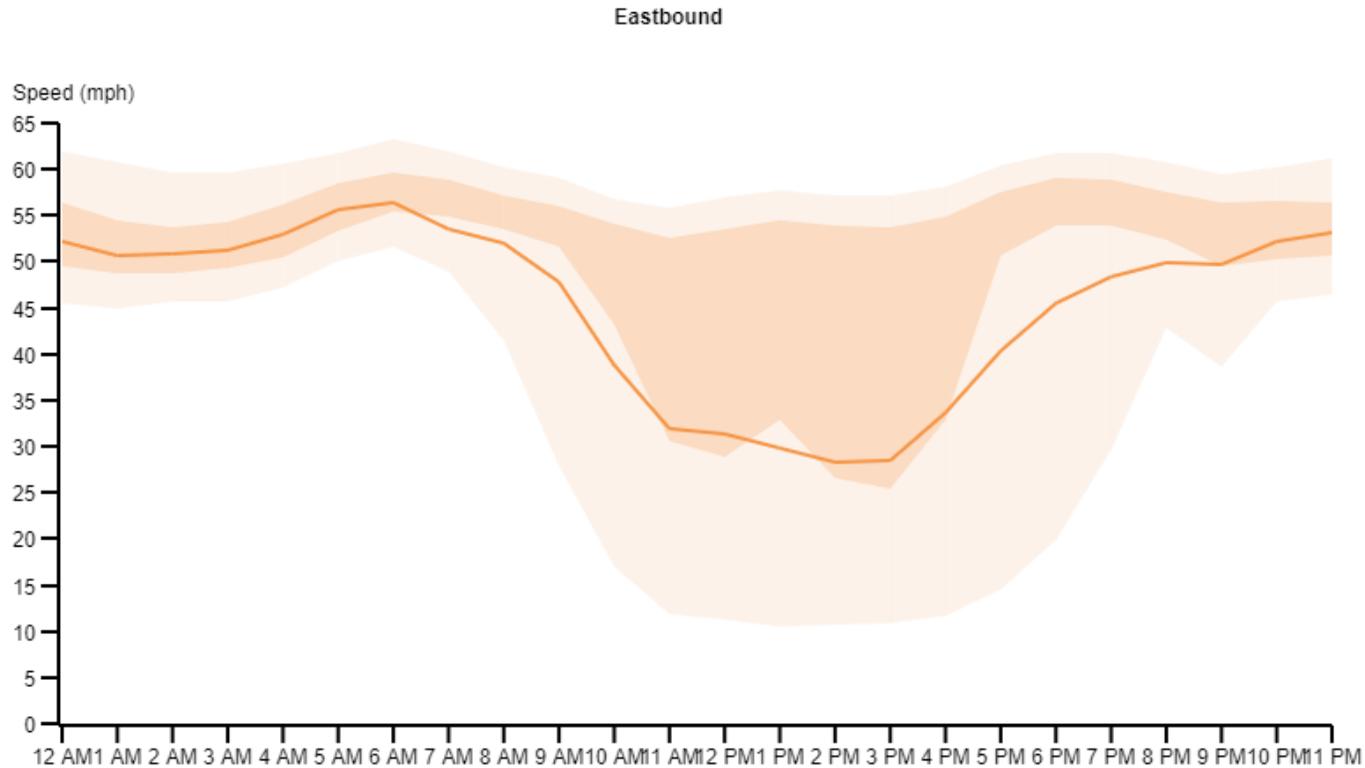


Notes: Summer traffic pattern showing traffic heading to the Maryland and Delaware beaches. Weekend traffic readings show primary congestion between 8am and 6pm.

#2 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 E @ BAY BRIDGE	4.67	1 h 2 m	751	35,927

Speed for US-50 Eastbound between MD-2/MD-450/Ritchie Hwy/Exit 27 and Bay Bridge
Averaged per hour for July 01, 2020 through September 30, 2020

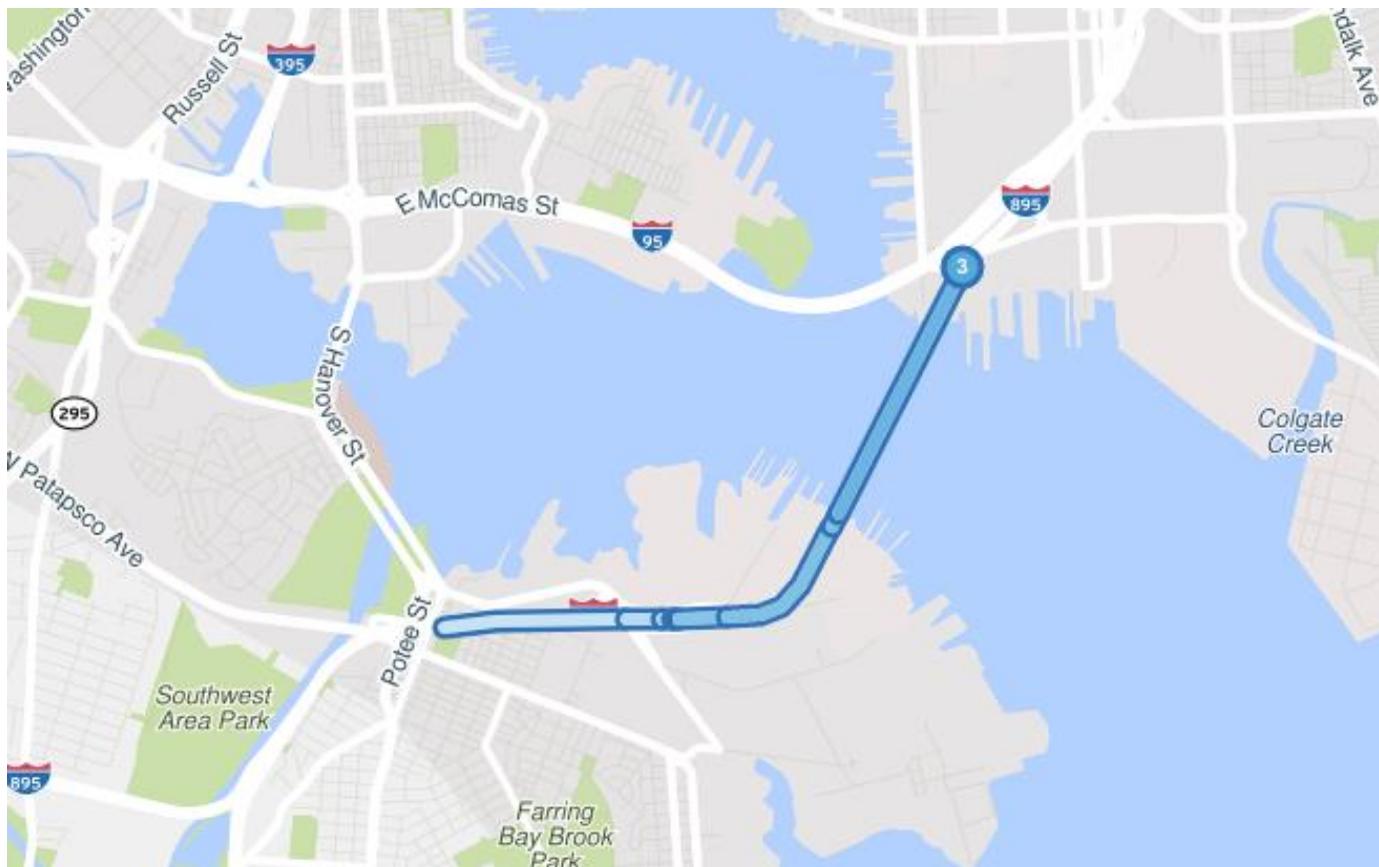


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#3 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-895 N @ HARBOR TUNNEL THWY (NORTH)	1.81	3 h 41 m	129	33,802



Notes: Major construction project impacting I-895 from November 2018 until summer 2021. The Northbound bore of the Harbor Tunnel is closed to traffic and the southbound bore is currently 2 way traffic. The I-895/Holabird Avenue exit ramp (Exit 10) will close completely during this time. For more information visit the MdTA at <https://mdta.maryland.gov/I-895BridgeProject/Home.html>

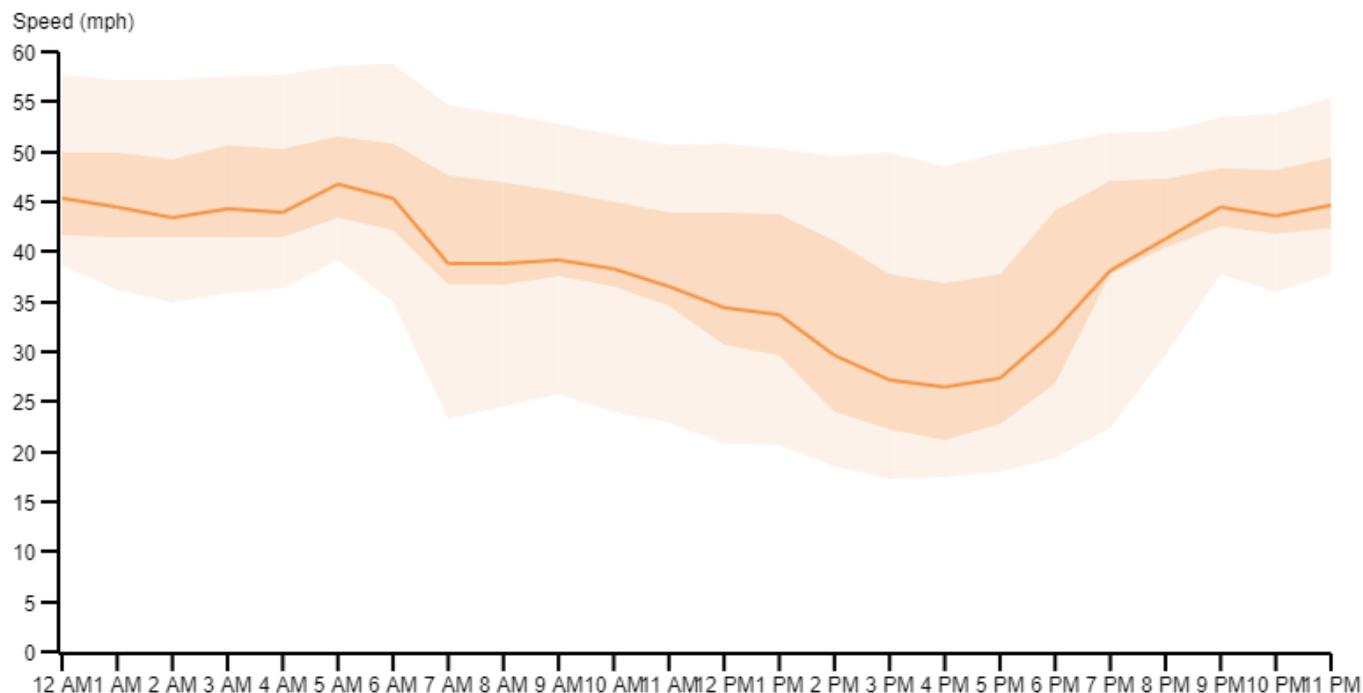
#3 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-895 N @ HARBOR TUNNEL THWY (NORTH)	1.81	3 h 41 m	129	33,802

Speed for I-895 Northbound between Frankfurst Ave/Shell Rd/Exit 8 and Harbor Tunnel Thwy (North)

Averaged per hour for July 01, 2020 through September 30, 2020

Northbound

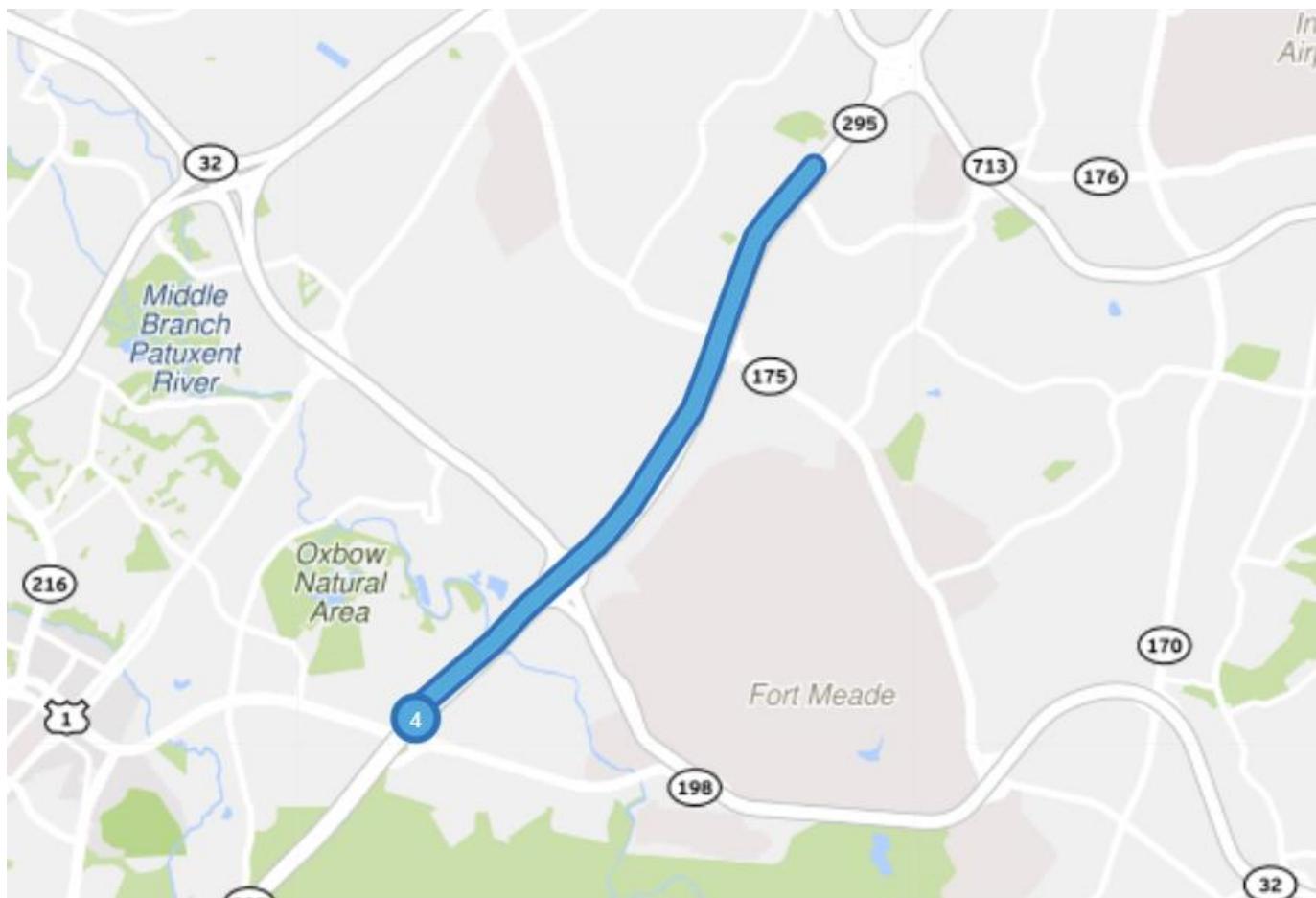


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#4 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.38	1 h 48 m	73	47,995



Notes: Southbound PM congestion extending from MD-198 extending into the southern portion of the Baltimore region near Fort Meade occurring during both the morning and afternoon peak periods. Volume related delays caused by factors such as Baltimore commuters to DC and Fort Meade and the MD-295 merge with the heavily congested Capital Beltway

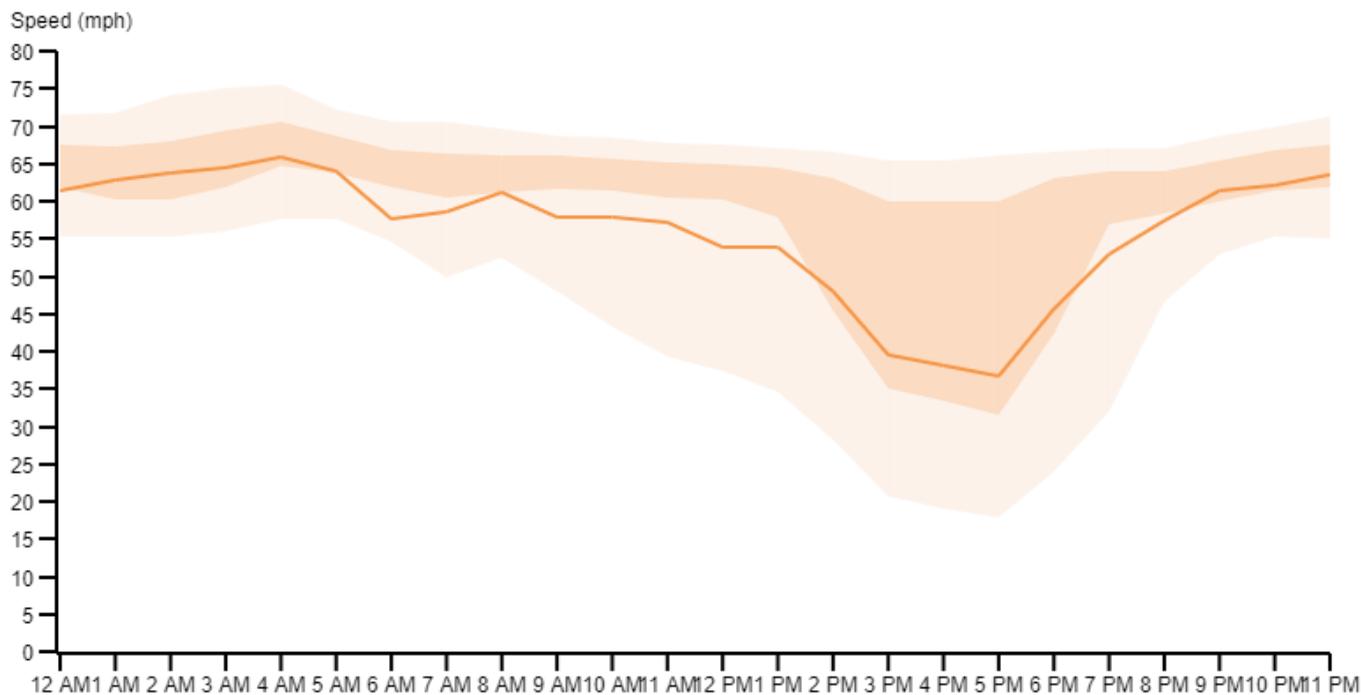
#4 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.38	1 h 48 m	73	47,995

Speed for MD-295 Southbound between MD-198 and Canine Rd

Averaged per hour for July 01, 2020 through September 30, 2020

Southbound

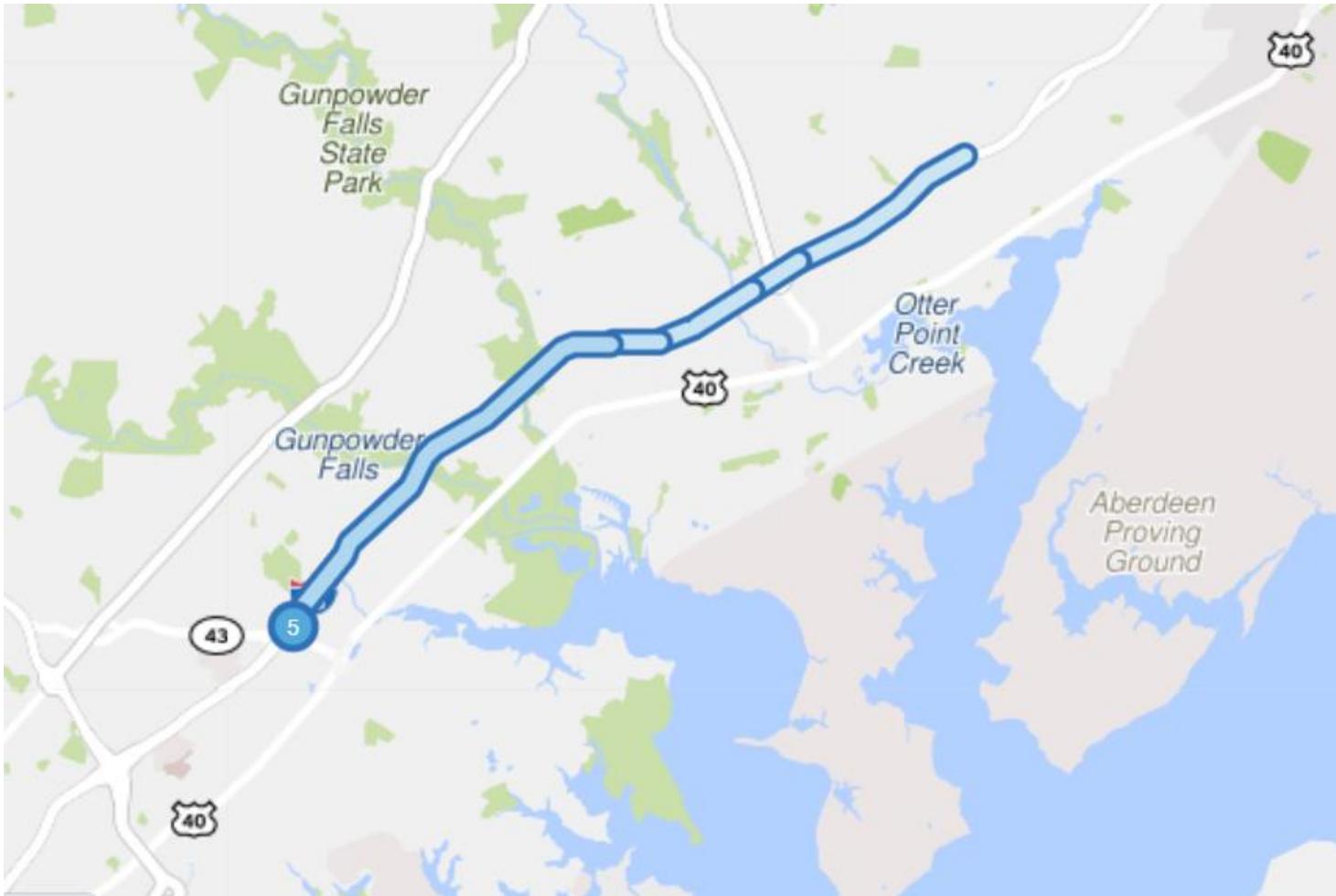


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#5 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

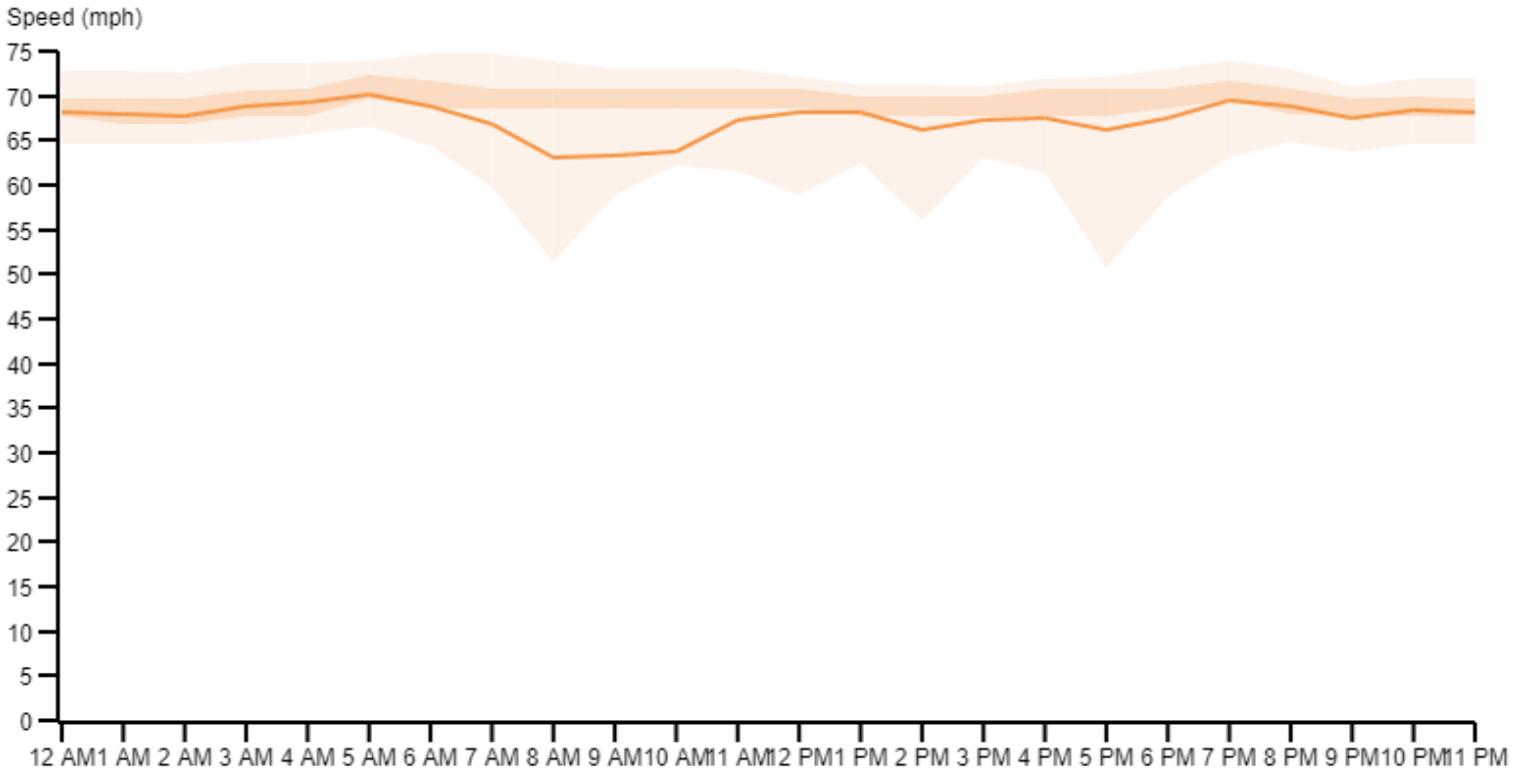
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.4	8 m	208	82,970



Notes: Although heavy traffic was seen daily in the mornings before Covid-19 closures, current conditions show non-recurring congestion primarily caused by incidents on the long stretch without exits (8 miles) between MD-43/White Marsh Blvd and MD-152/Mountain Rd

#5 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.4	8 m	208	82,970

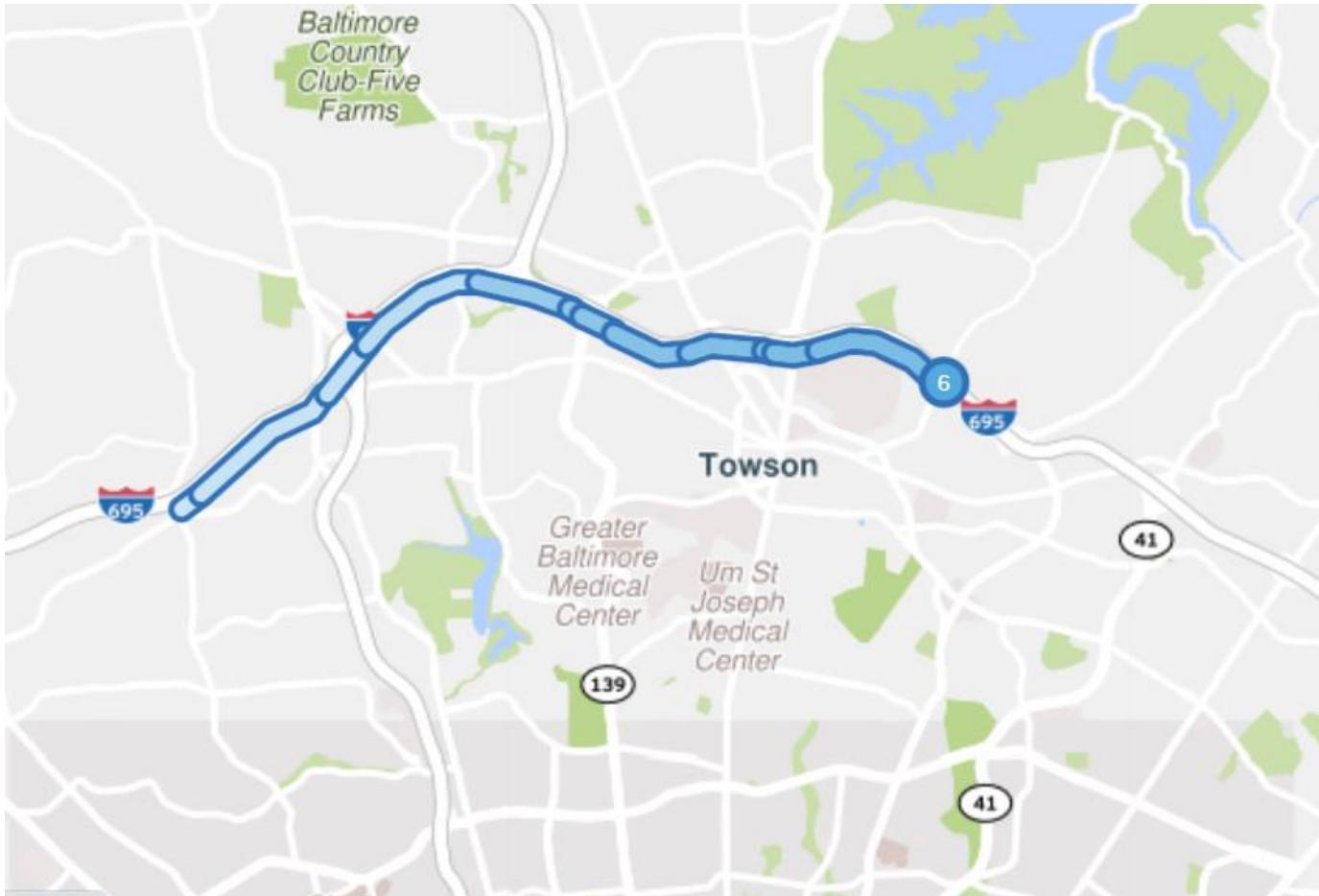


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#6 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ PROVIDENCE RD/EXIT 28	3.24	23 m	166	84,773



Notes: Congestion was most severe between I-83 and Providence Rd in the PM rush. Factors contributing to this long-standing and extended congested zone: merging and weaving associated with traffic at each interchange; and a lane drop (to three lanes) at MD 45 (York Rd).

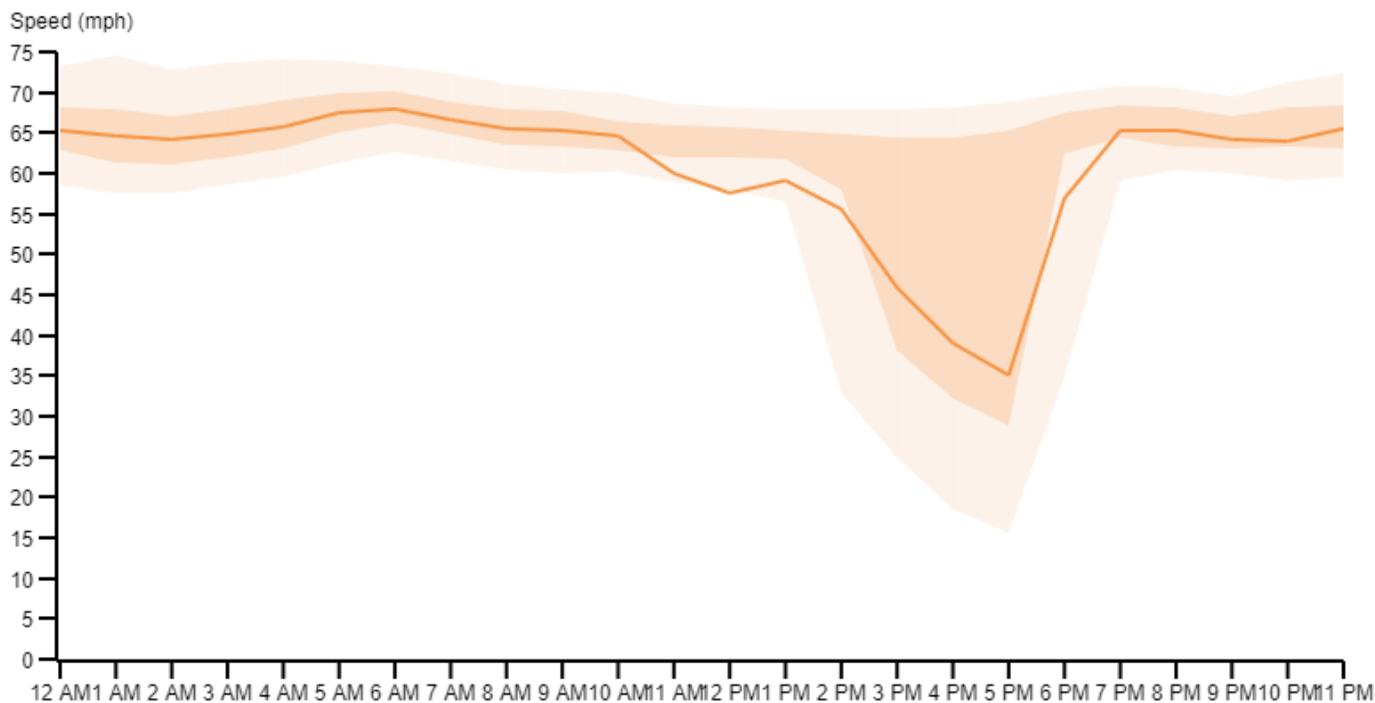
#6 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ PROVIDENCE RD/EXIT 28	3.24	23 m	166	84,773

Speed for I-695 IL between MD-139/Charles St/Exit 25 and Providence Rd/Exit 28

Averaged per hour for July 01, 2020 through September 30, 2020

Inner Loop

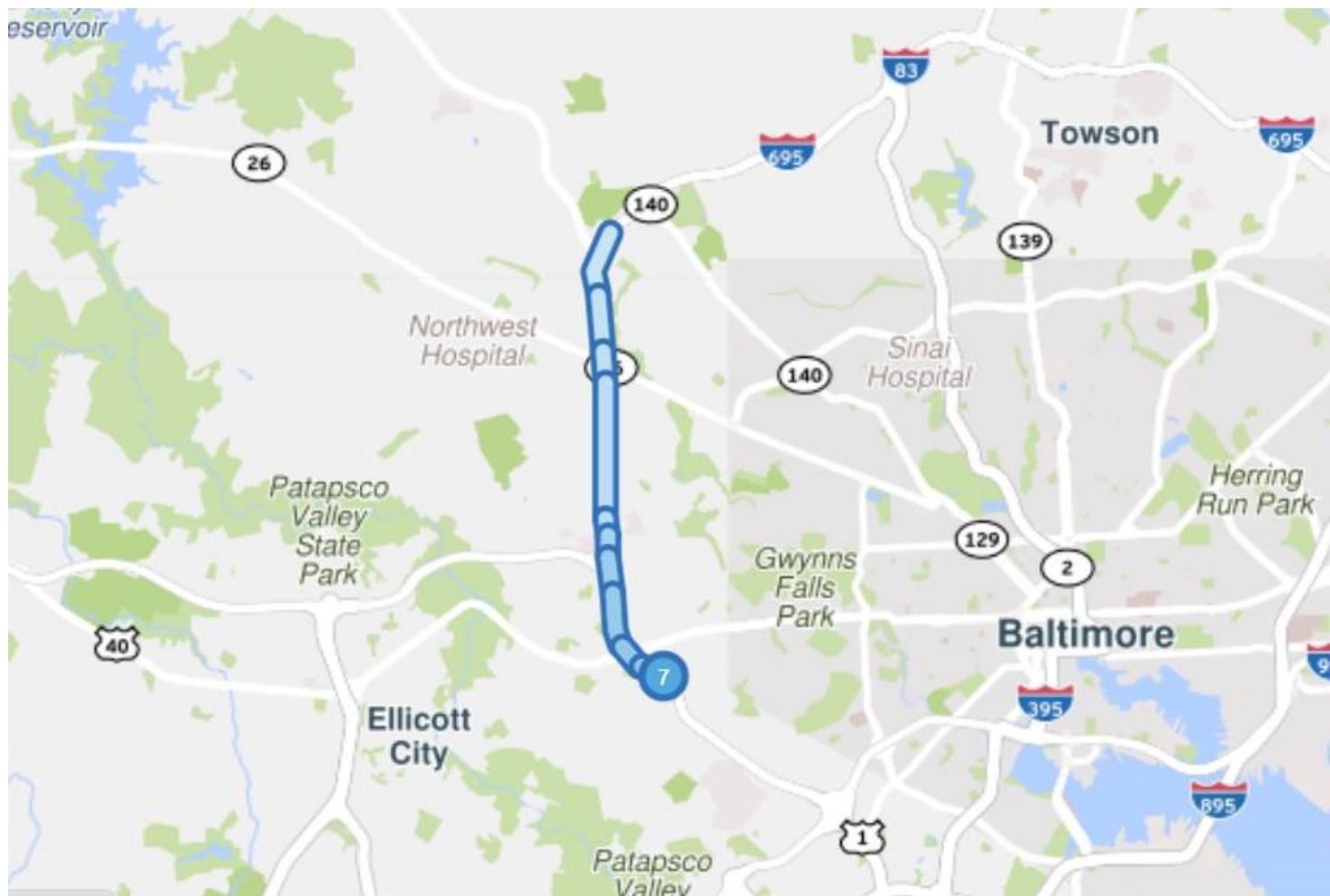


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#7 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	2.45	16 m	192	101,934



Notes: The core congestion extends from just south of US-40/Baltimore National Pike to MD-140/Reisterstown Rd in both the morning and afternoon rush hour with the AM rush being more severe. A beltway widening project is underway in the area.

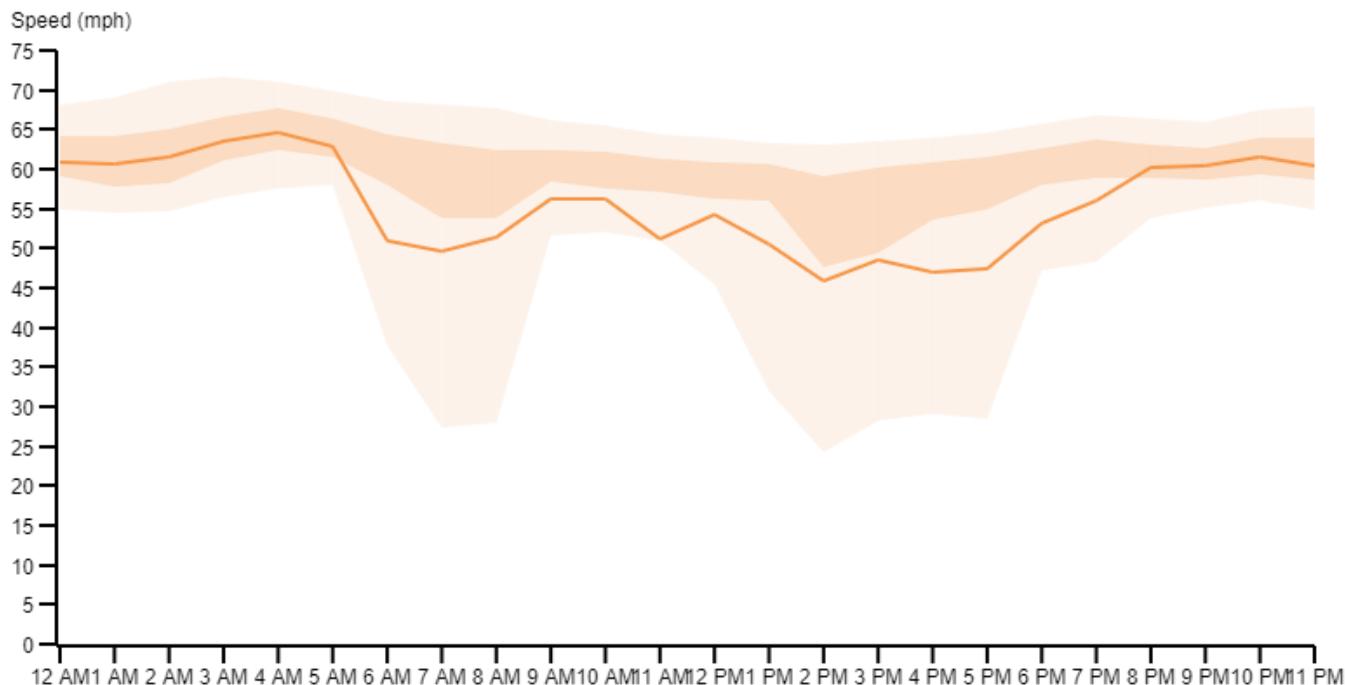
#7 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	2.45	16 m	192	101,934

Speed for I-695 OL between Edmondson Ave/Exit 14 and I-70/Exit 16

Averaged per hour for July 01, 2020 through September 30, 2020

Outer Loop

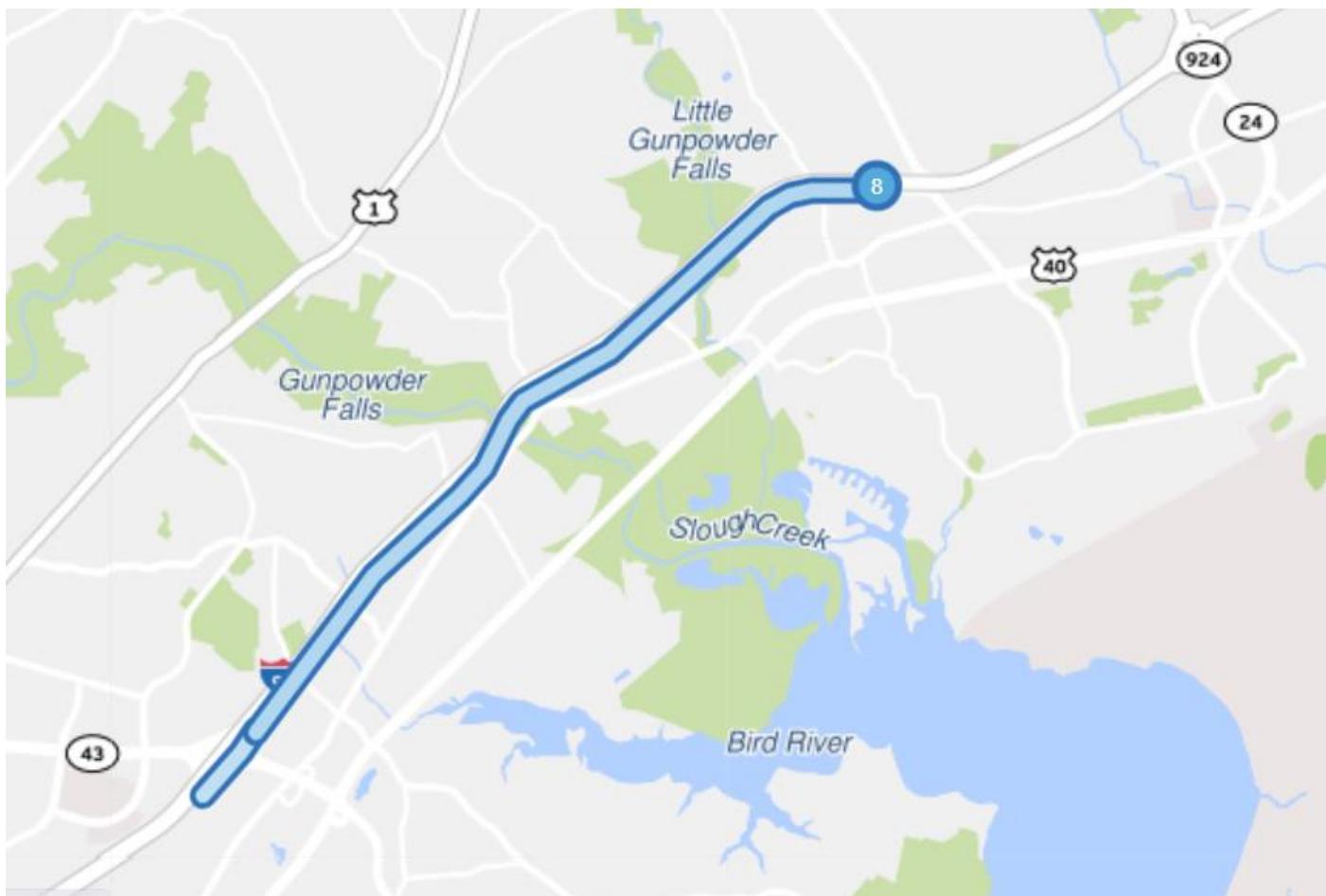


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#8 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ MD-152/EXIT 74	6.76	9 m	165	82,547



Notes: I-95 ETL Northbound extension project. The extension is expected to be open to traffic by the end of 2023 to MD 152, with the full extension to north of MD 24 open to traffic by the end of 2026. This includes the Old Joppa Road Overpass Replacement. Off peak shoulder and lane closures

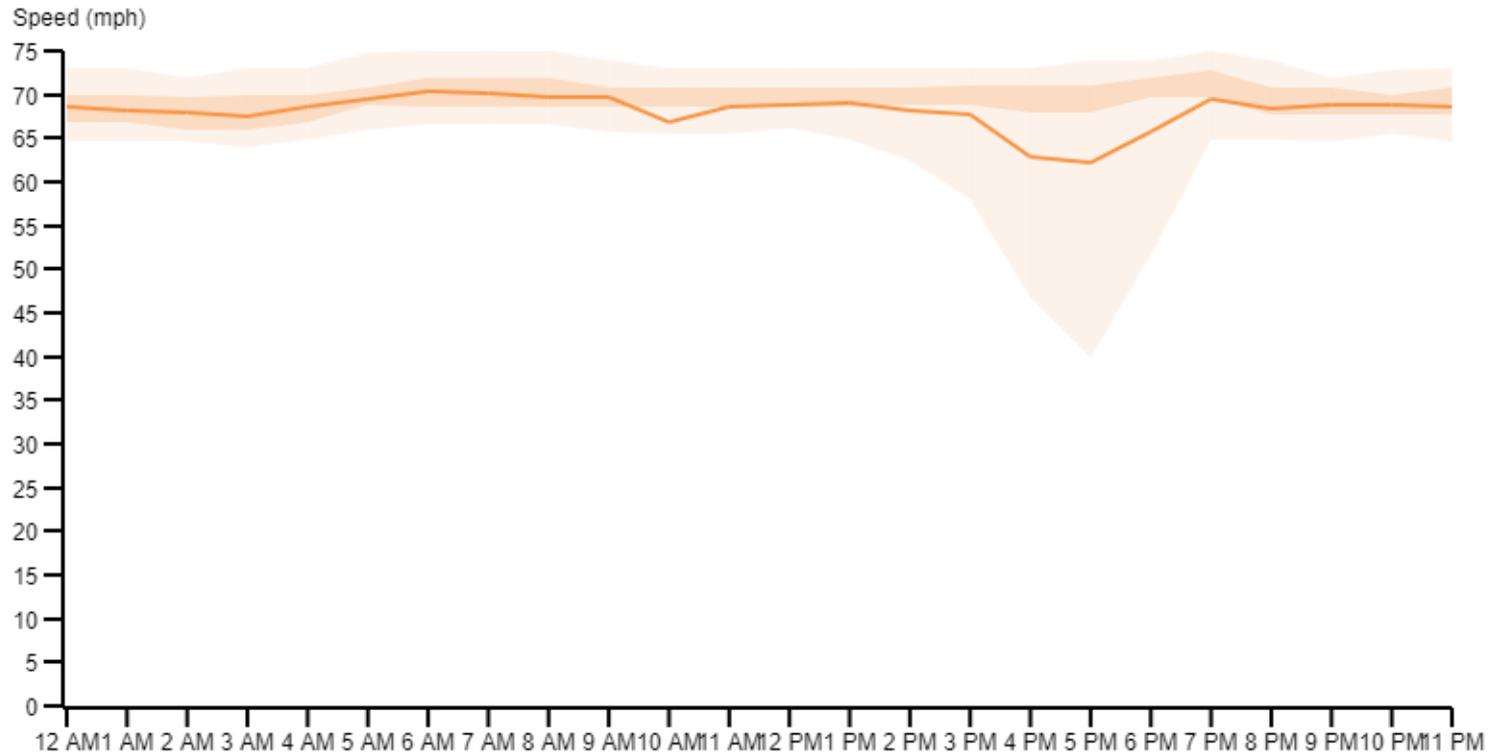
#8 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ MD-152/EXIT 74	6.76	9 m	165	82,547

Speed for I-95 Northbound between MD-43/Whitemarsh Blvd/Exit 67 and MD-152/Exit 74

Averaged per hour for July 01, 2020 through September 30, 2020

Northbound

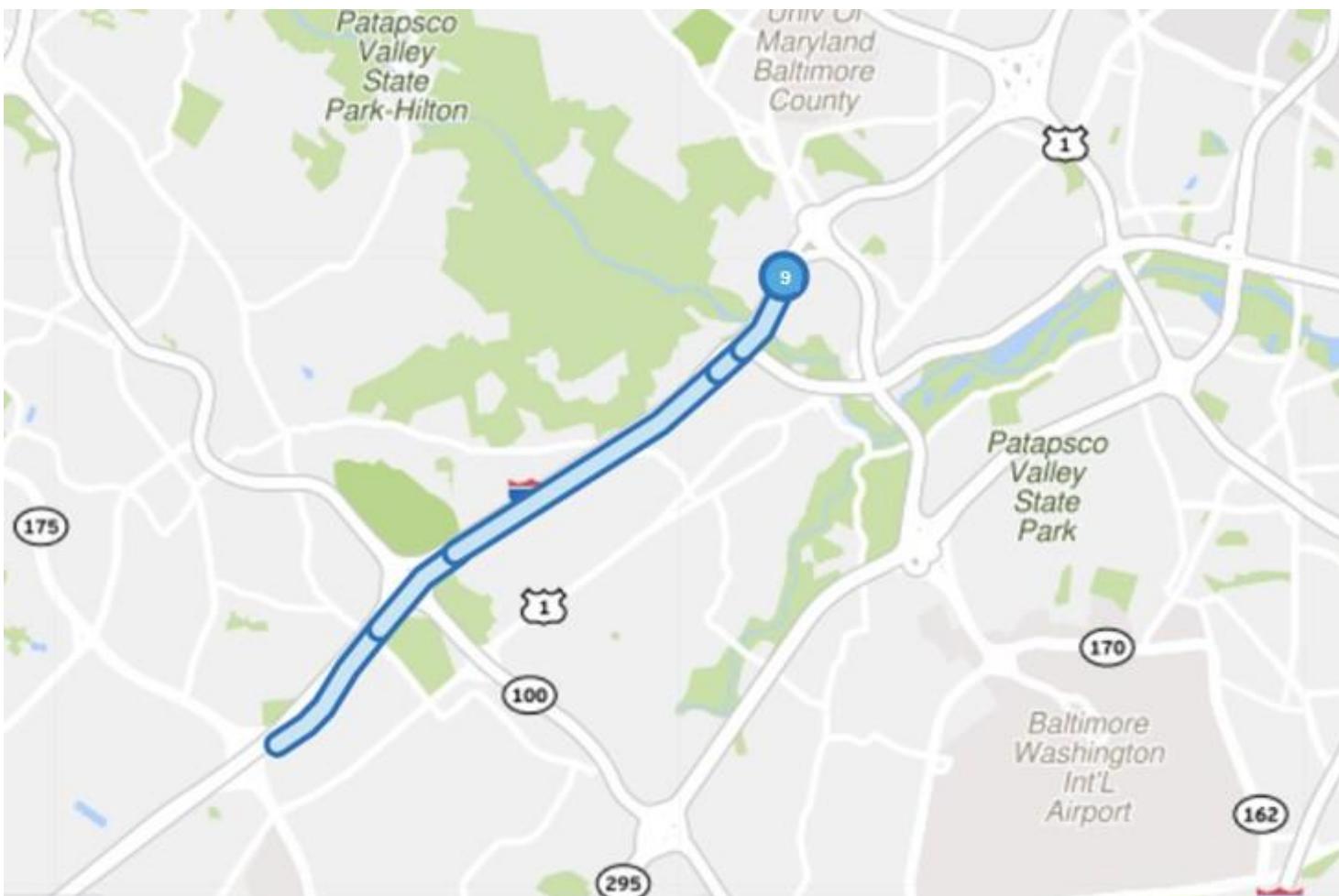


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#9 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ I-195/MD-166/EXIT 47	2.72	3 m	91	103,970



Notes: Congestion in the afternoon rush hour. Contributing factors include traffic entering at MD-175, weaving to exit at MD-100, and the half-mile uphill grade midway between MD-175 and MD-100.

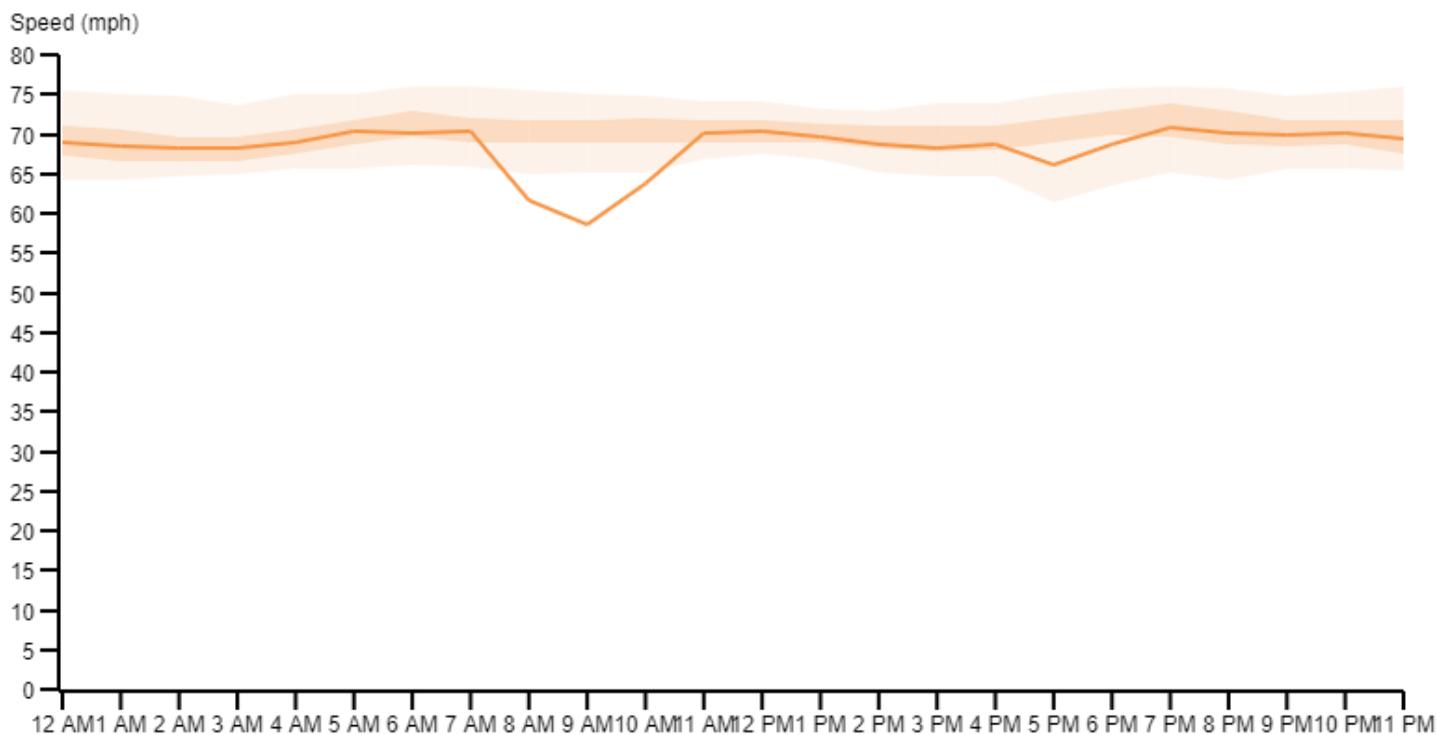
#9 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ I-195/MD-166/EXIT 47	2.72	3 m	91	103,970

Speed for I-95 Northbound between I-895/Exit 46 and I-195/MD-166/Exit 47

Averaged per hour for July 01, 2020 through September 30, 2020

Northbound

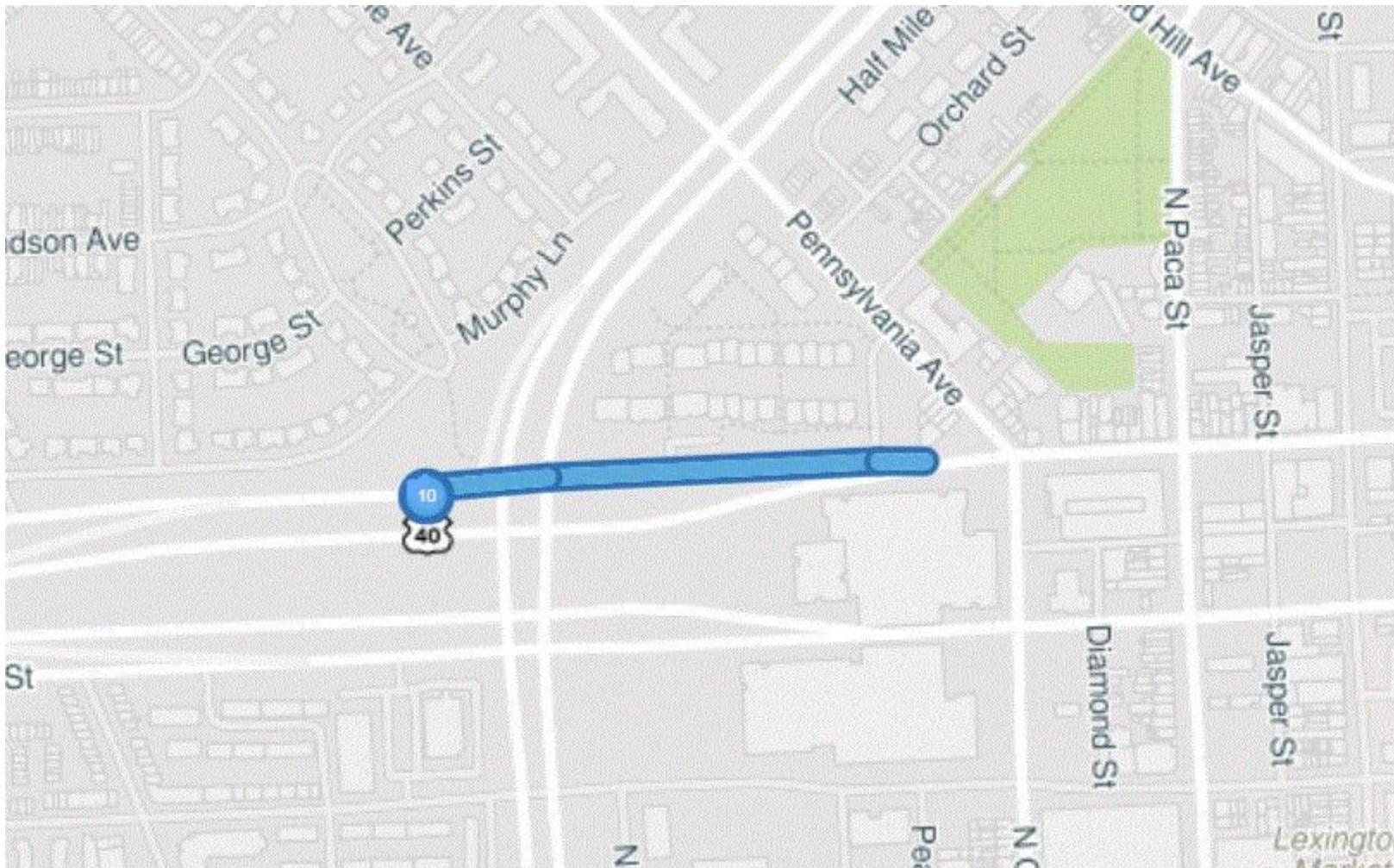


Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

#10 Ranked Bottleneck in the Baltimore Region –3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
W FRANKLIN ST @ N MARTIN LUTHER KING JR BLVD	0.19	5 h 19 m	No data	26,259



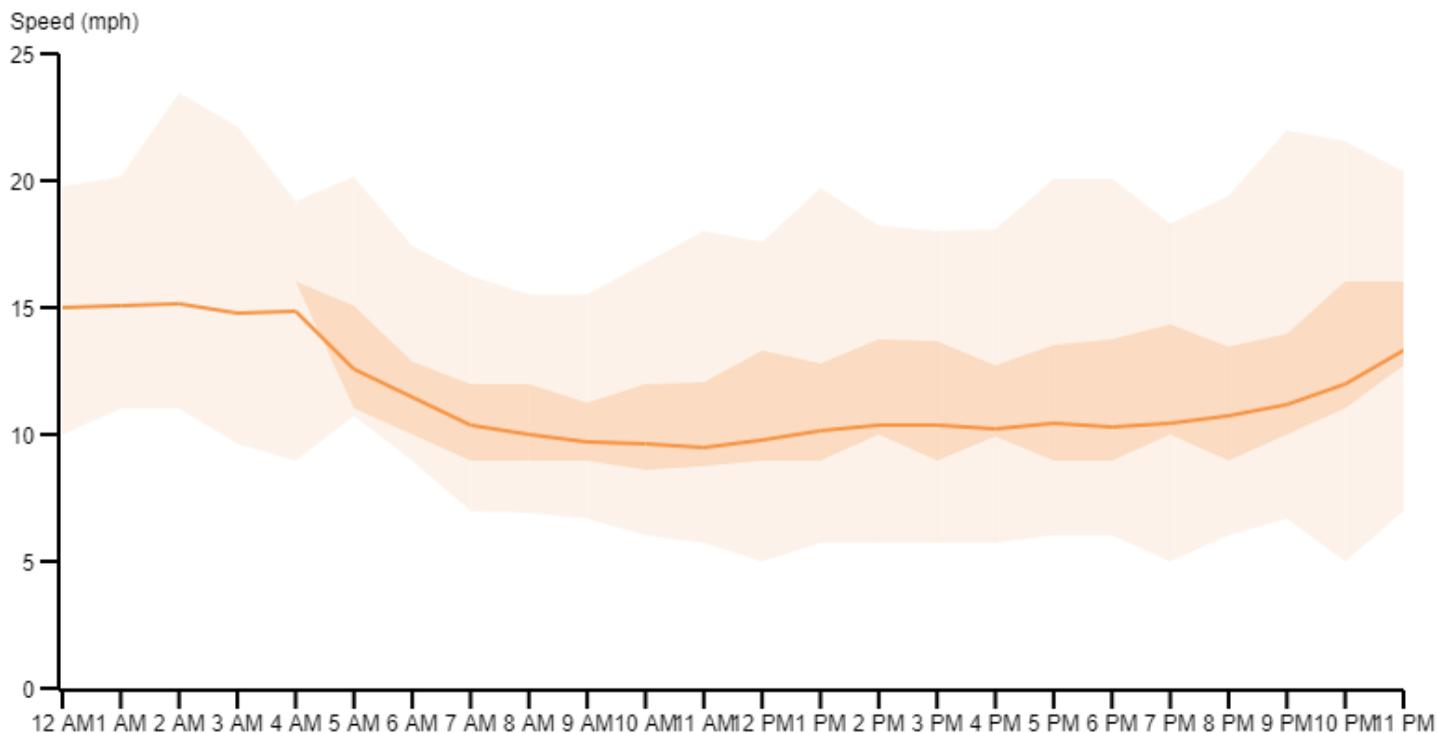
Notes: Traffic signal queue times waiting to cross Martin Luther King Jr Blvd most likely cause the observed delay from 8am to 9pm

#10 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2020

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
W FRANKLIN ST @ N MARTIN LUTHER KING JR BLVD	0.19	5 h 19 m	No data	26,259

Speed for W FRANKLIN ST WB @ N Martin Luther King Jr Blvd
 Averaged per hour for July 01, 2020 through September 30, 2020

Westbound



Speed: The current estimated harmonic mean speed for the roadway segment in miles per hour.

- July 01, 2020 through September 30, 2020 - INRIX
- July 01, 2020 through September 30, 2020 25th and 75th percentile - INRIX
- July 01, 2020 through September 30, 2020 5th and 95th percentile - INRIX

Traffic Volume Trends

Traffic Volumes

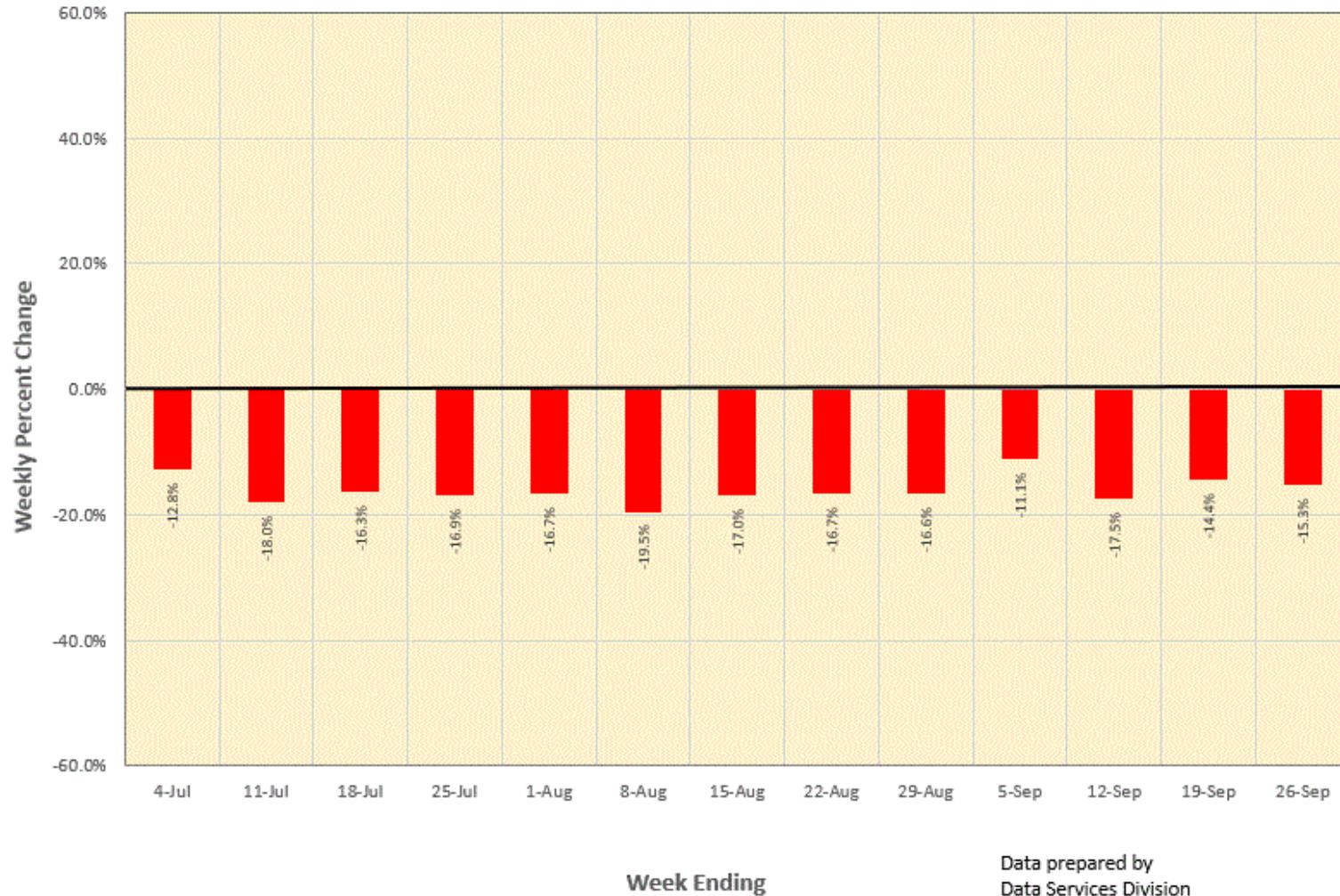
Traffic Volumes – Weekly Changes at Permanent Counters 2019 vs. 2020

Week Ending	Comparing weekly average ATR Volumes 2019 to 2020 *
4-Jul	-12.8%
11-Jul	-18.0%
18-Jul	-16.3%
25-Jul	-16.9%
1-Aug	-16.7%
8-Aug	-19.5%
15-Aug	-17.0%
22-Aug	-16.7%
29-Aug	-16.6%
5-Sep	-11.1%
12-Sep	-17.5%
19-Sep	-14.4%
26-Sep	-15.3%

Traffic Volumes



Weekly Changes at Permanent Counters (ATR) from 2019 to 2020



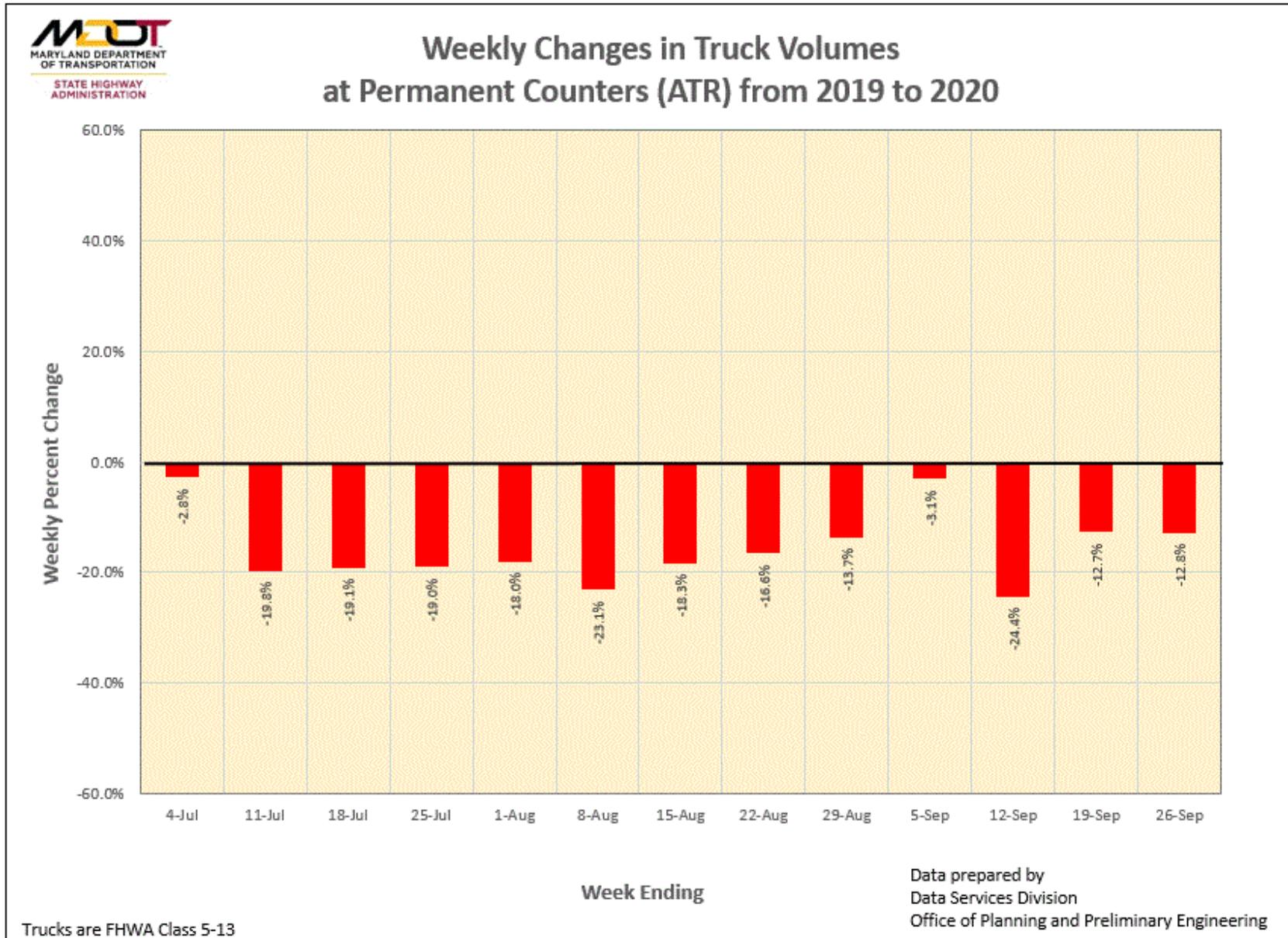
Data prepared by
Data Services Division
Office of Planning and Preliminary Engineering

Truck Volumes

Truck Volumes – Weekly Changes at Permanent Counters 2019 vs. 2020

Week Ending	Comparing weekly average Truck ATR Volumes 2019 to 2020 *
4-Jul	-2.8%
11-Jul	-19.8%
18-Jul	-19.1%
25-Jul	-19.0%
1-Aug	-18.0%
8-Aug	-23.1%
15-Aug	-18.3%
22-Aug	-16.6%
29-Aug	-13.7%
5-Sep	-3.1%
12-Sep	-24.4%
19-Sep	-12.7%
26-Sep	-12.8%

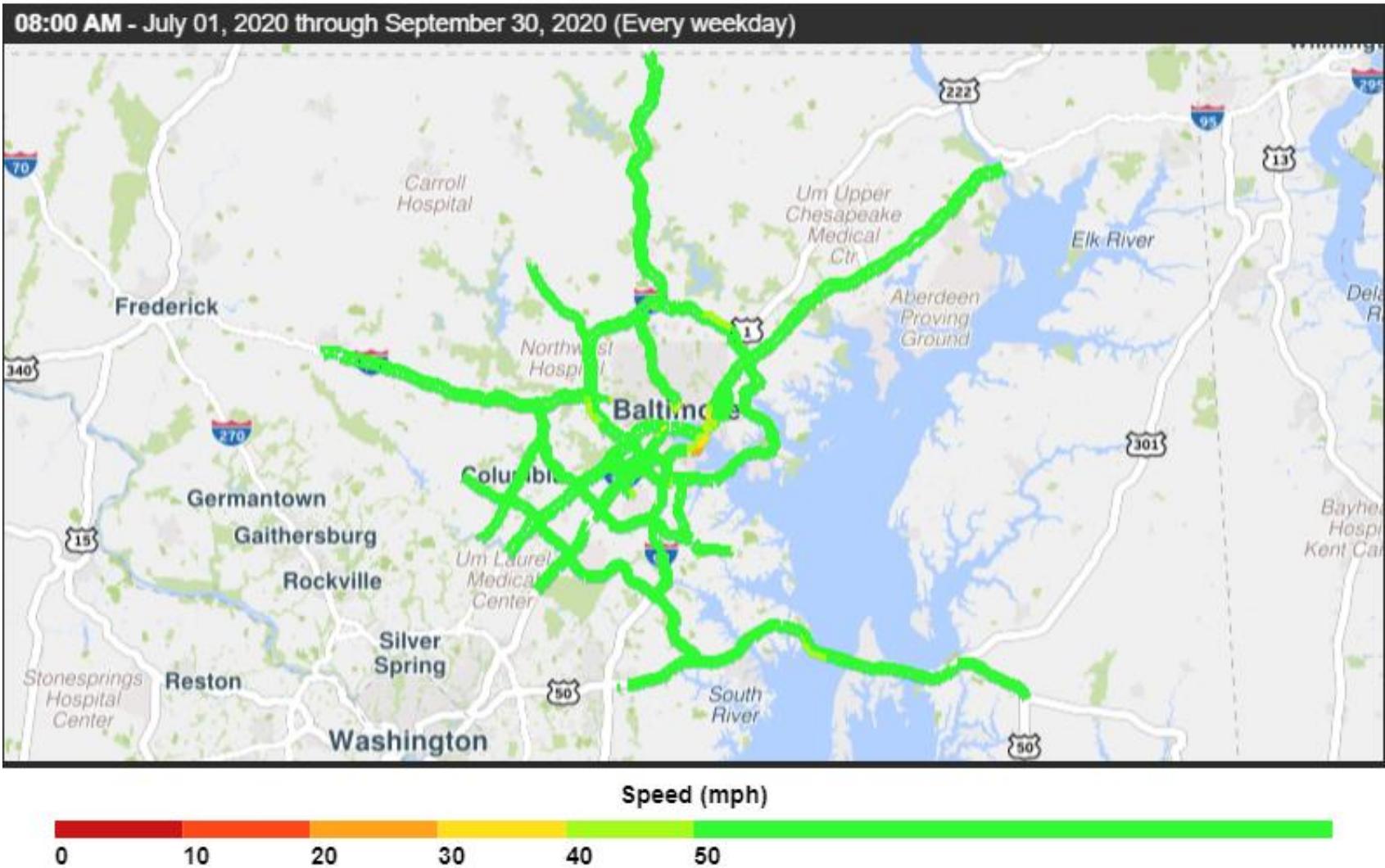
Truck Volumes



Regional Speed Maps

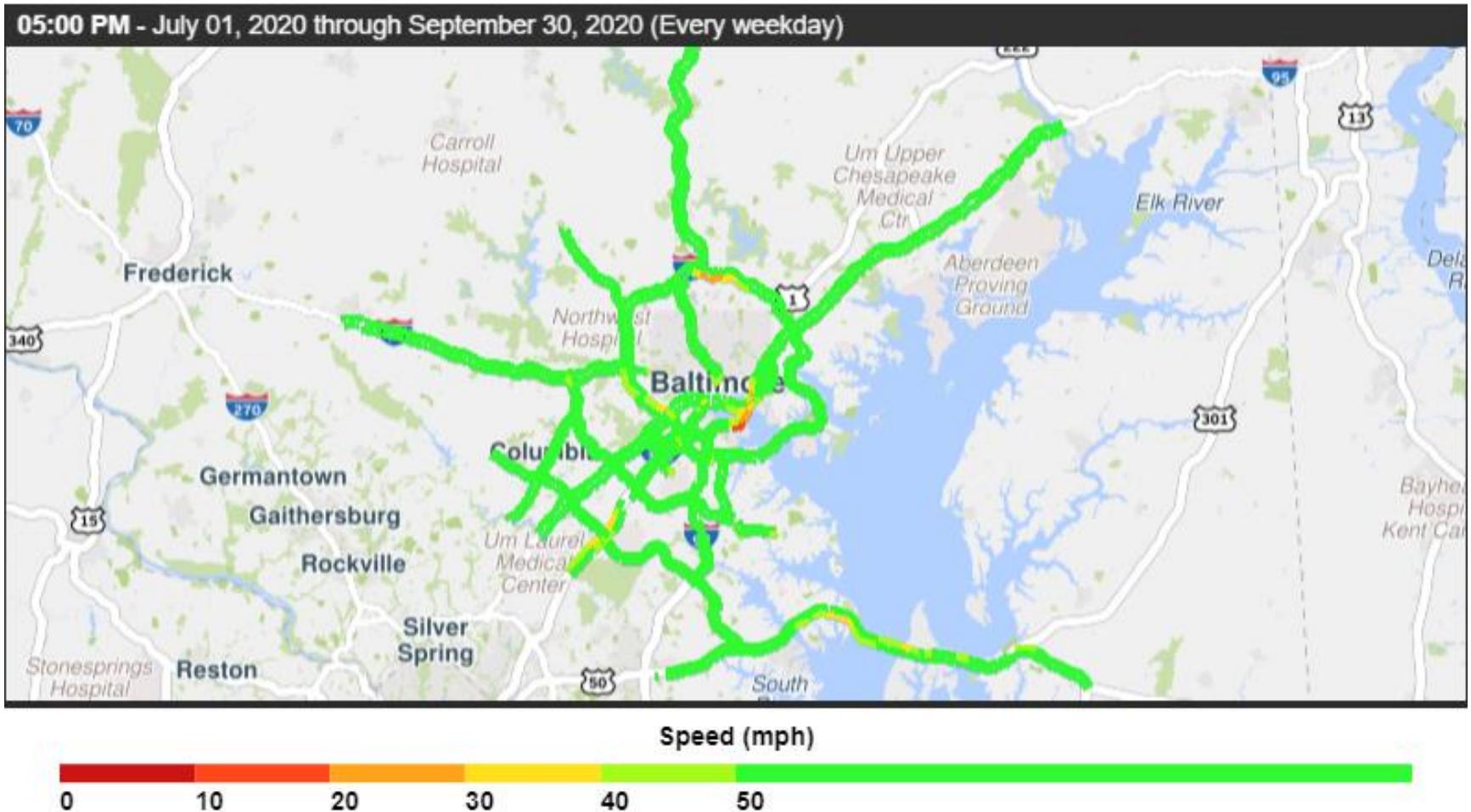
AM Peak Period Rush Hour – July 1 – September 30th

BMC Region Limited Access Speed Trend Map for July through September 2020 (Every Weekday)



PM Peak Period Rush Hour – July 1 – September 30th

BMC Region Limited Access Trend Map for July through September 2020 (Every Weekday)



For More Information

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