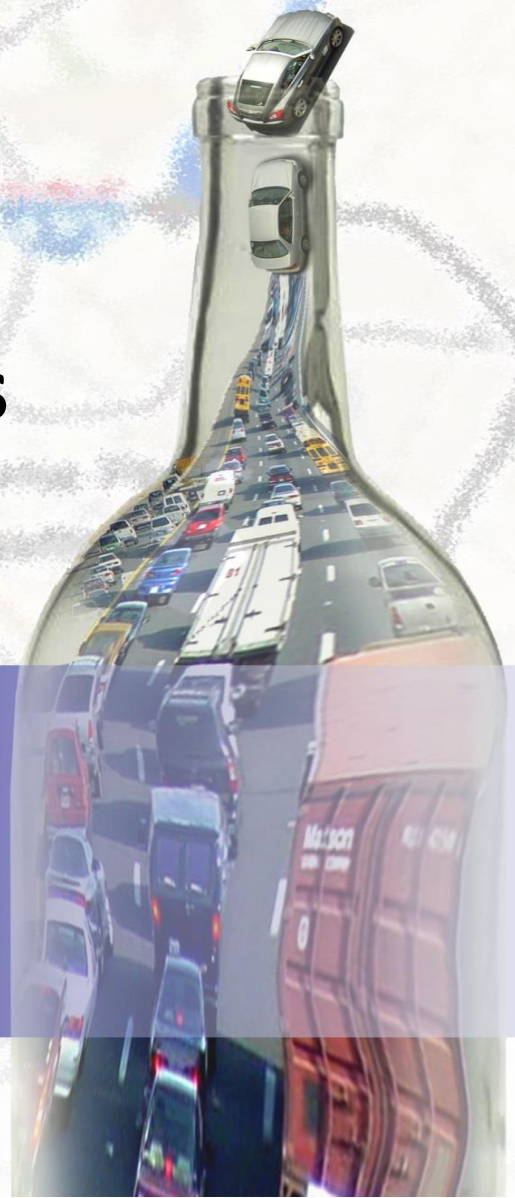
Baltimore Metropolitan Council

Quarterly Congestion Analysis Report for the Baltimore Region

Top 10 Bottleneck Locations



4th Quarter 2018

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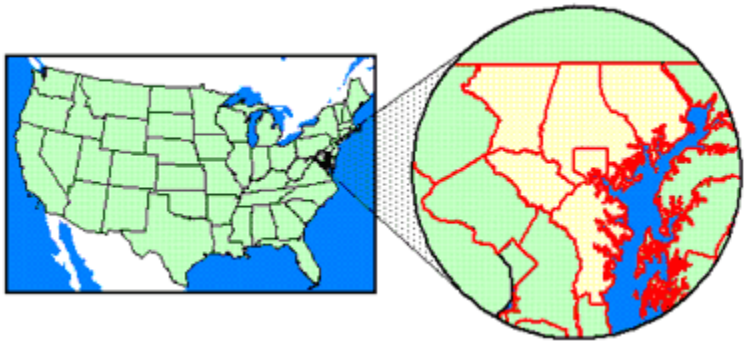
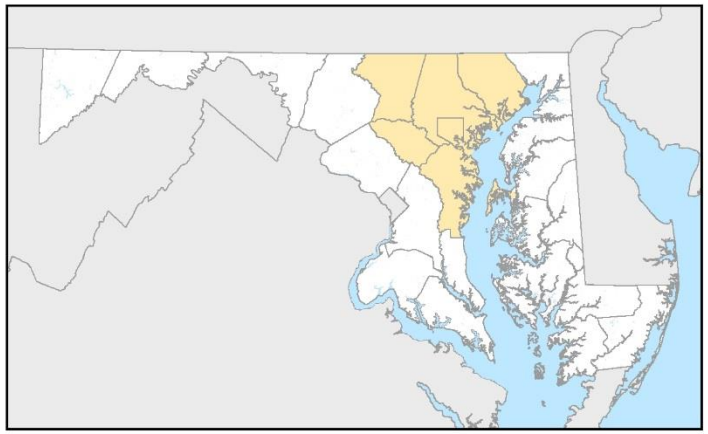
About the Region

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

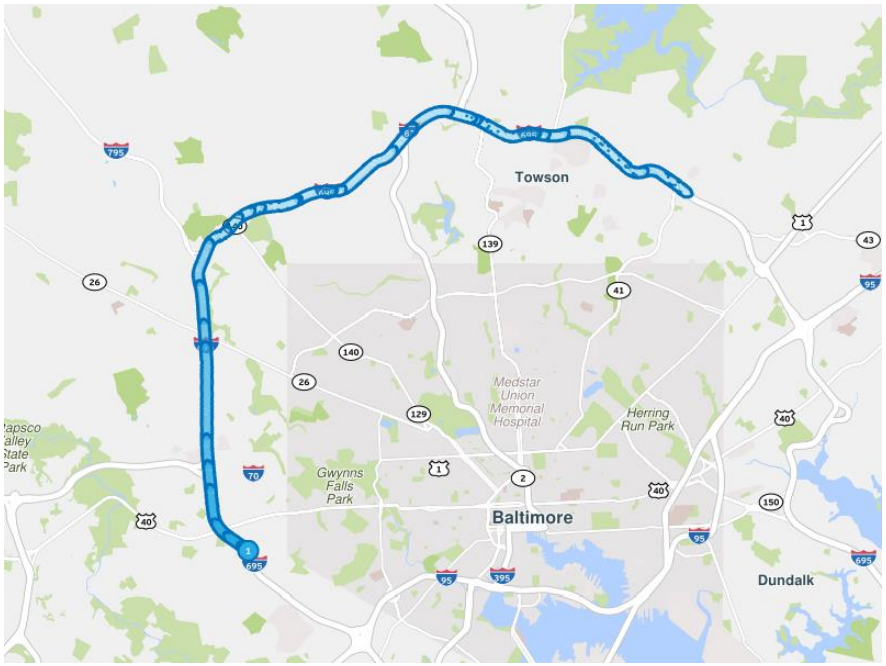
How are bottleneck conditions tracked?

- **Rank** - The ranked position of the location according to the current table ordering by Total Delay - Raw speed drop weighted by vehicle miles traveled (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

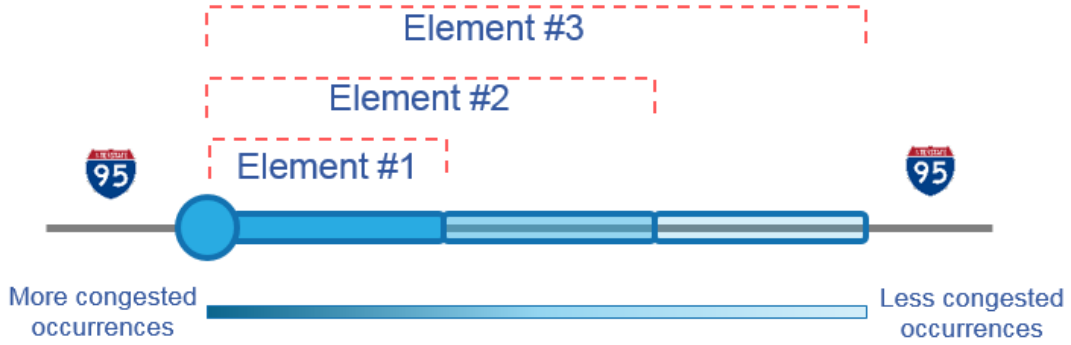
Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	I-695 OL @ EDMONDSON AVE/EXIT 14	5.01	2 h 43 m	834	88946
2	I-695 IL @ I-83/MD-25/EXIT 23	3.53	2 h 56 m	463	95048
3	I-695 IL @ I-70/EXIT 16	2.11	2 h 54 m	233	95068
4	I-695 OL @ US-40/EXIT 15	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

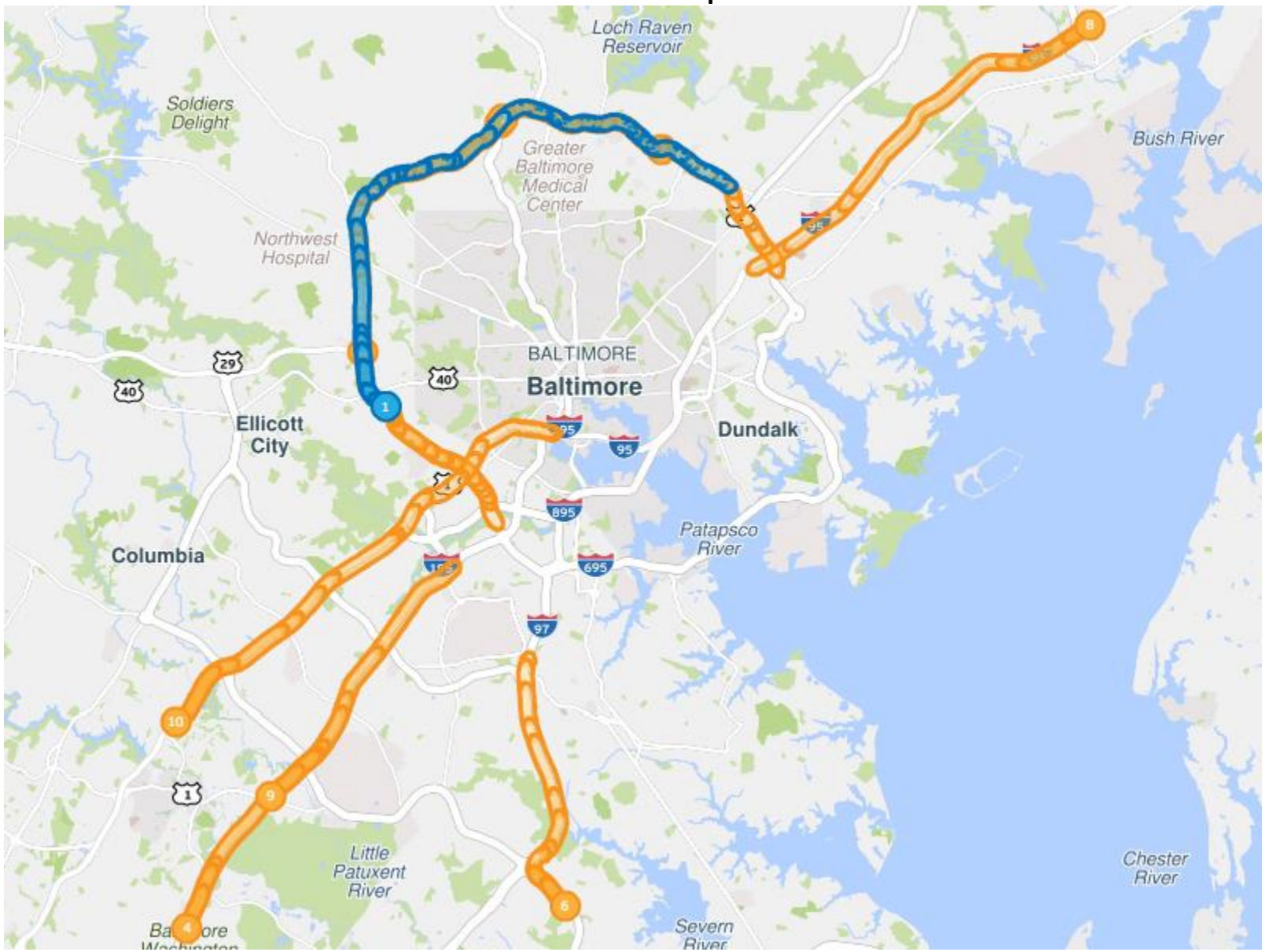


The Map view displays selected bottlenecks on a map. Each element occurring at the selected location is layered on the map, extending upstream from the head location to the maximum length of the specific *element*. As each element adds another layer on the map, road segments become more opaque. Segments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



Top 10 Bottlenecks in the Baltimore Region
4th Quarter 2018

Overview Map



Top 10 Bottlenecks in the Baltimore Region
4th Quarter 2018

By Total Delay

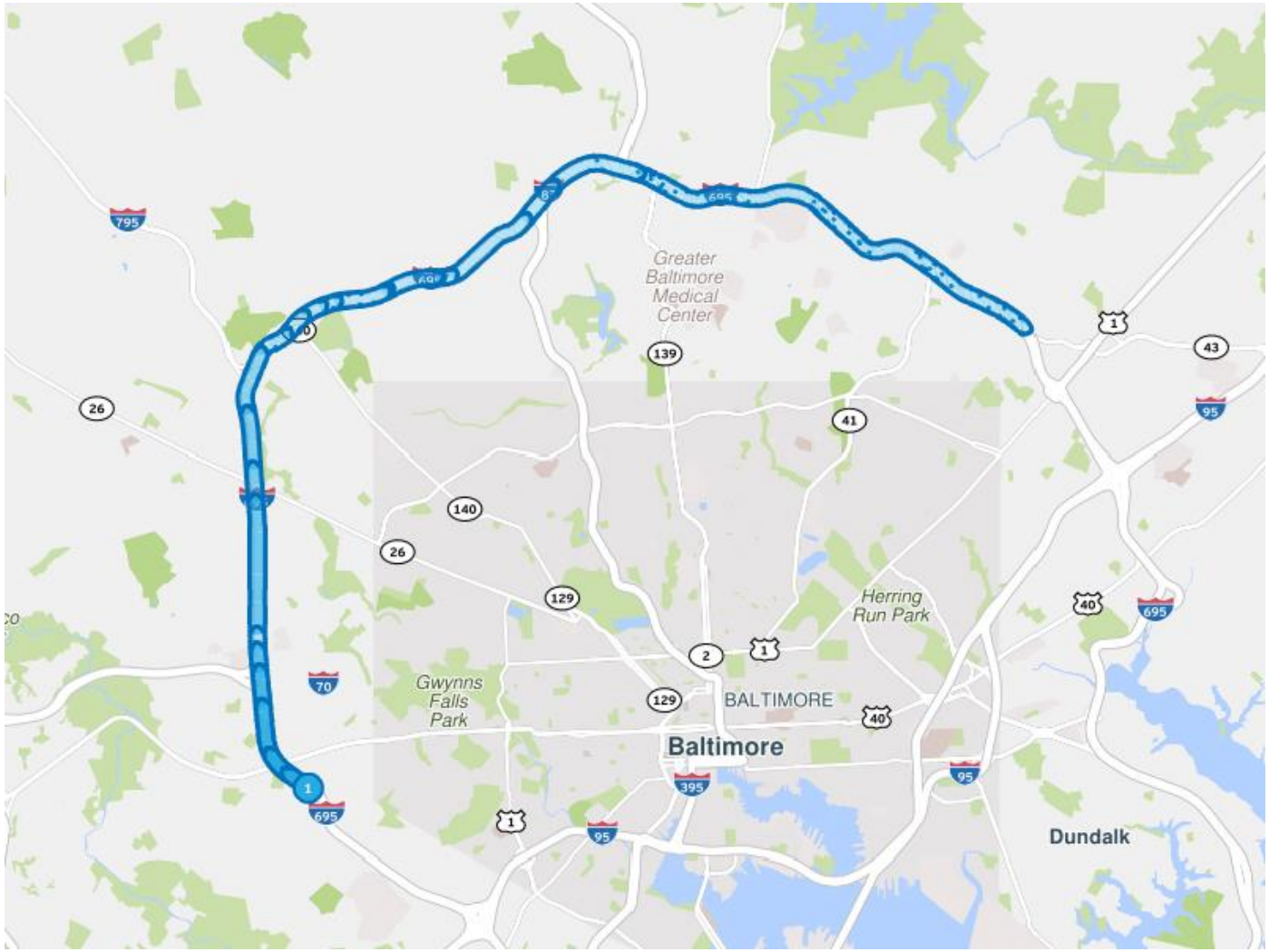
Raw speed drop weighted by vehicle miles traveled (VMT) factor. This table indicates the top 10 congested corridors in the region.

Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	I-695 OL @ EDMONDSON AVE/EXIT 14	3.75	3 h 34 m	1005	88686
2	I-695 IL @ I-83/MD-25/EXIT 23	3.62	2 h 03 m	809	94566
3	I-695 IL @ I-70/EXIT 16	2.96	2 h 32 m	522	83758
4	MD-295 S @ POWDER MILL RD	3.67	3 h 09 m	288	45730
5	I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29	5.09	1 h 06 m	771	87207
6	I-97 S @ MD-178/EXIT 5	2.76	2 h 10 m	242	63542
7	I-695 OL @ I-83/MD-25/EXIT 23	3.76	1 h 16 m	531	78890
8	I-95 N @ MD-24/EXIT 77	2.84	1 h 05 m	673	77527
9	MD-295 S @ MD-198	2.62	2 h 52 m	233	47519
10	I-95 S @ MD-216/EXIT 35	4.44	43 m	718	91773

IL = Inner Loop OL = Outer Loop

#1 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

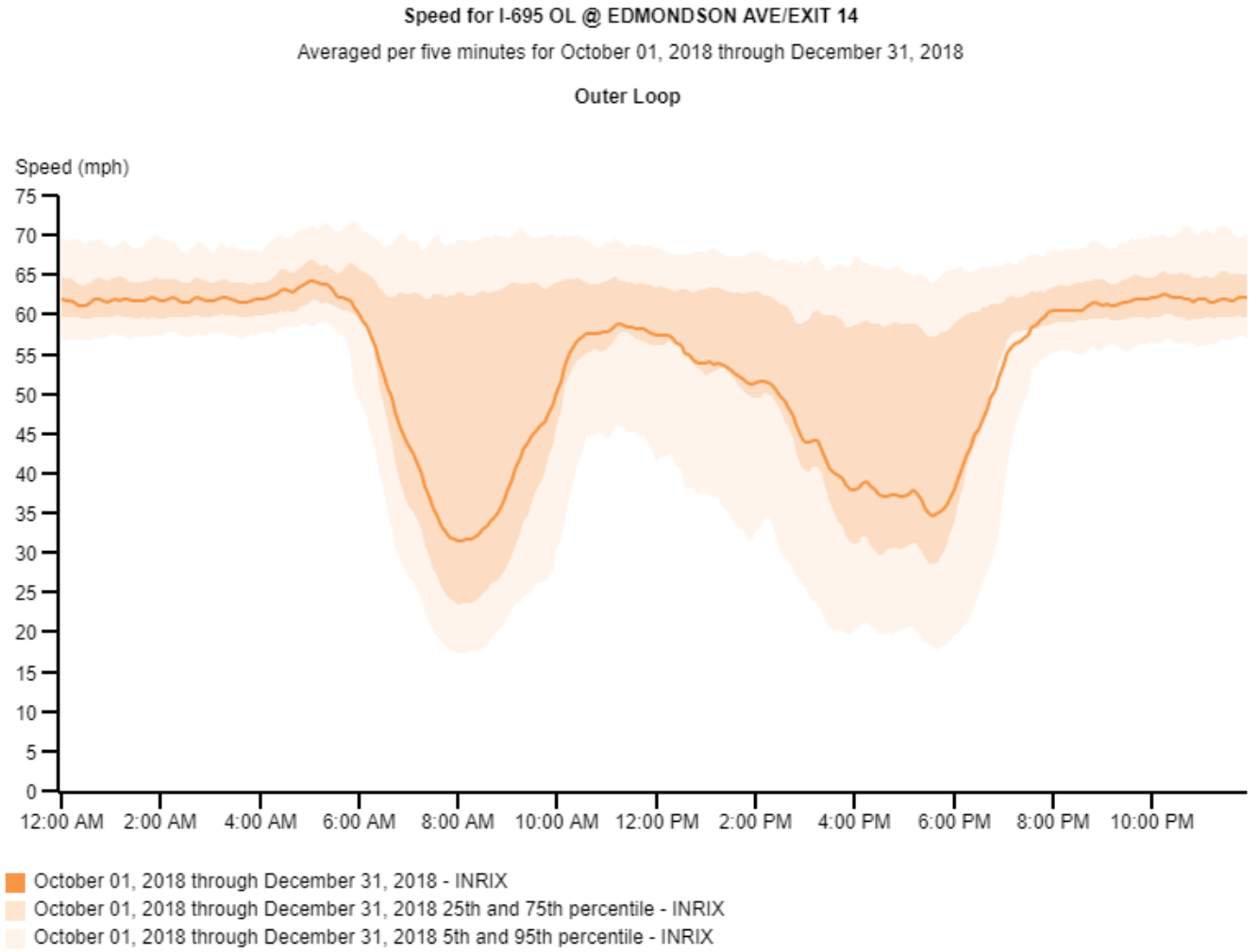
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	3.75	3 h 34 m	1005	88686



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.

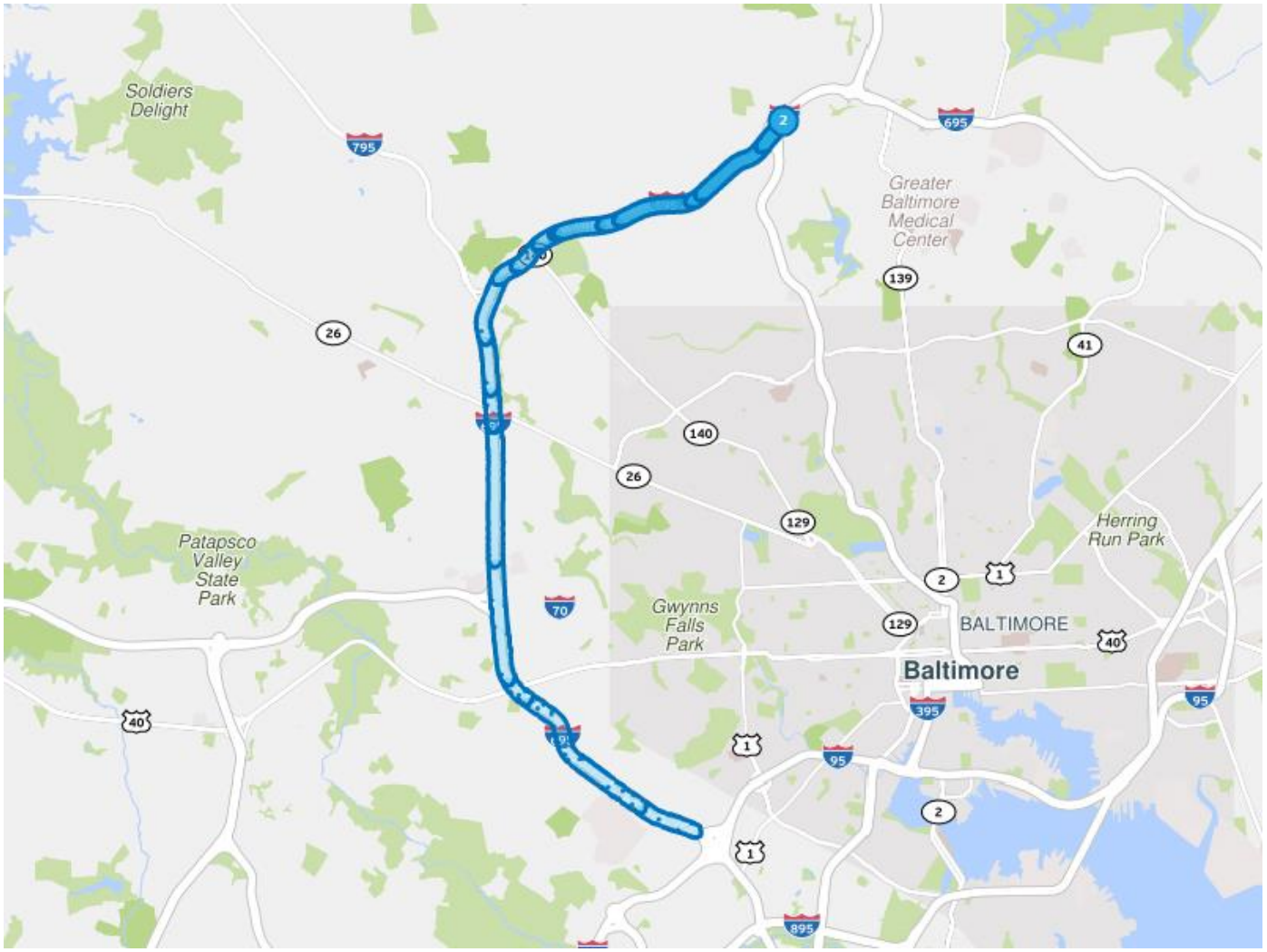
#1 Ranked Bottleneck in the Baltimore Region –4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	3.75	3 h 34 m	1005	88686



#2 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

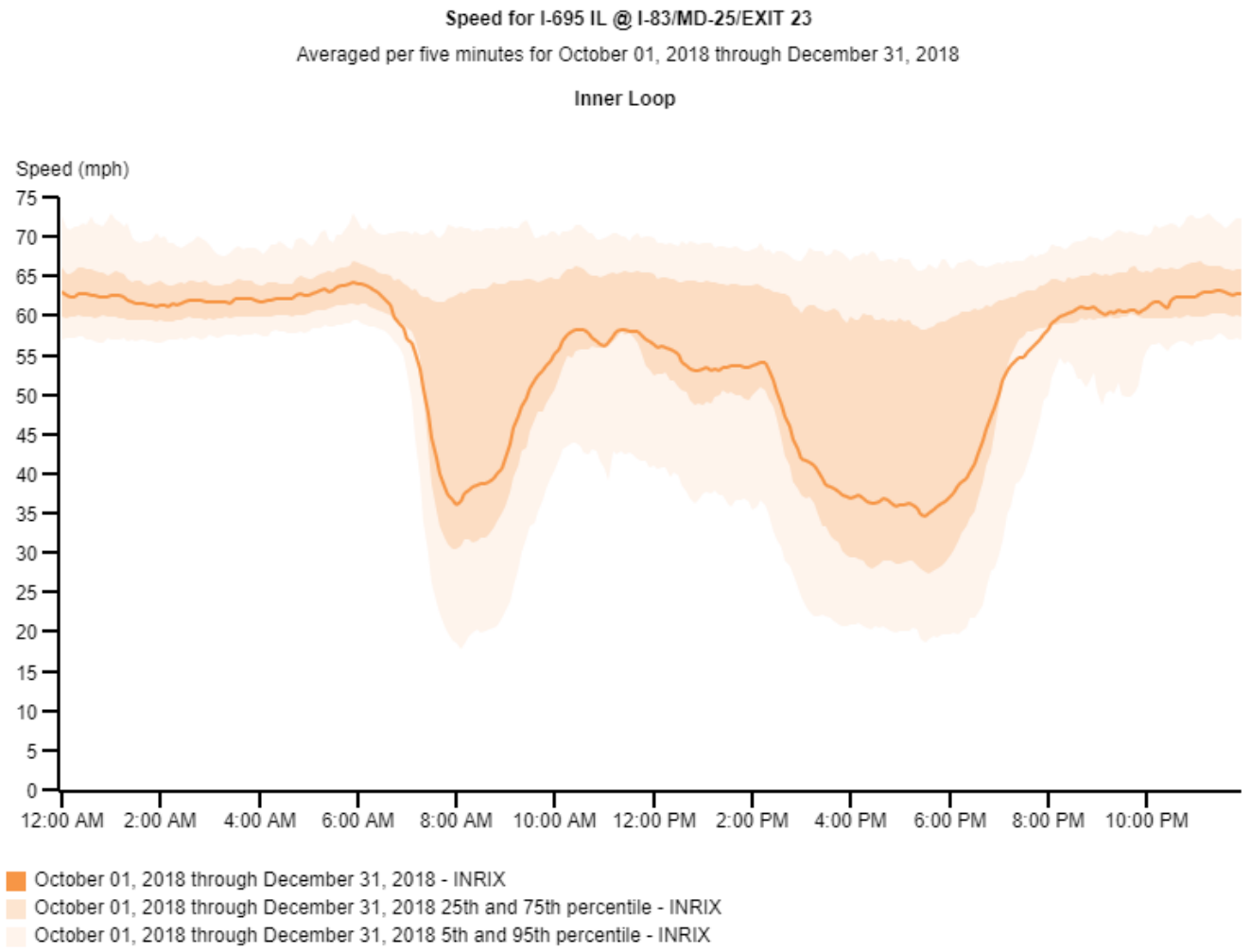
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ I-83/MD-25/EXIT 23	3.62	2 h 03 m	809	94566



Notes: ***Rush hour congestion more severe during the AM peak period. The lane drop approaching the ramp to southbound I-83 is a contributing factor, as are merging and weaving at the interchanges in this segment***

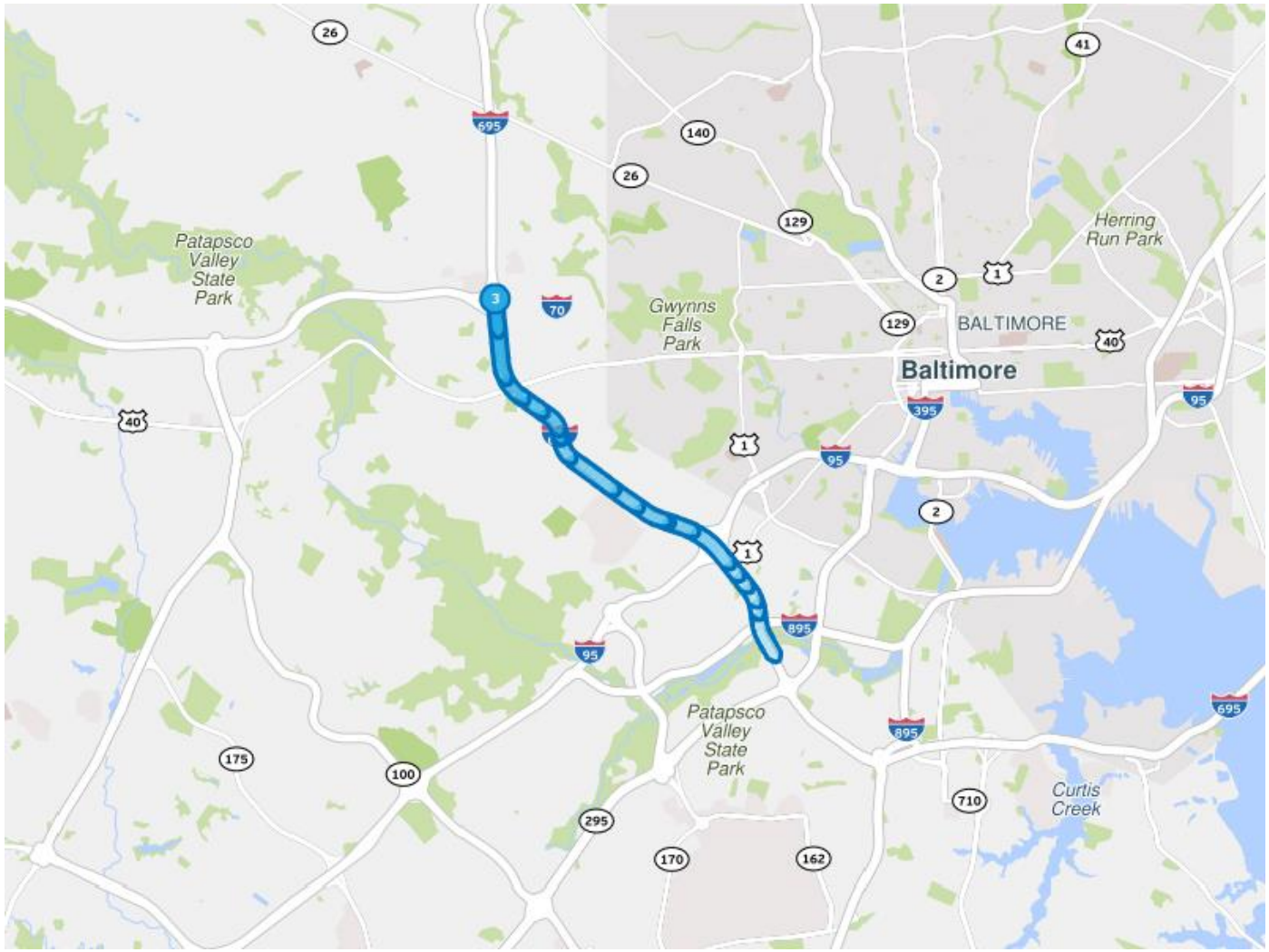
#2 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ I-83/MD-25/EXIT 23	3.62	2 h 03 m	809	94566



#3 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

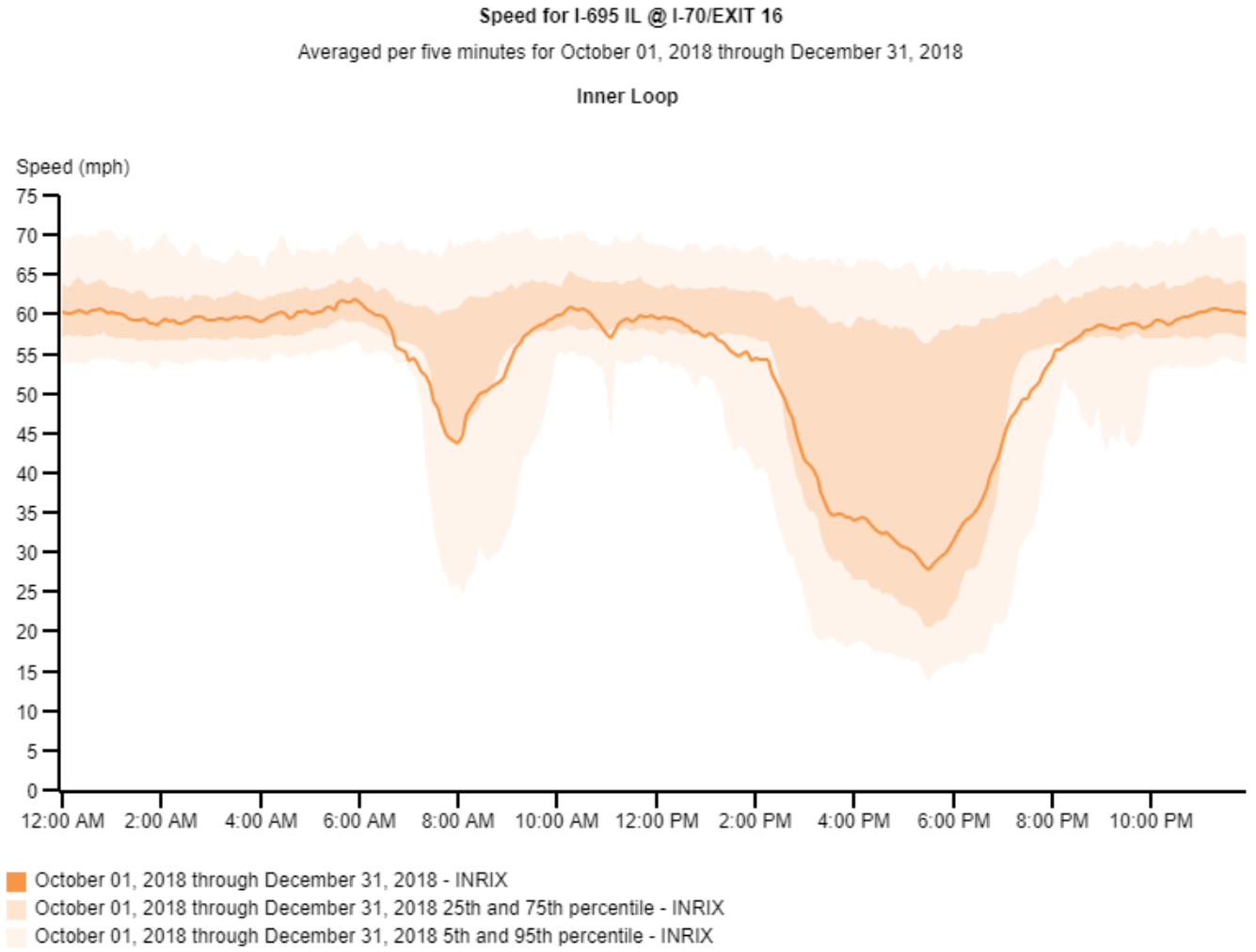
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ I-70/EXIT 16	2.96	2 h 32 m	522	83758



Notes: Afternoon congestion on the inner loop of the beltway with the greatest delays between MD 144 and the lane drop at I-70. High-volume ramps from Security Blvd, I-70 and US 40 contributed to the congestion

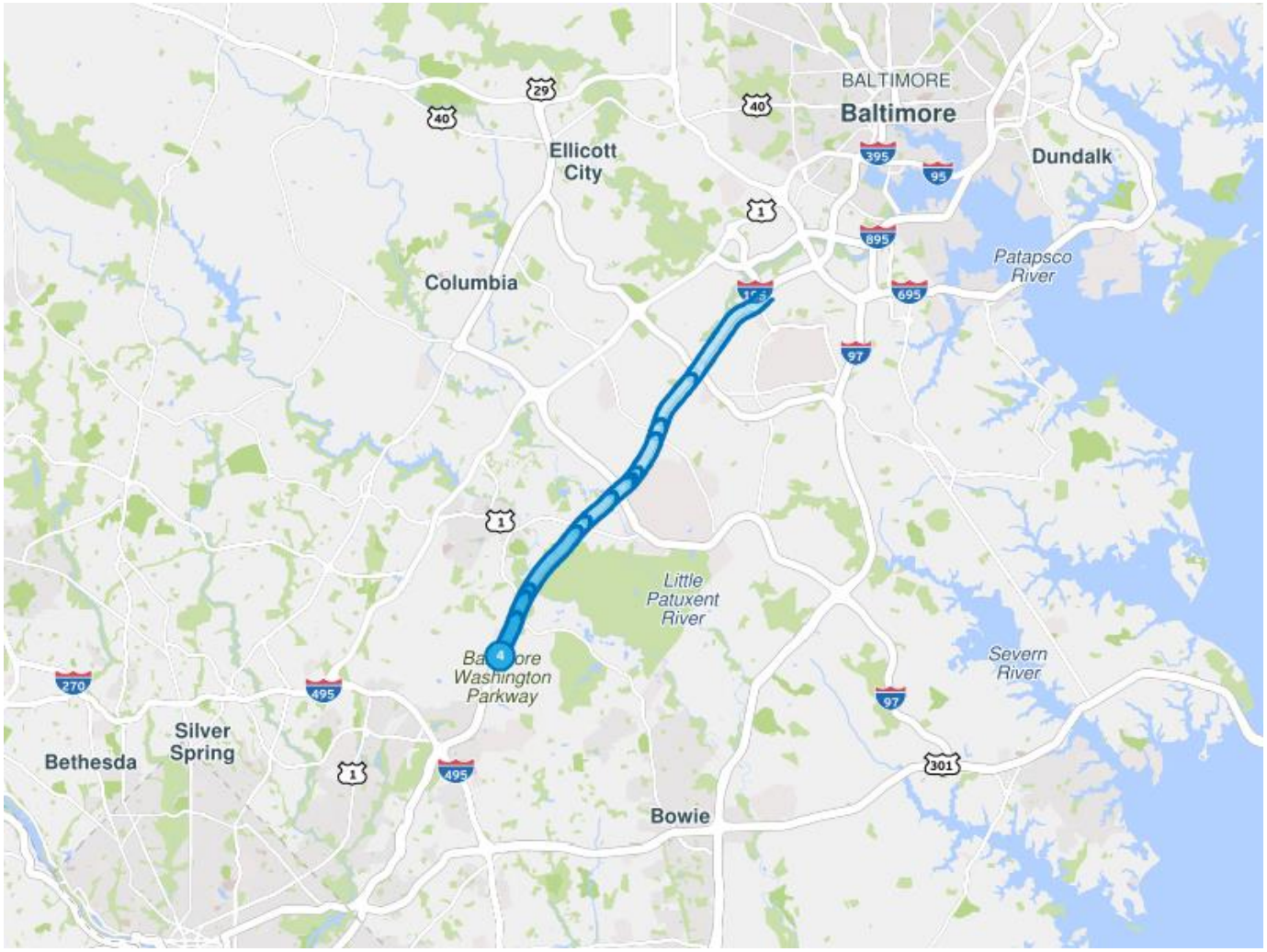
#3 Ranked Bottleneck in the Baltimore Region –4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ I-70/EXIT 16	2.96	2 h 32 m	522	83758



#4 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

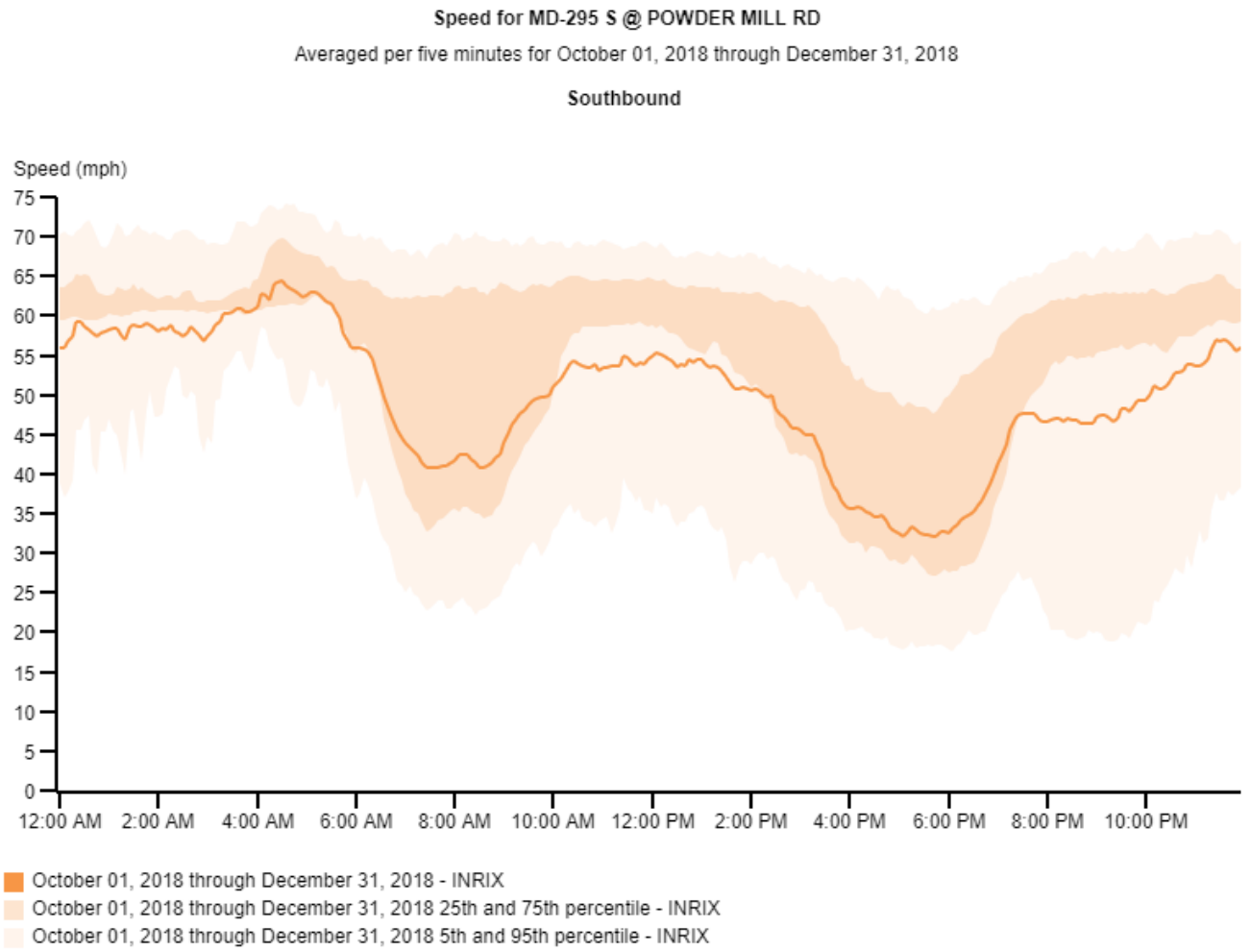
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ POWDER MILL RD	3.67	3 h 09 m	288	45730



Notes: ***Southbound congestion extending from Powder Mill Rd just barely extending into the southern portion of the Baltimore region near Fort Meade occurring during both the morning and afternoon peak periods.***

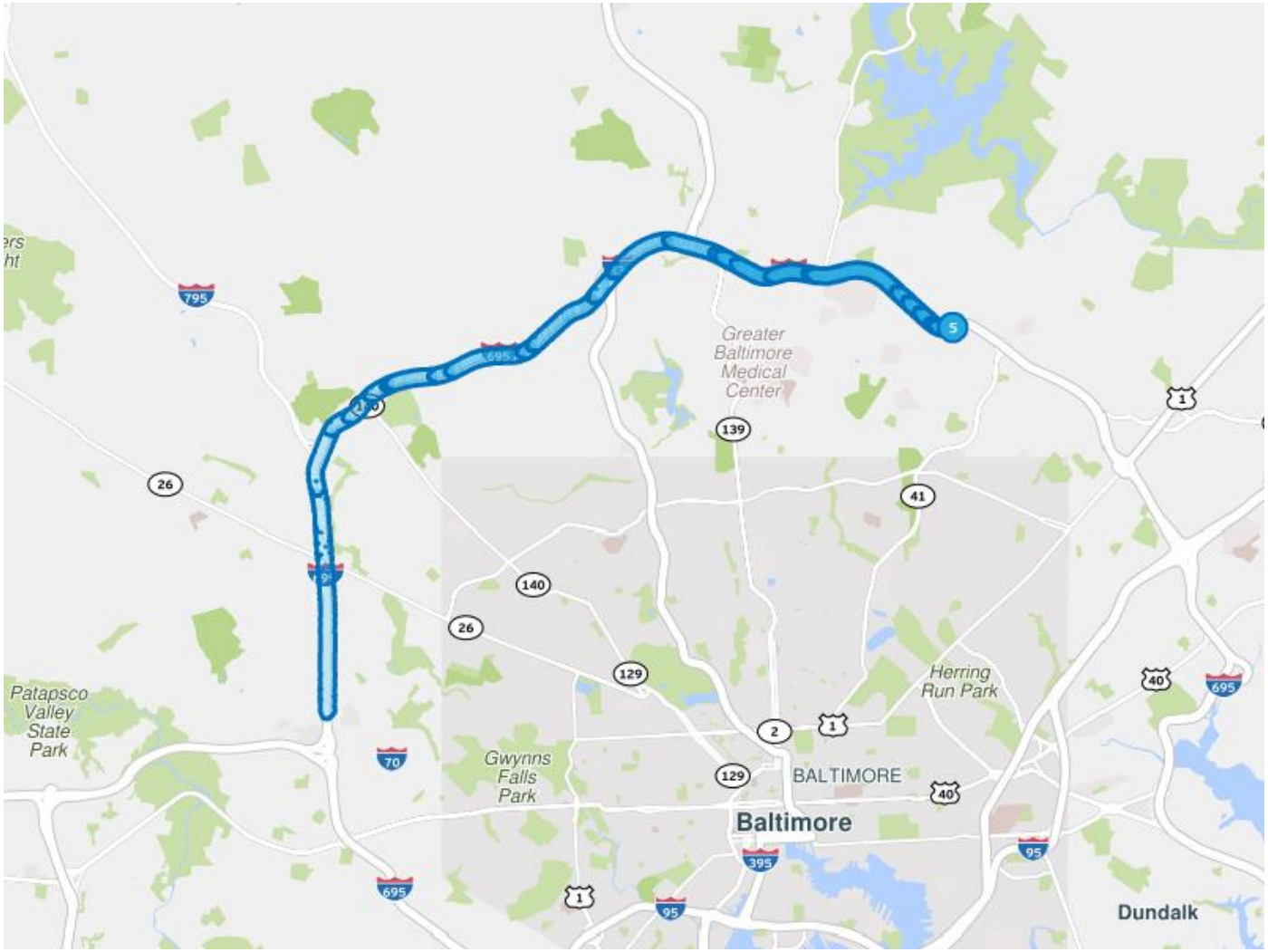
#4 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ POWDER MILL RD	3.67	3 h 09 m	288	45730



#5 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

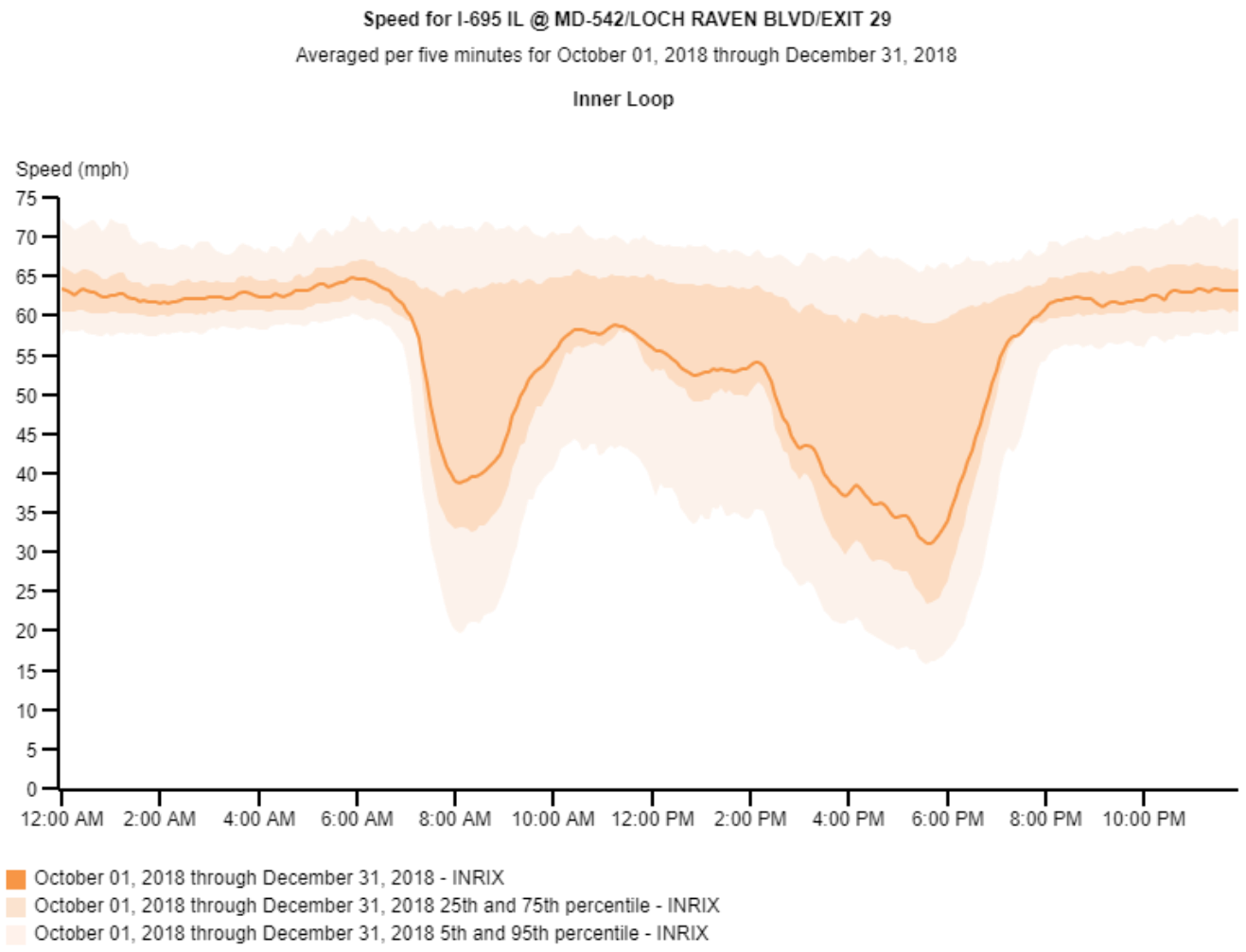
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29	5.09	1 h 06 m	771	87207



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).

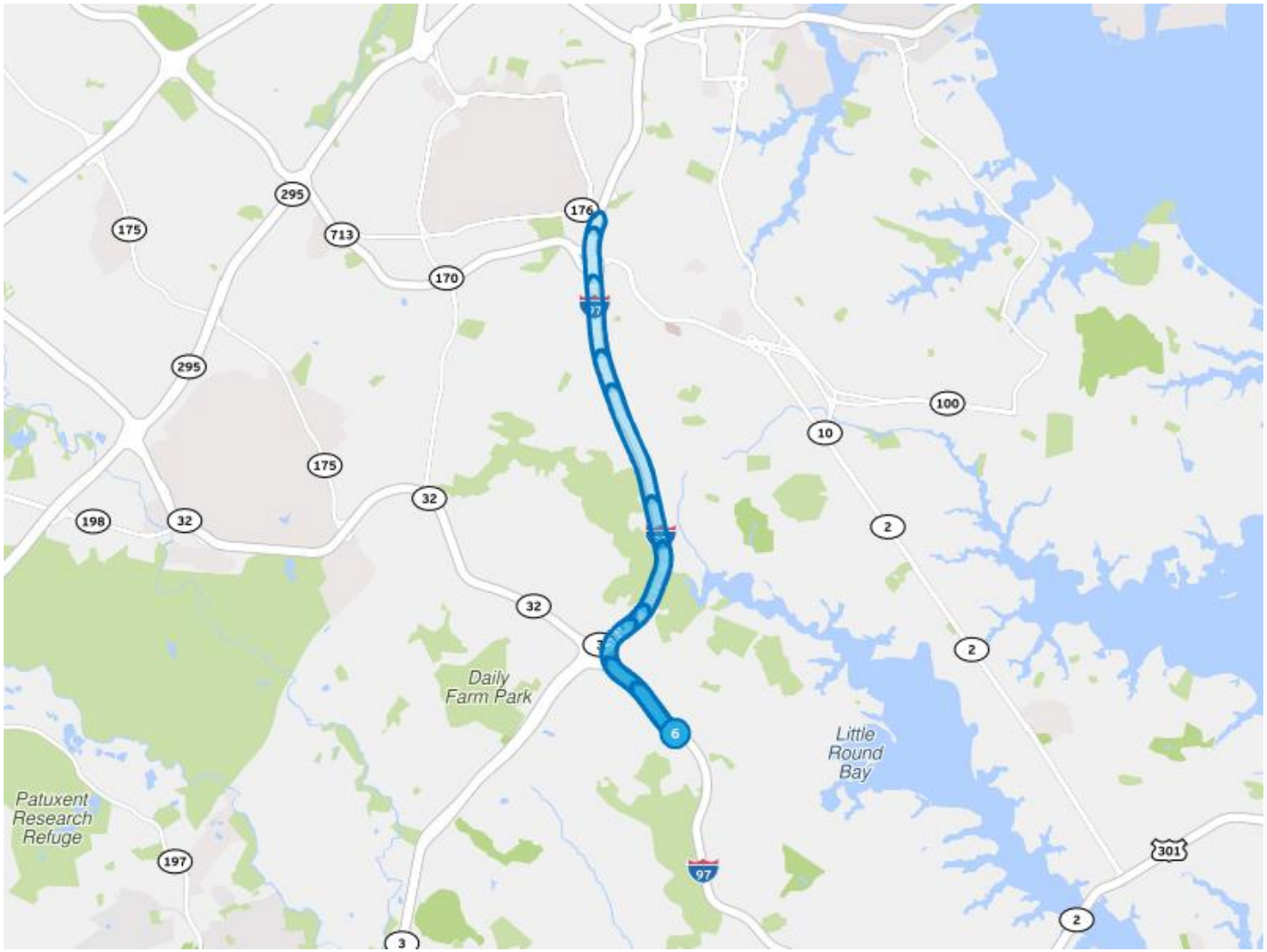
#5 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29	5.09	1 h 06 m	771	87207



#6 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

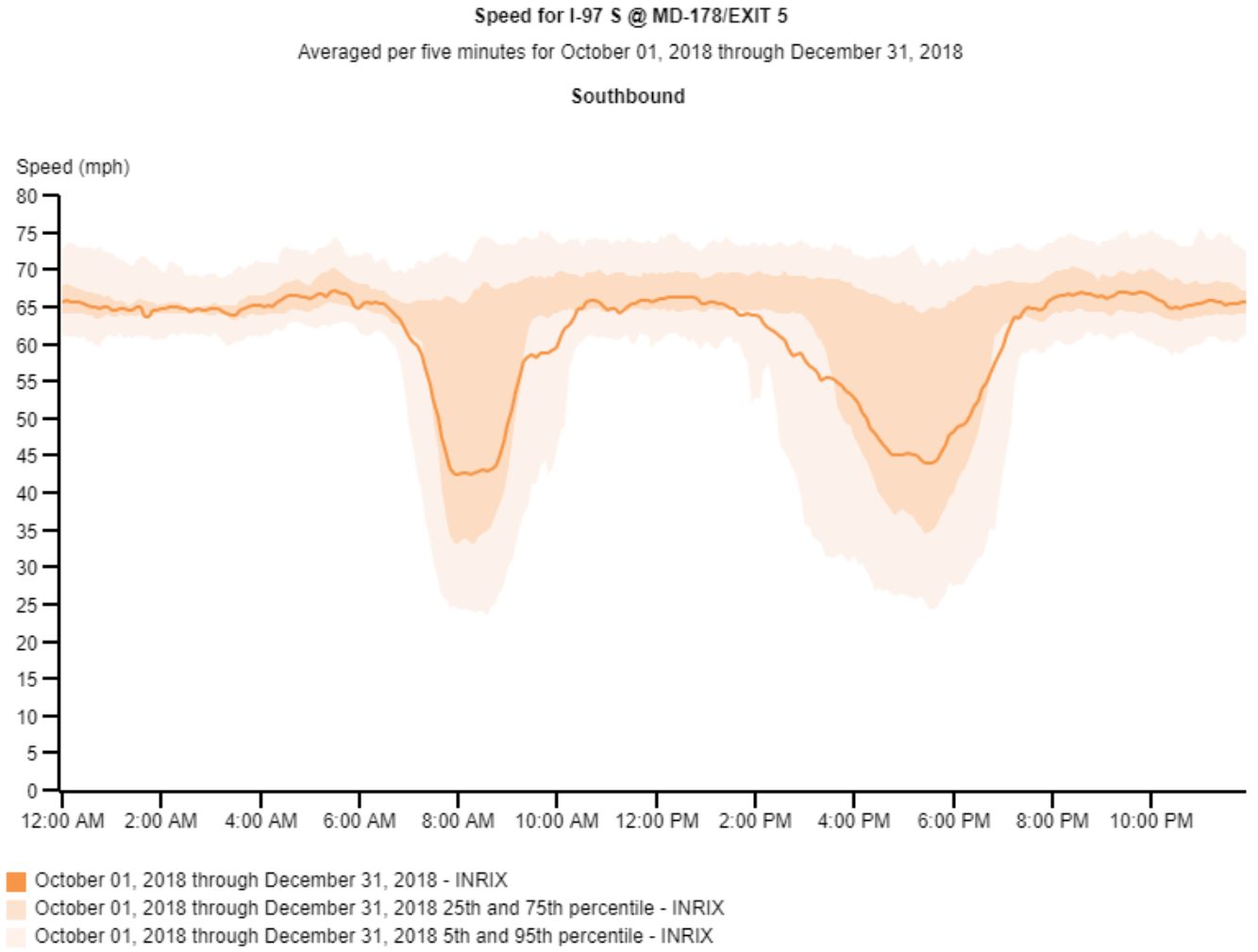
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-97 S @ MD-178/EXIT 5	2.76	2 h 10 m	242	63542



Notes: Major curve and merge at MD-32 causes slow downs in both the AM and PM rush hours.

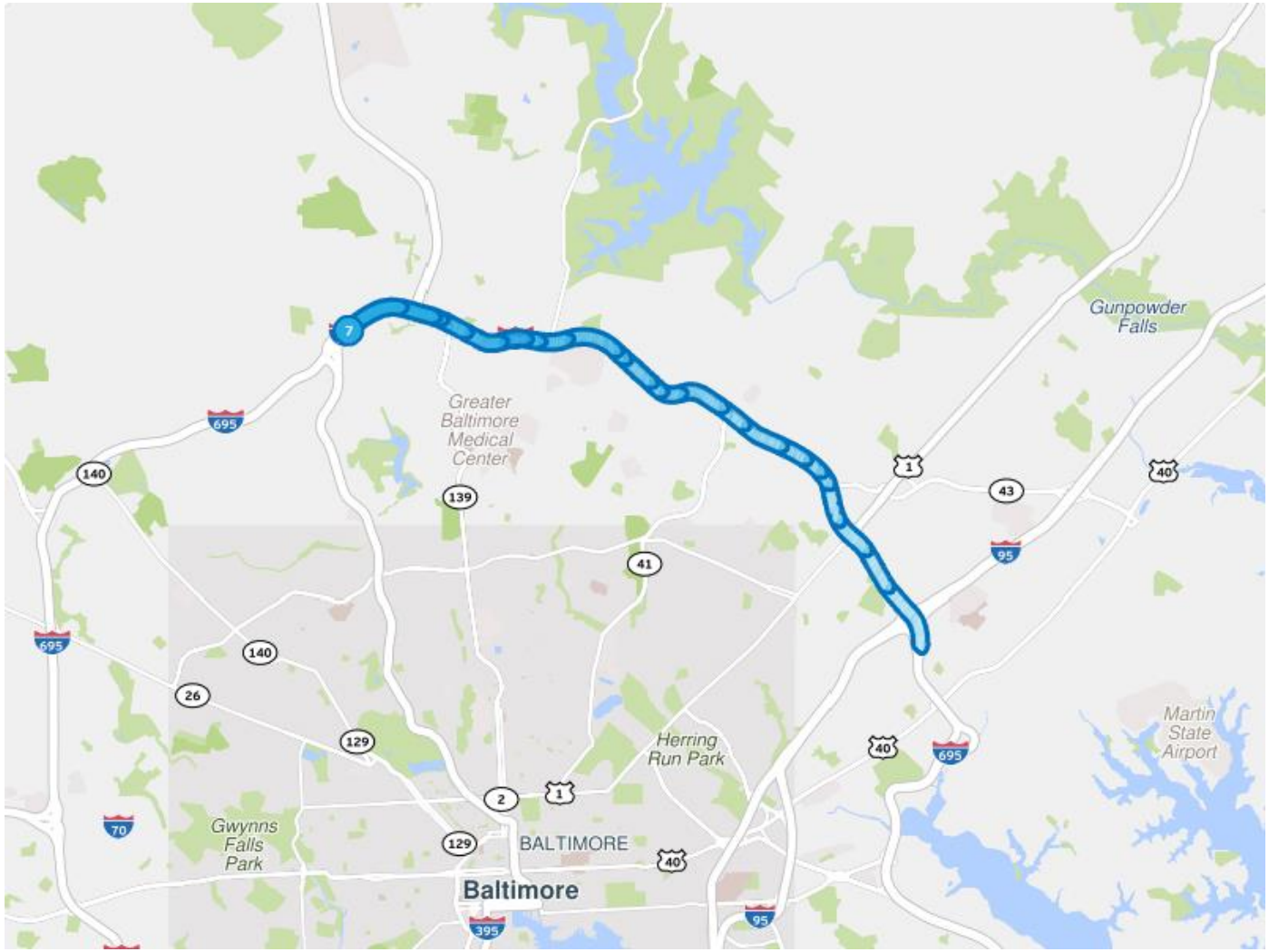
#6 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-97 S @ MD-178/EXIT 5	2.42	3 h 10 m	306	62331



#7 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

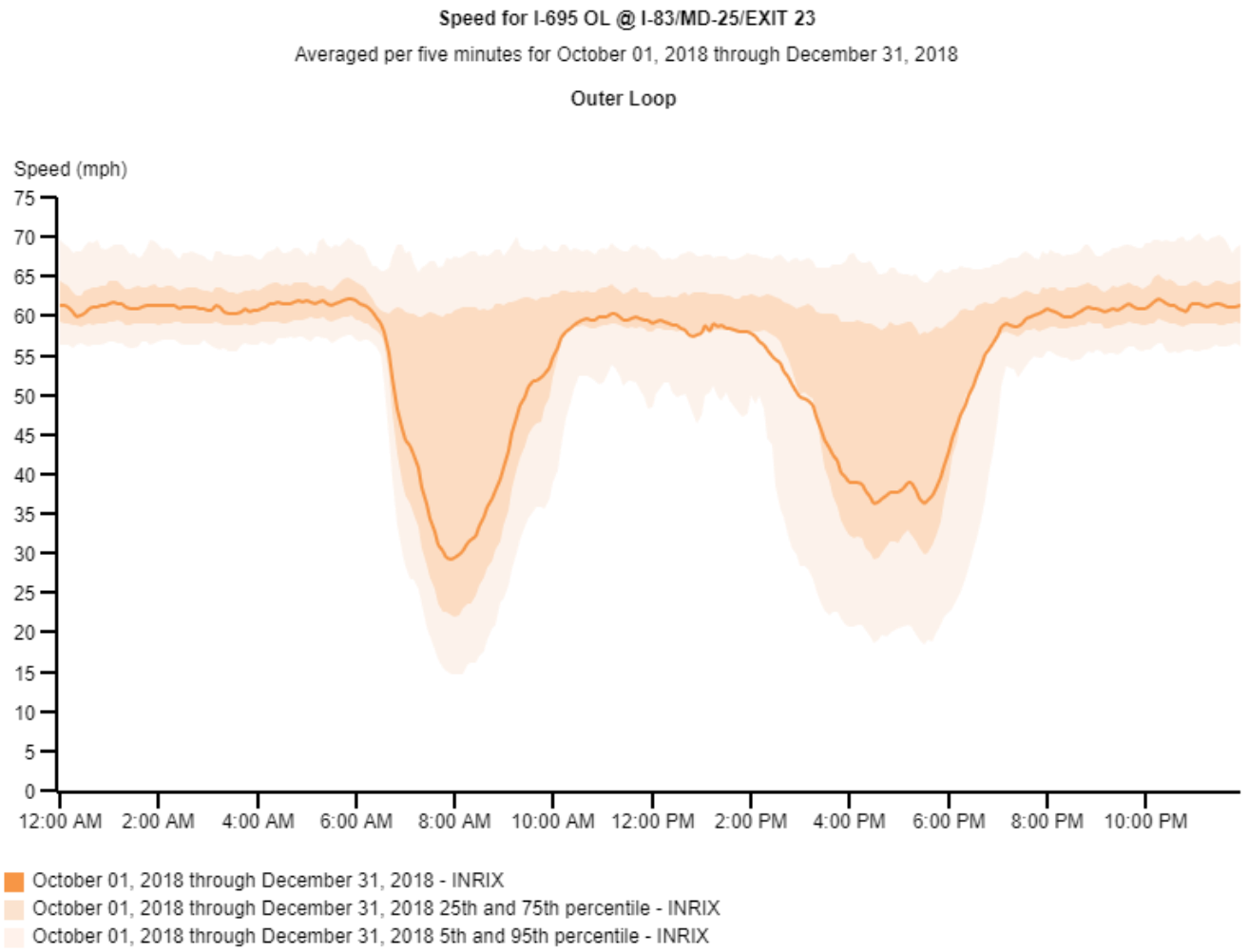
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @I-83/MD-25/EXIT 23	3.76	1 h 16 m	531	78890



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).

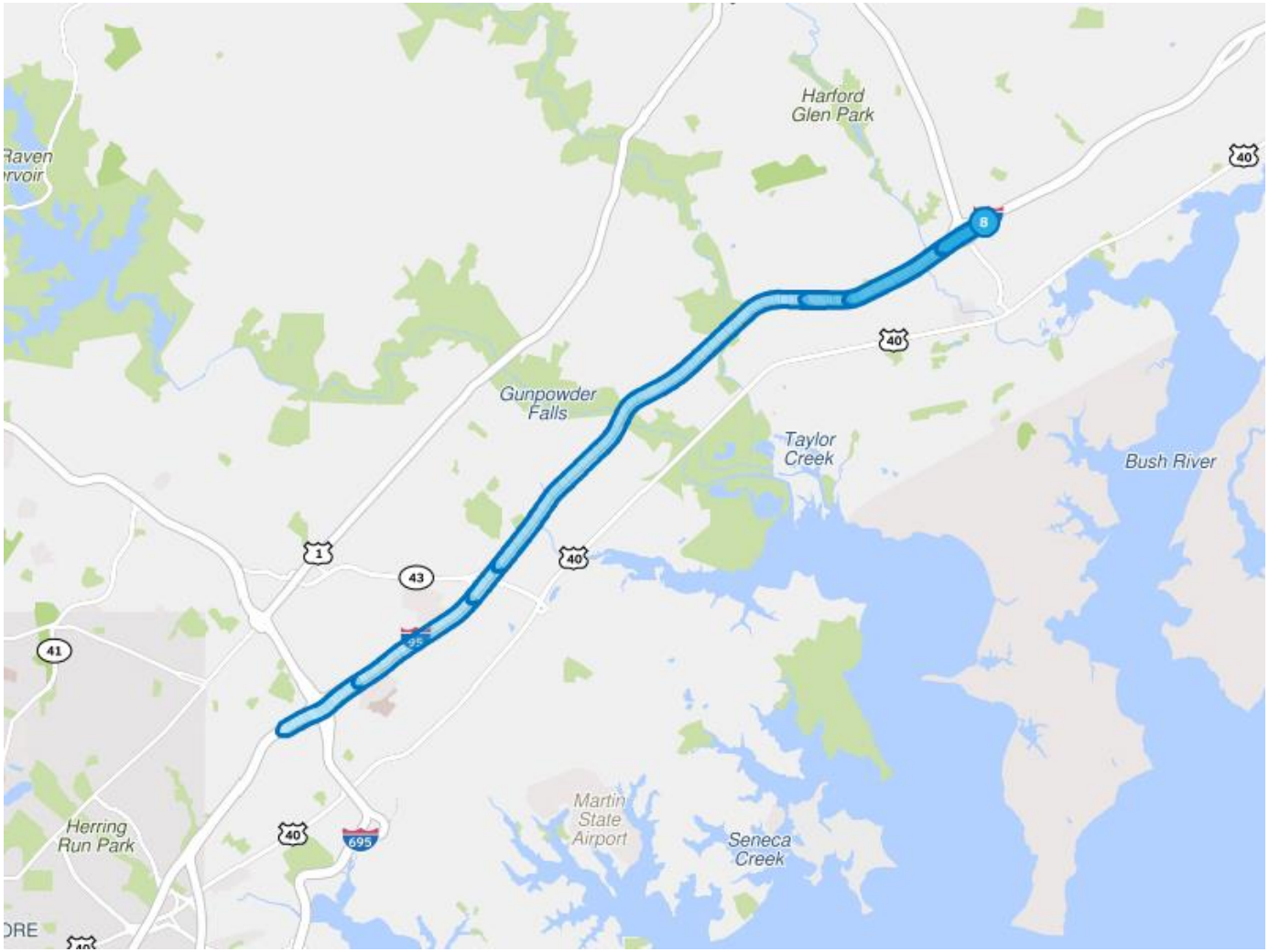
#7 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @I-83/MD-25/EXIT 23	3.76	1 h 16 m	531	78890



#8 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

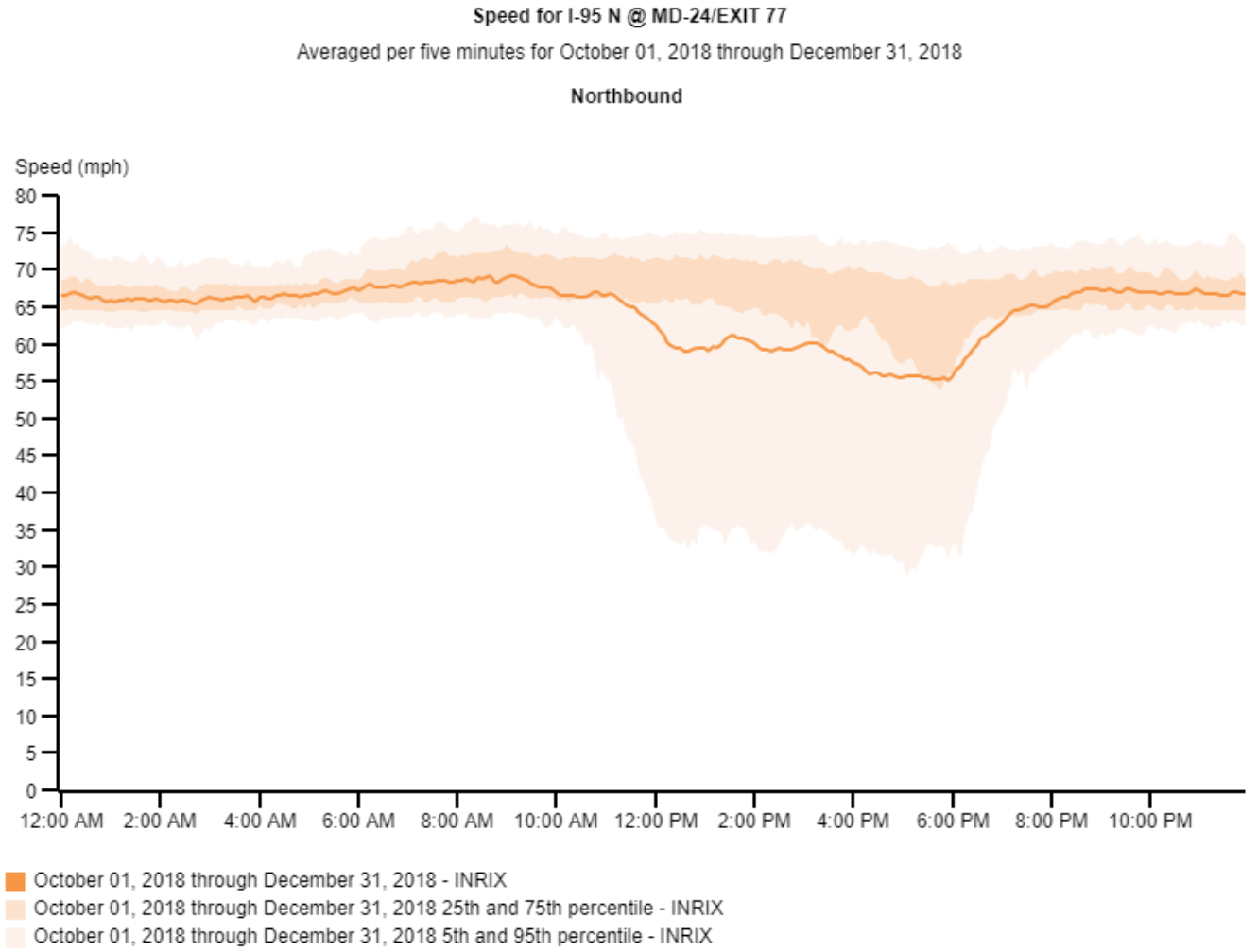
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ MD-24/EXIT 77	2.84	1 h 05 m	673	77527



Notes: Non recurring congestion occurring primarily around the Thanksgiving and Christmas holiday weeks.

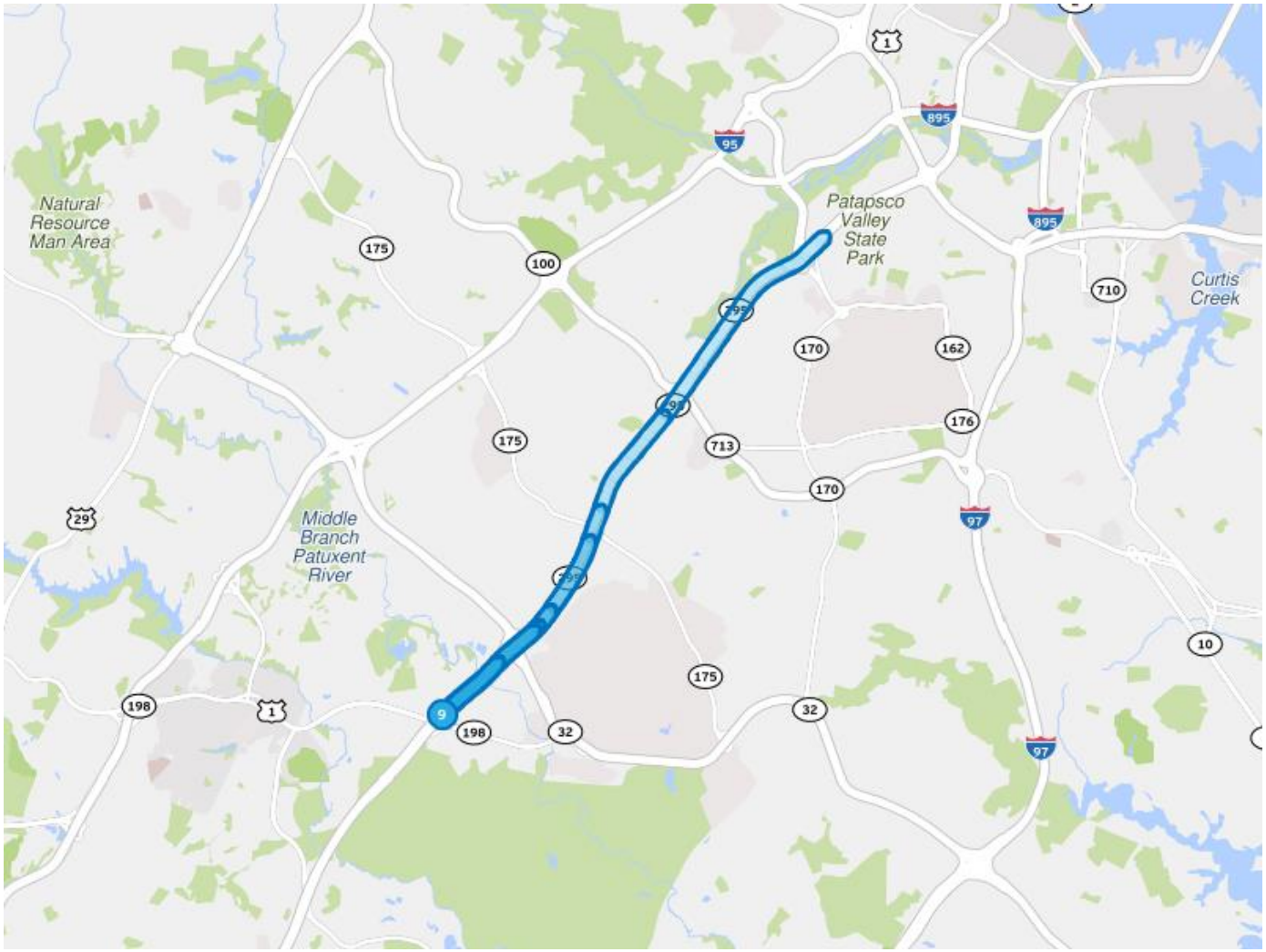
#8 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 N @ MD-24/EXIT 77	2.84	1 h 05 m	673	77527



#9 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

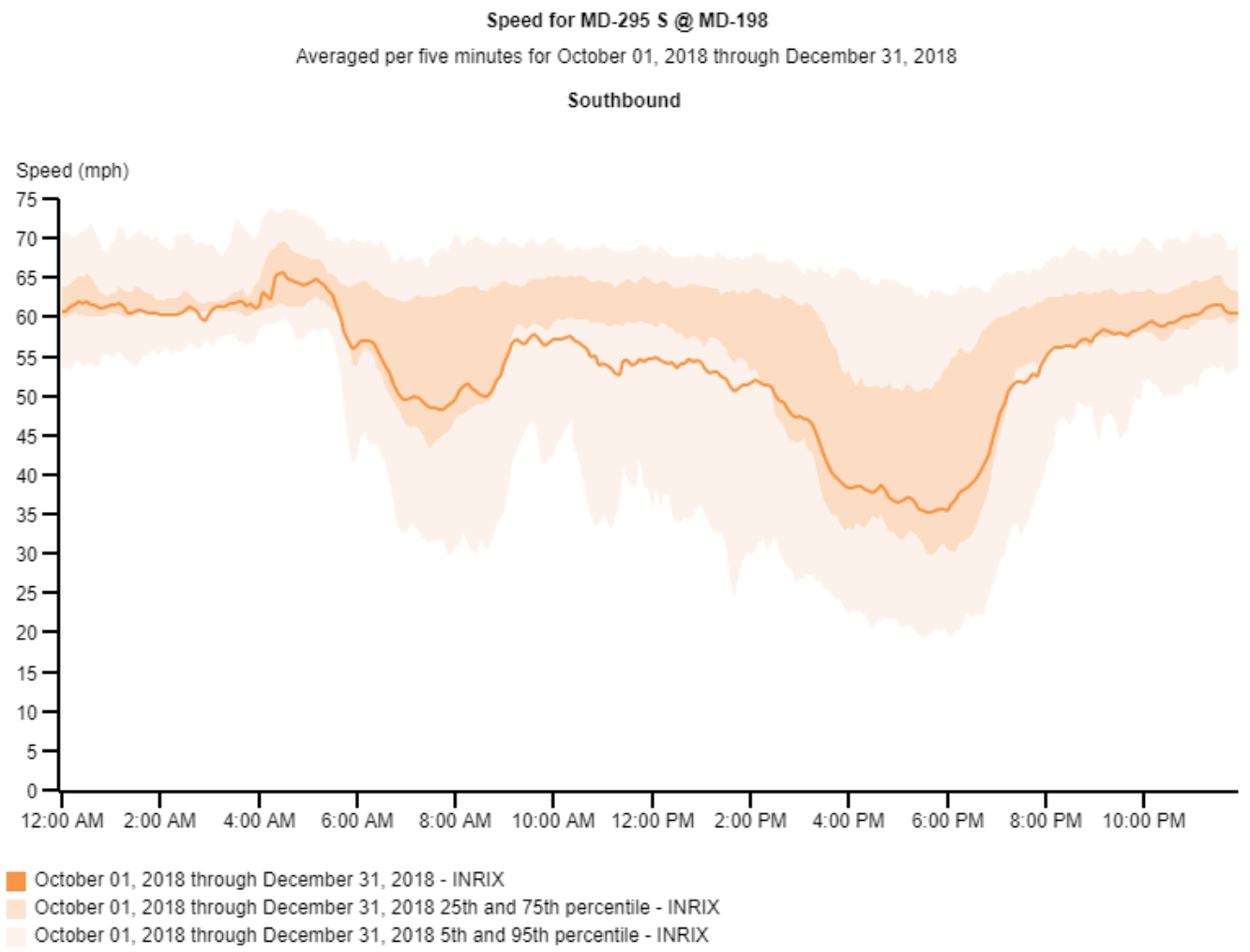
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.62	2 h 52 m	233	47519



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

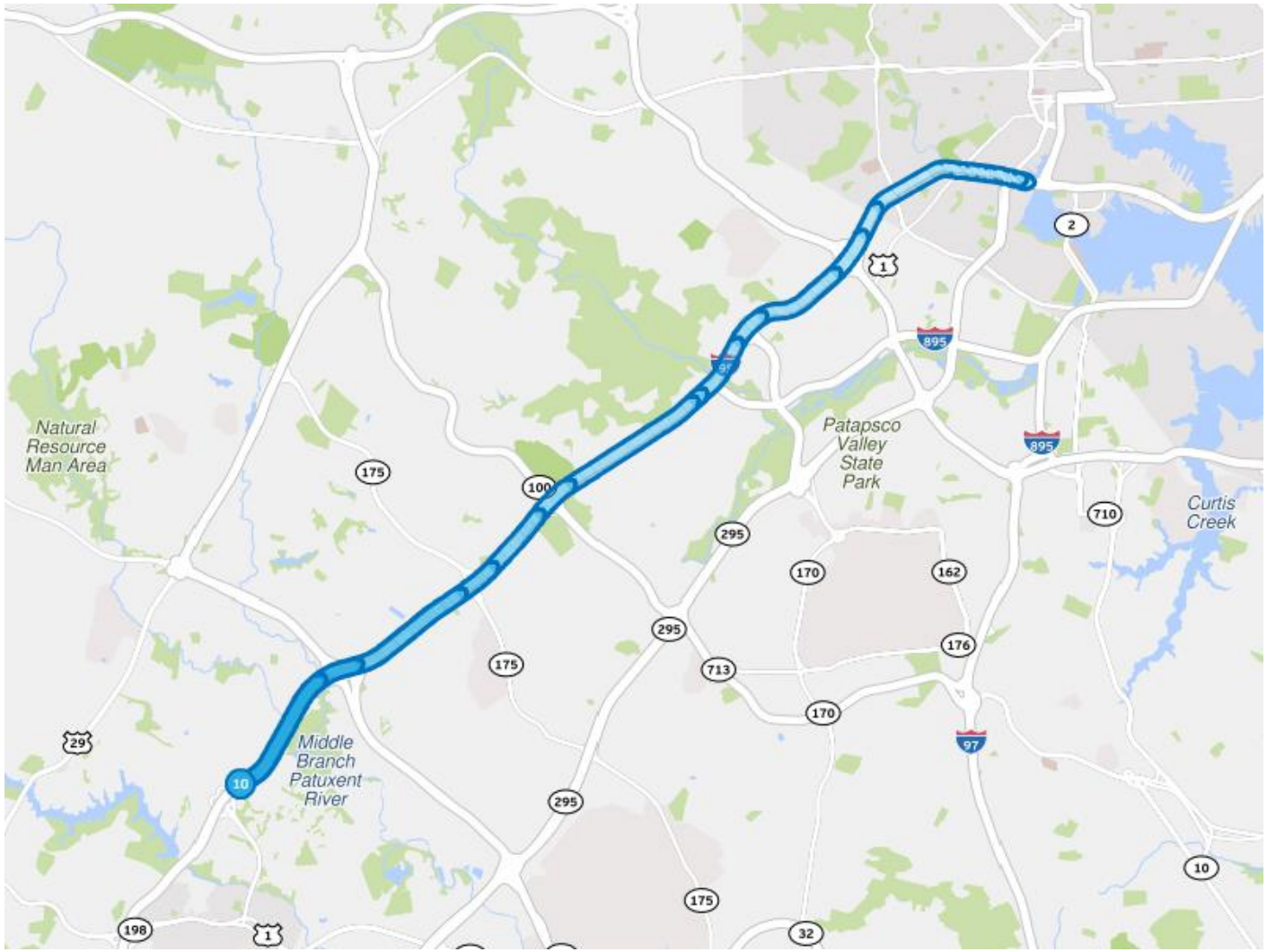
#9 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.62	2 h 52 m	233	47519



#10 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

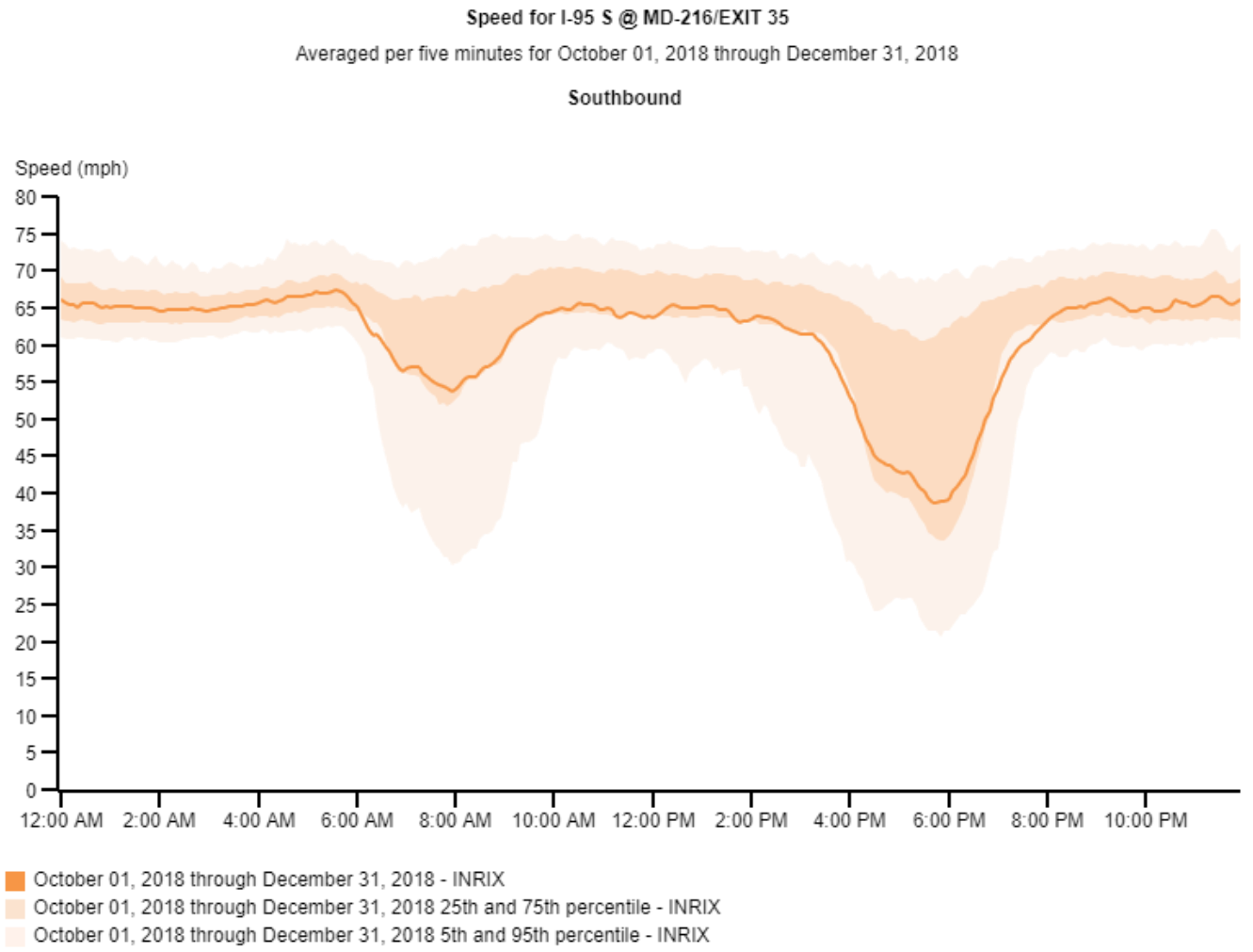
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-216/EXIT 35	4.44	43 m	718	91773



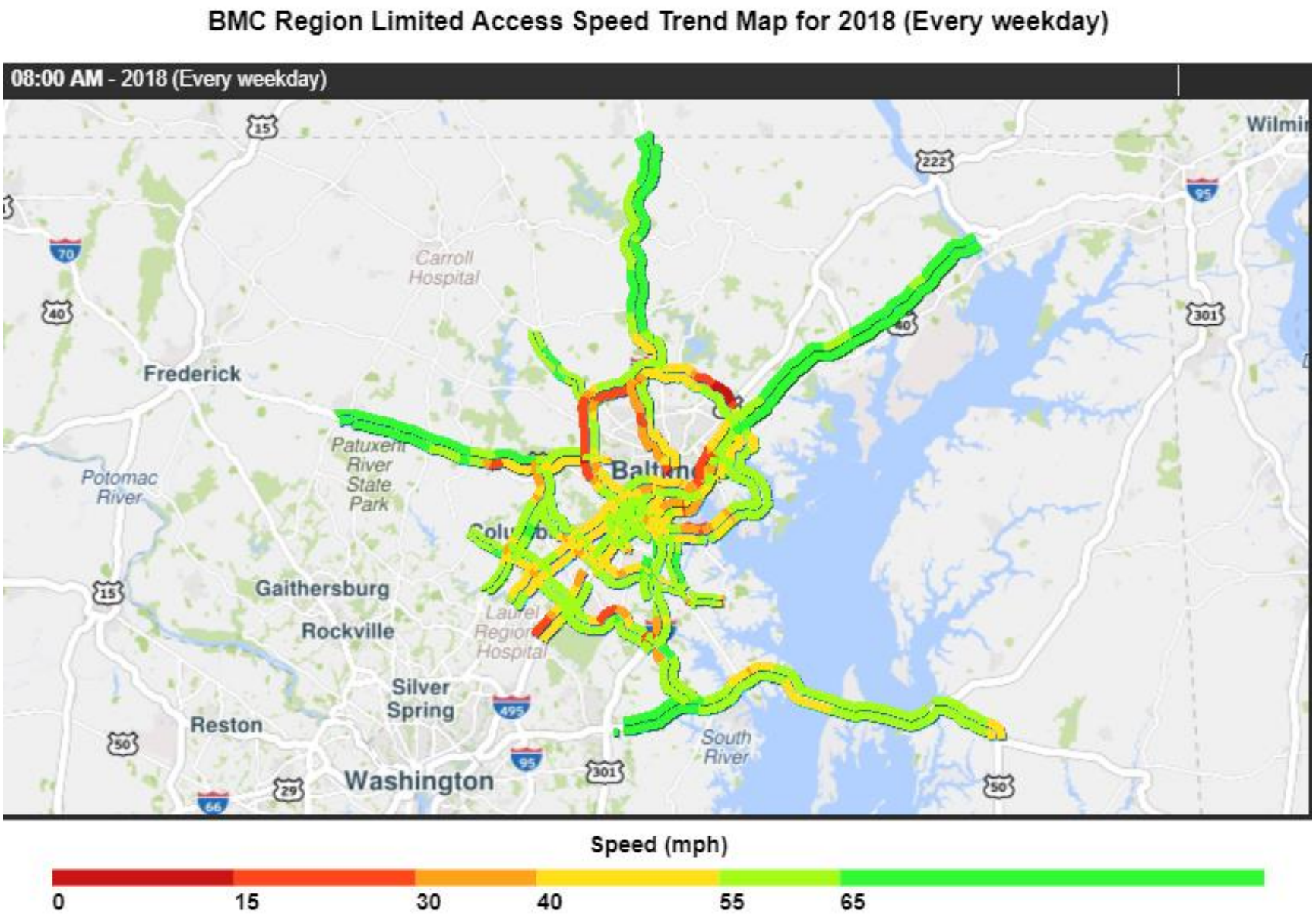
Notes: High traffic volume area heading towards Washington, DC with high incident rates. This bottleneck often begins further south towards the Capital Beltway.

#10 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2018

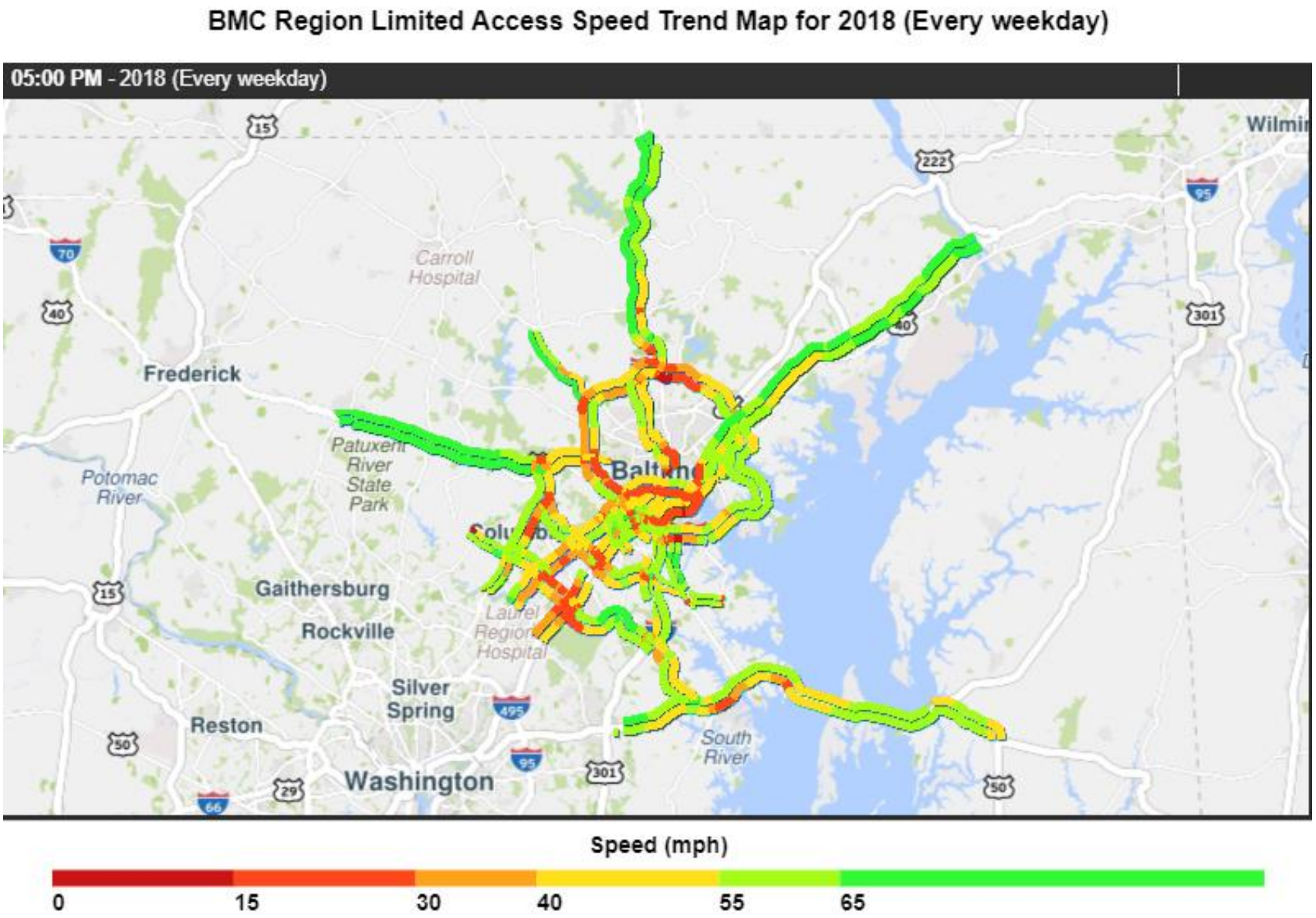
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-216/EXIT 35	4.44	43 m	718	91773



Average Speed Maps – AM Peak Period 8:00-9:00 Weekdays: 4th Quarter 2018



Average Speed Maps – PM Peak Period 5:00-6:00 Weekdays: 4th Quarter 2018



Probe Data Analytics

Data and graphics in this report were generated from the *Probe Data Analytics* suite. *The Probe Data Analytics Suite (PDA) formerly known as the Vehicle Probe Project* (VPP) is a groundbreaking initiative and collaborative effort among the I-95 Corridor Coalition, University of Maryland, INRIX, HERE and Tom Tom and has been providing comprehensive and continuous real-time travel information for more than seven years. Member agencies like the Baltimore Metropolitan Council have found numerous uses for the data beyond simply travel information.

There are **now** **7,000 centerline freeway miles**, more than **20,000 freeway and arterial miles** in all, including continuous coverage of the I-95 corridor from New Jersey through Florida. Coverage also exists in Rhode Island. The network includes full coverage of freeways and major arterials in North Carolina and the Tidewater area of Virginia, full or nearly full coverage of limited access roads in New Jersey, Maryland and South Carolina and the northern and eastern portions of Florida. In addition, coverage now includes ramps at 160 major highway-to- highway interchanges, with all states having interchanges included except Georgia.

Agency Participation
As the value of the data from the Vehicle Probe Project is realized through the various applications and the continued quality via the validation efforts, the member states have increased their commitment to this project. In fact, all of the participating states have committed their own funds to continue this project and many have increased their coverage far beyond the initial core area.

Numerous Uses for the Data
I-95 Corridor Coalition member agencies have found many uses for the vehicle probe data, including:

- Travel Information for 511 (web and phone) Systems, Dynamic Message Signs, and Kiosks
- Travel Time Calculations for Message Boards
- Performance Measures and Travel Time Reliability Support
- Traffic Pattern Observations (in-state and multi-state)
- Trip Planning (www.i95travelinfo.net)
- Performance Measures Tool – Continuing the momentum in performance analysis, the newest initiative from the Coalition is the Vehicle Probe Project Suite. The basic tools include:

Bottleneck and Incident dashboard
Massive Raw Data Downloader
Historical Data Visualizations and Performance Measures (Congestion Scan)
UMD CATT Lab made the VPP suite available to participating agencies. For the training video, please visit http://vpp.ritis.org/suite/screencast/

Should you have any questions, please contact:

- For general project questions, Marygrace Parker at 518-852-4083 or *i95mgp@ttlc.net*
  For the Vehicle Probe Project Suite, Michael L. Pack at 301-405-0722 or *packml@umd.edu*

Project Manager · Victor Henry

Author · Edward Stylc

Data Collection Contributors
I-95 Corridor Coalition · University of Maryland CATT Lab · INRIX
Skycomp

Mike Kelly, Executive Director
Todd Lang, Director of Transportation Planning
Regina Aris, Assistant Director of Transportation Planning

Baltimore Metropolitan Council
1500 Whetstone Way, Suite 300 | Baltimore, Maryland 21230
www.baltometro.org