BALTIMORE METROPOLITAN COUNCIL

Quarterly Congestion Analysis Report for the Baltimore Region

Top 10 Bottleneck Locations

3rd Quarter 2019

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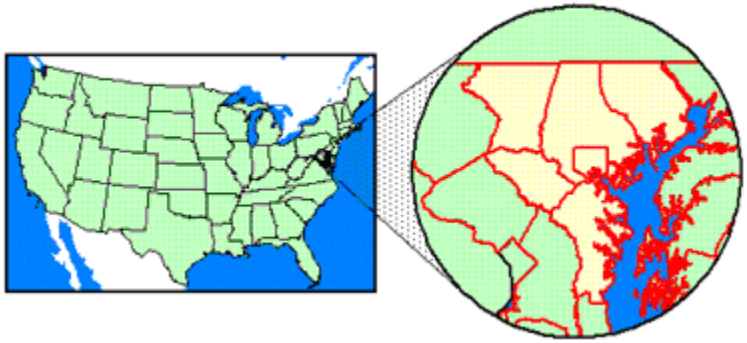
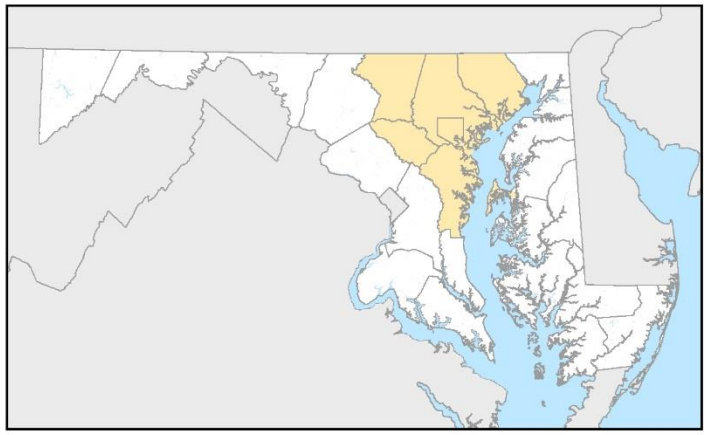
About the Region

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

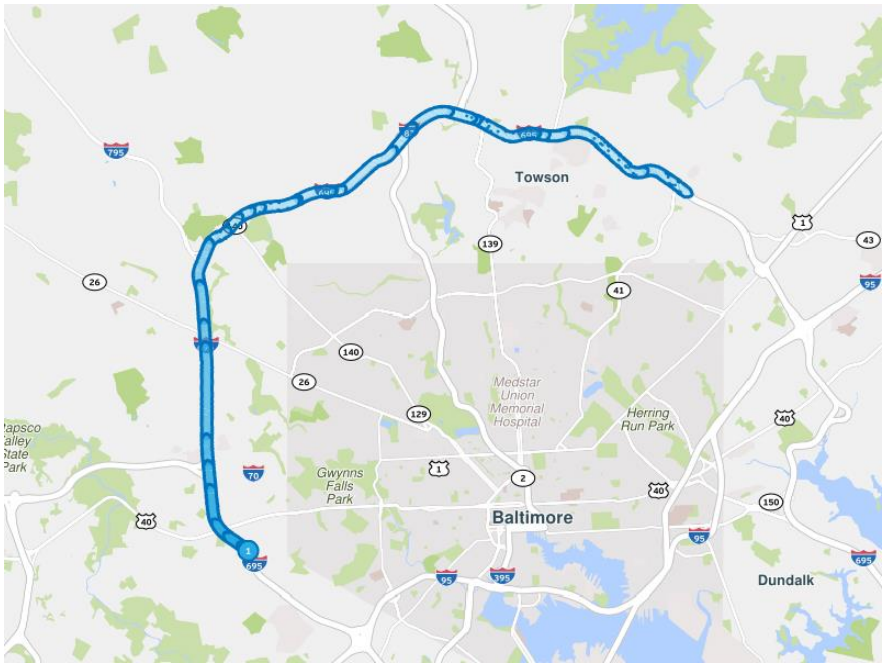
How are bottleneck conditions tracked?

- **Rank** - The ranked position of the location according to the current table ordering by Base Impact – the aggregation of queue length over time for congestion at each location in mile minutes
- **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

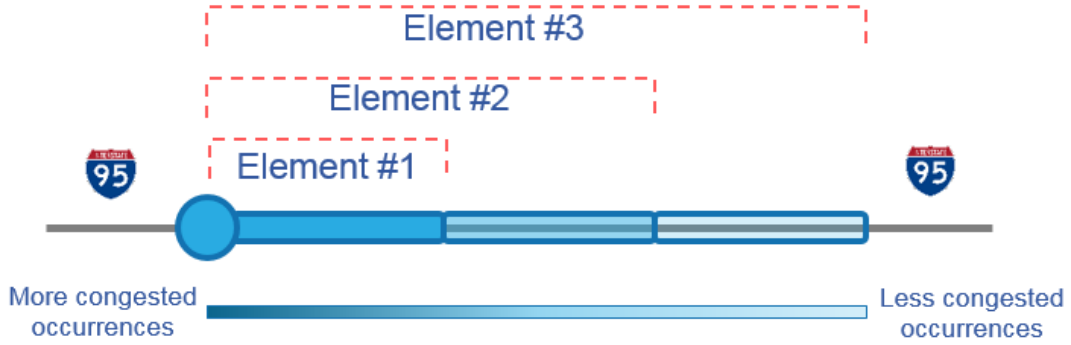
Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	I-695 OL @ EDMONDSON AVE/EXIT 14	5.01	2 h 43 m	834	88946
2	I-695 IL @ I-83/MD-25/EXIT 23	3.53	2 h 56 m	463	95048
3	I-695 IL @ I-70/EXIT 16	2.11	2 h 54 m	233	95068
4	I-695 OL @ US-40/EXIT 15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

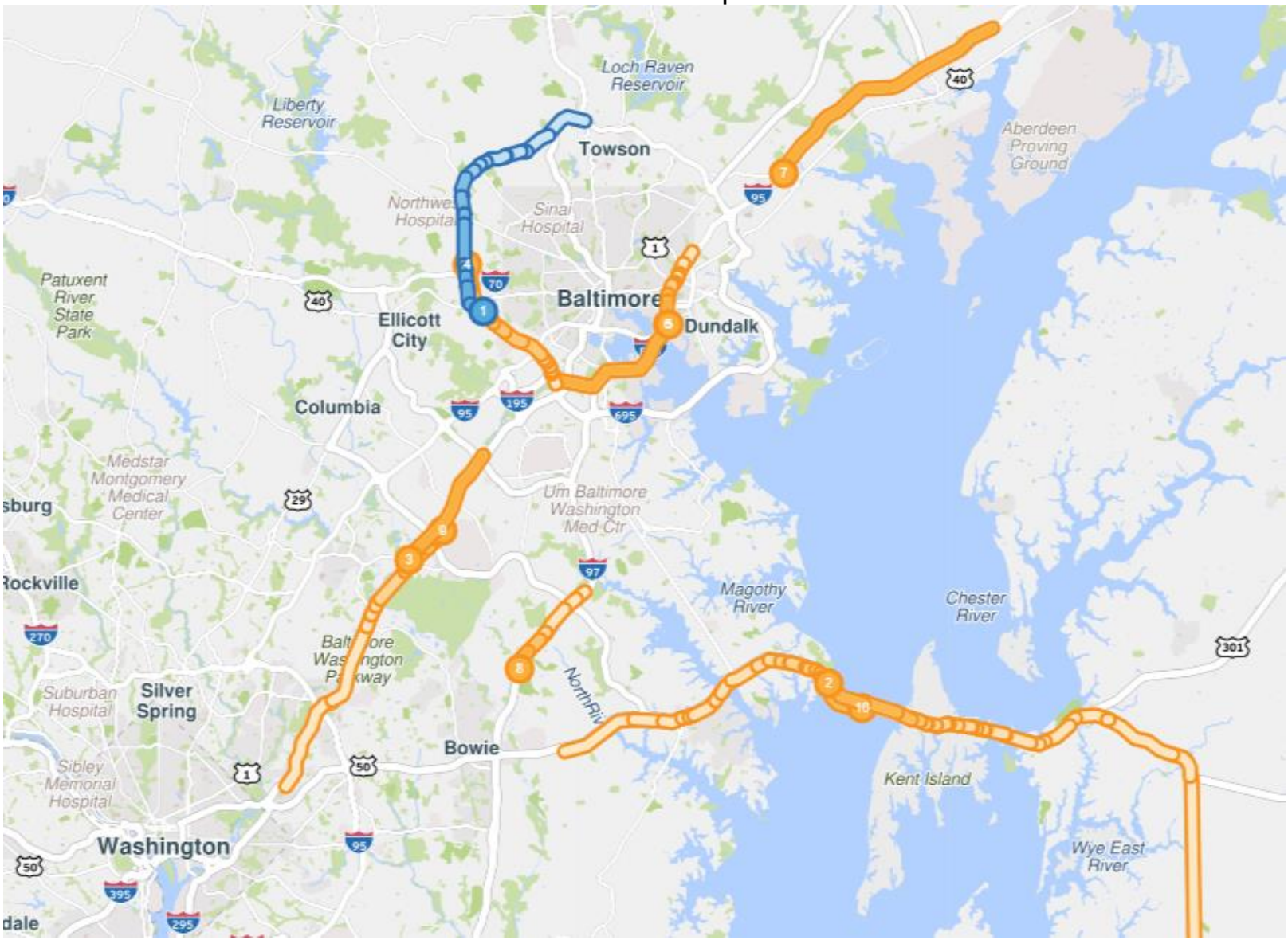


The Map view displays selected bottlenecks on a map. Each element occurring at the selected location is layered on the map, extending upstream from the head location to the maximum length of the specific *element*. As each element adds another layer on the map, road segments become more opaque. Segments 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
3rd Quarter 2019

Overview Map



Top 10 Bottlenecks in the Baltimore Region
3rd Quarter 2019

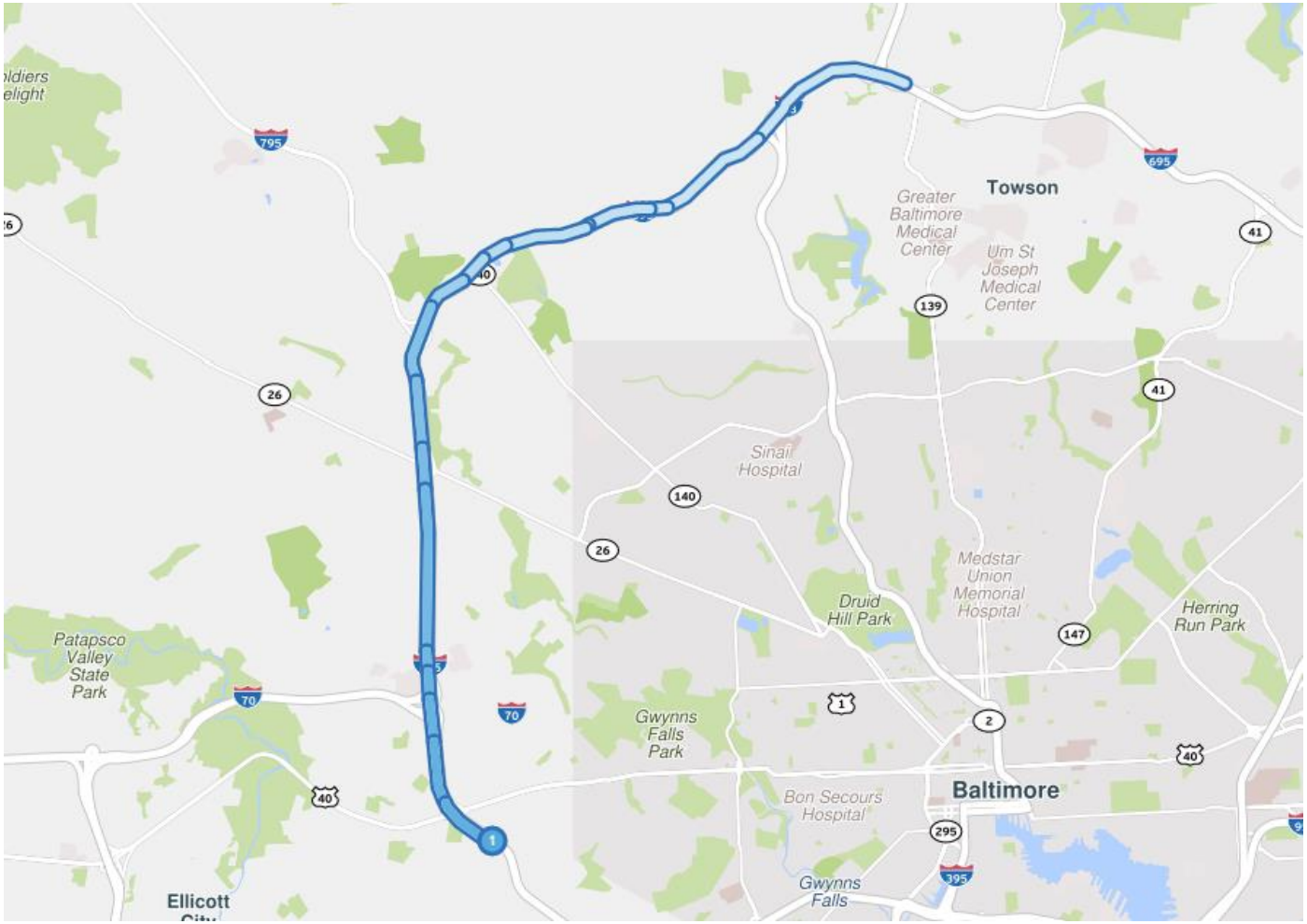
Ranked by Base Impact – the aggregation of queue length over time for congestion at each location in mile minutes. This table indicates the top 10 congested corridors in the region.

Rank	Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
1	I-695 OL @ EDMONDSON AVE/EXIT 14	3.42	2 h 39 m	537	102,468
2	US-50 W @ BAY BRIDGE	4.55	2 h	684	31,798
3	MD-295 S @ MD-198	2.80	3 h 47 m	119	48,852
4	I-695 IL @ SECURITY BLVD/EXIT 17	2.42	3 h 12 m	351	101,851
5	I-895 N @ HOLABIRD AVE/EXIT 10	1.80	4 h 12 m	229	34,346
6	I-895 S @ HOLABIRD AVE/EXIT 10	1.06	6 h 34 m	118	26,542
7	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.01	57 m	222	79,200
8	MD-3 S @ MD-424/CONWAY RD/DAVIDSONVILLE RD	1.09	5 h 30 m	8	33,542
9	MD-295 N @ CANINE RD	2.13	2 h 23 m	166	49,320
10	US-50 E @ BAY BRIDGE	5.05	1 h 05 m	953	37,473

IL = Inner Loop OL = Outer Loop

#1 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

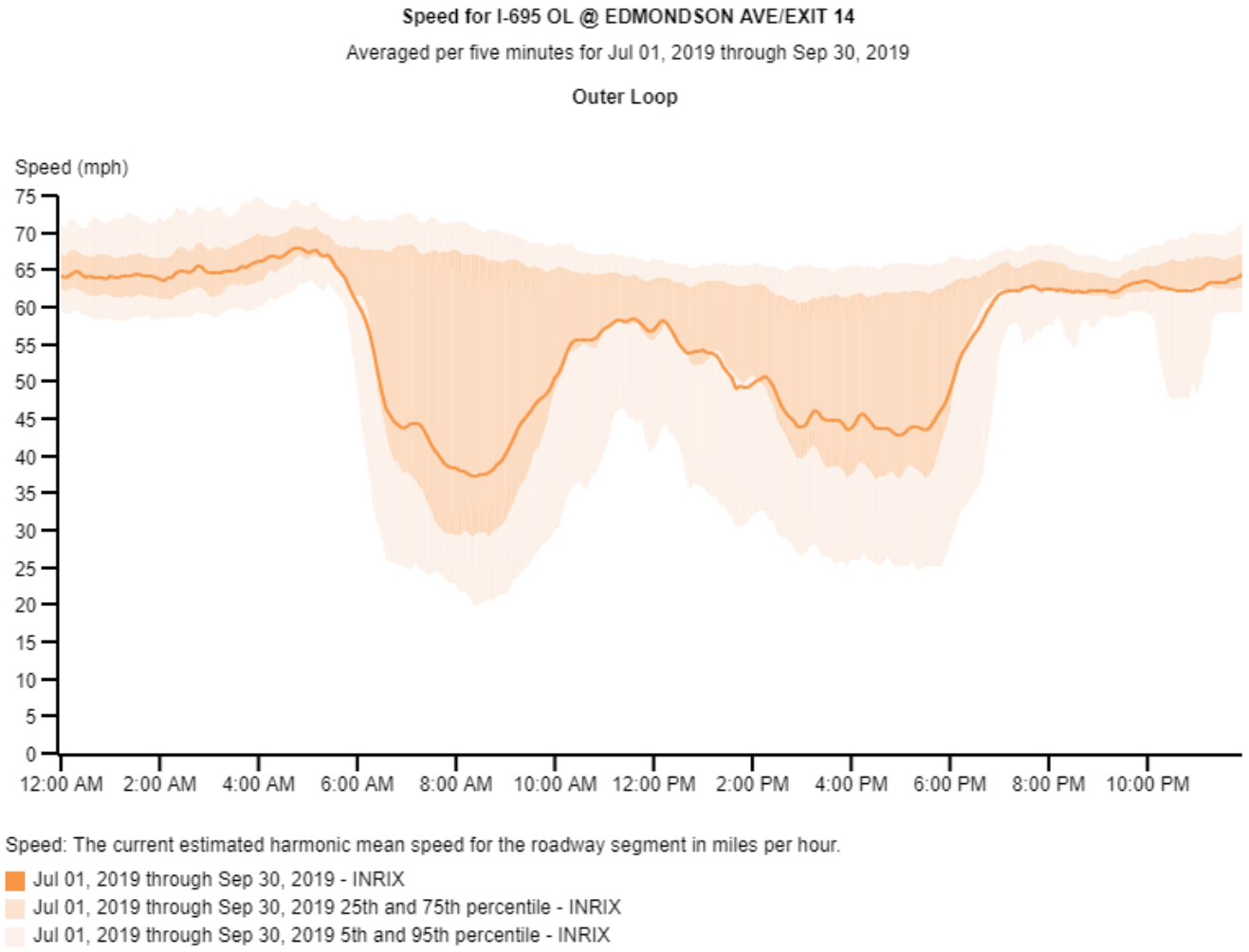
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	3.42	2 h 39 m	537	102,468



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.*

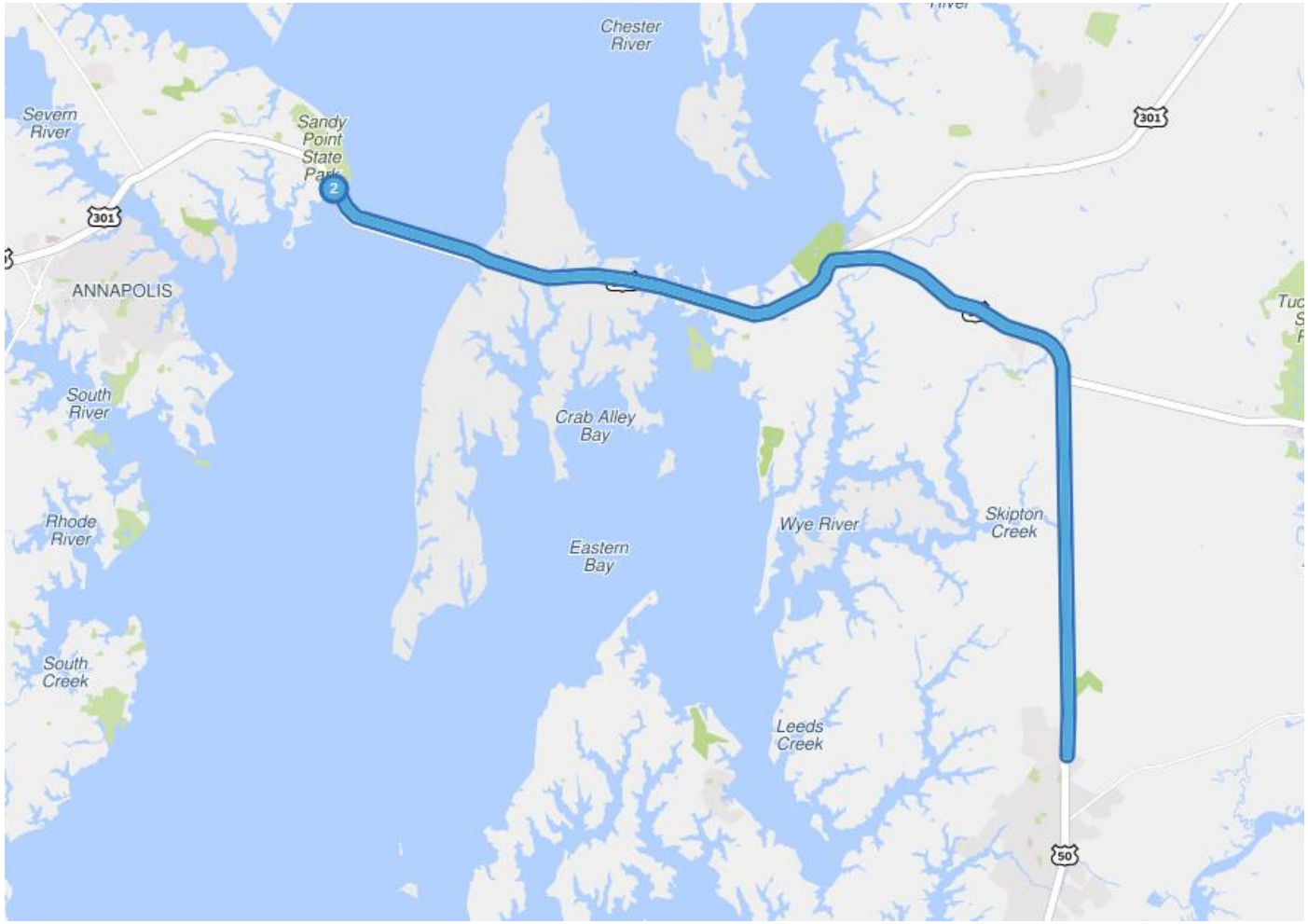
#1 Ranked Bottleneck in the Baltimore Region –3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 OL @ EDMONDSON AVE/EXIT 14	3.42	2 h 39 m	537	102,468



#2 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

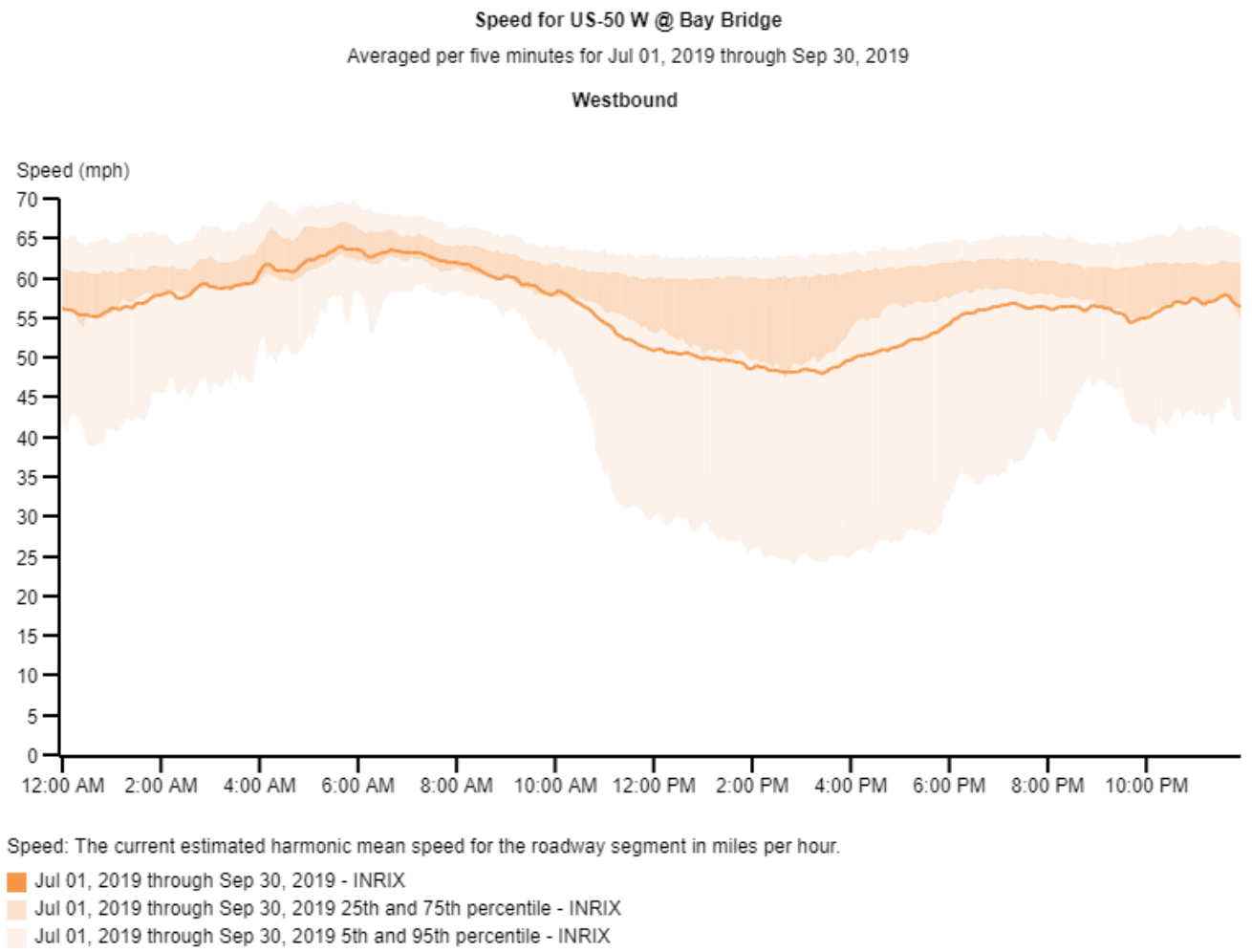
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 W @ BAY BRIDGE	4.55	2 h	684	31,798



***Notes**: Summer pattern showing return traffic from the Maryland and Delaware beaches. Weekend traffic readings show primary congestion between noon and 9pm.*

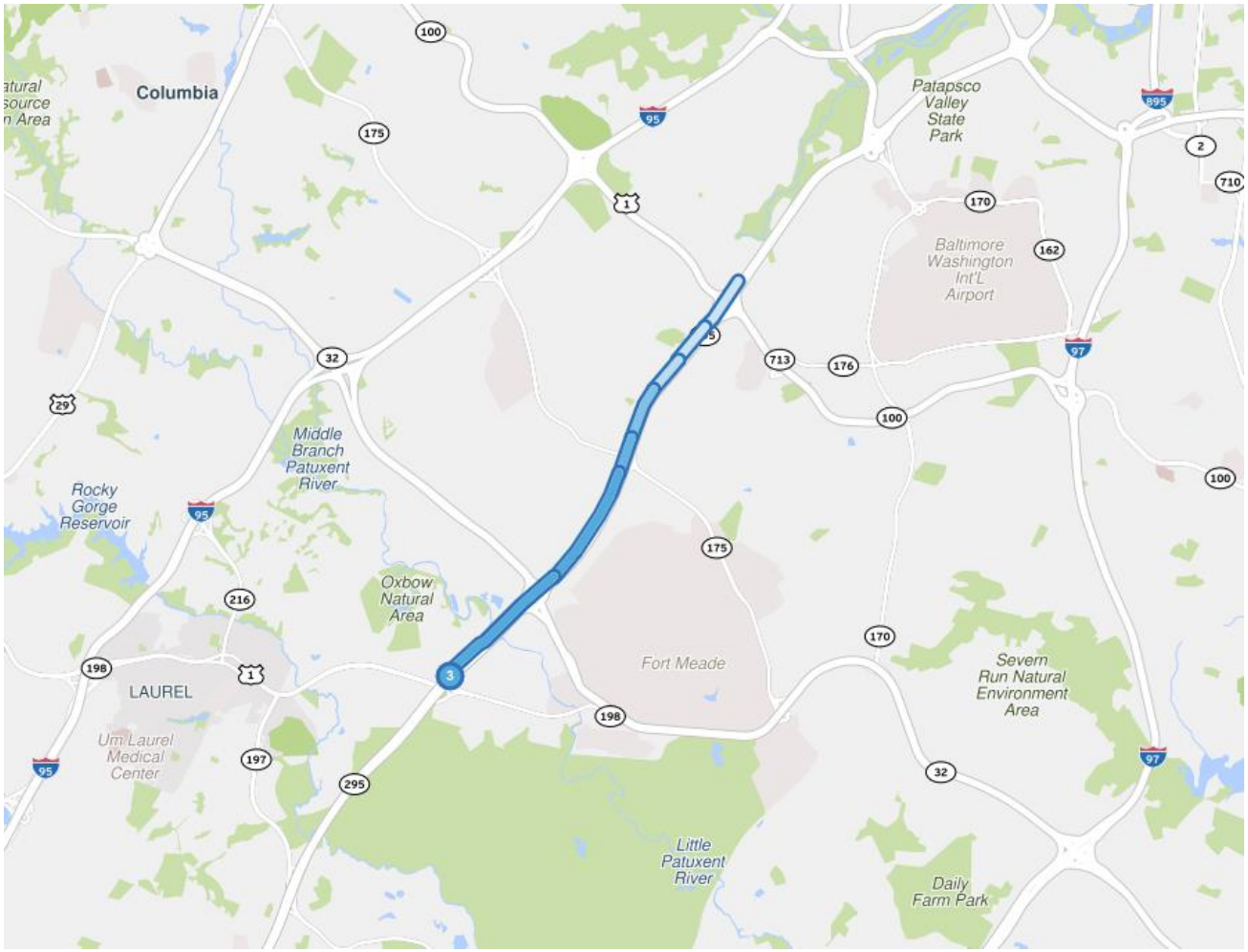
#2 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
US-50 W @ BAY BRIDGE	4.55	2 h	684	31,798



#3 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

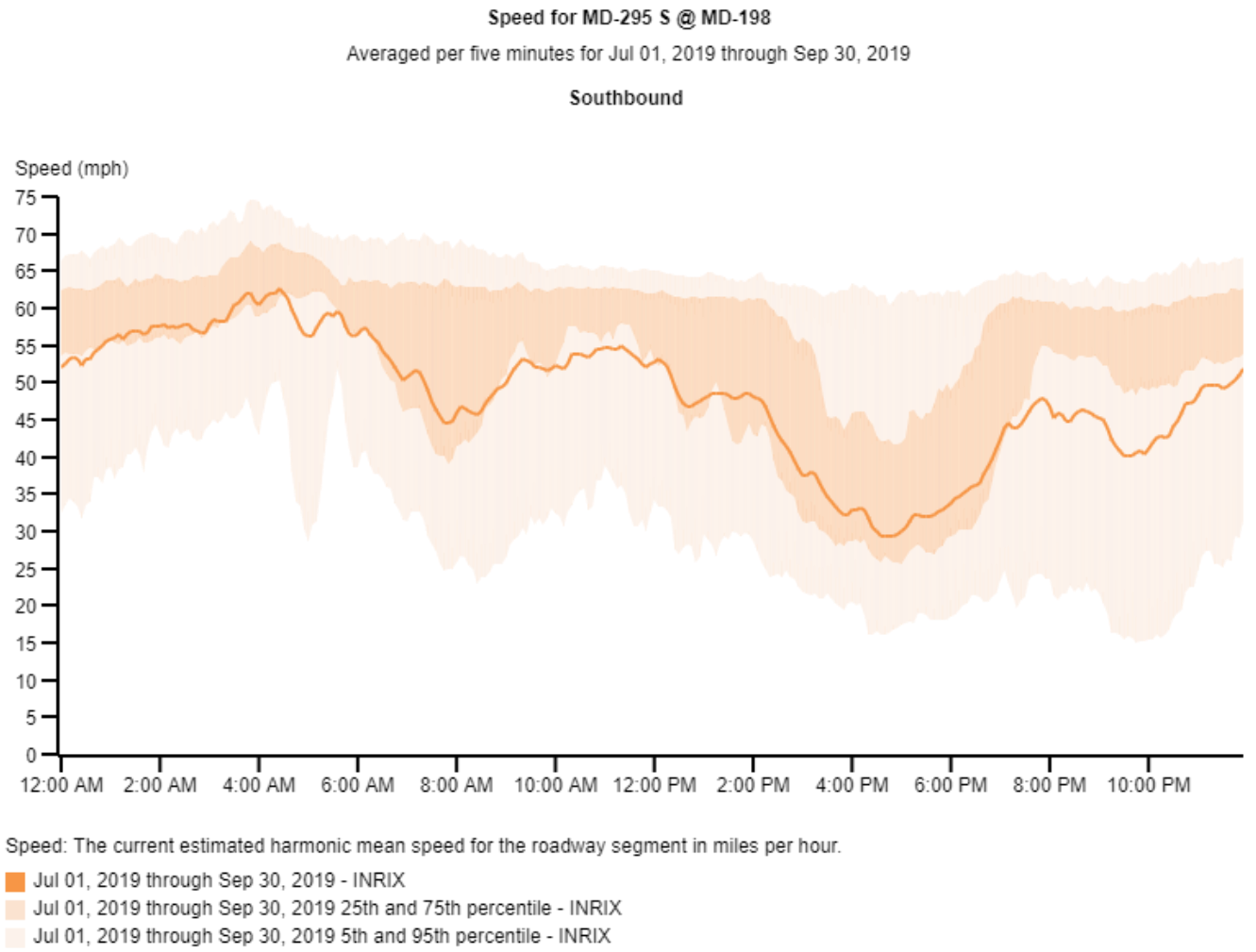
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.80	3 h 47 m	119	48,852



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*

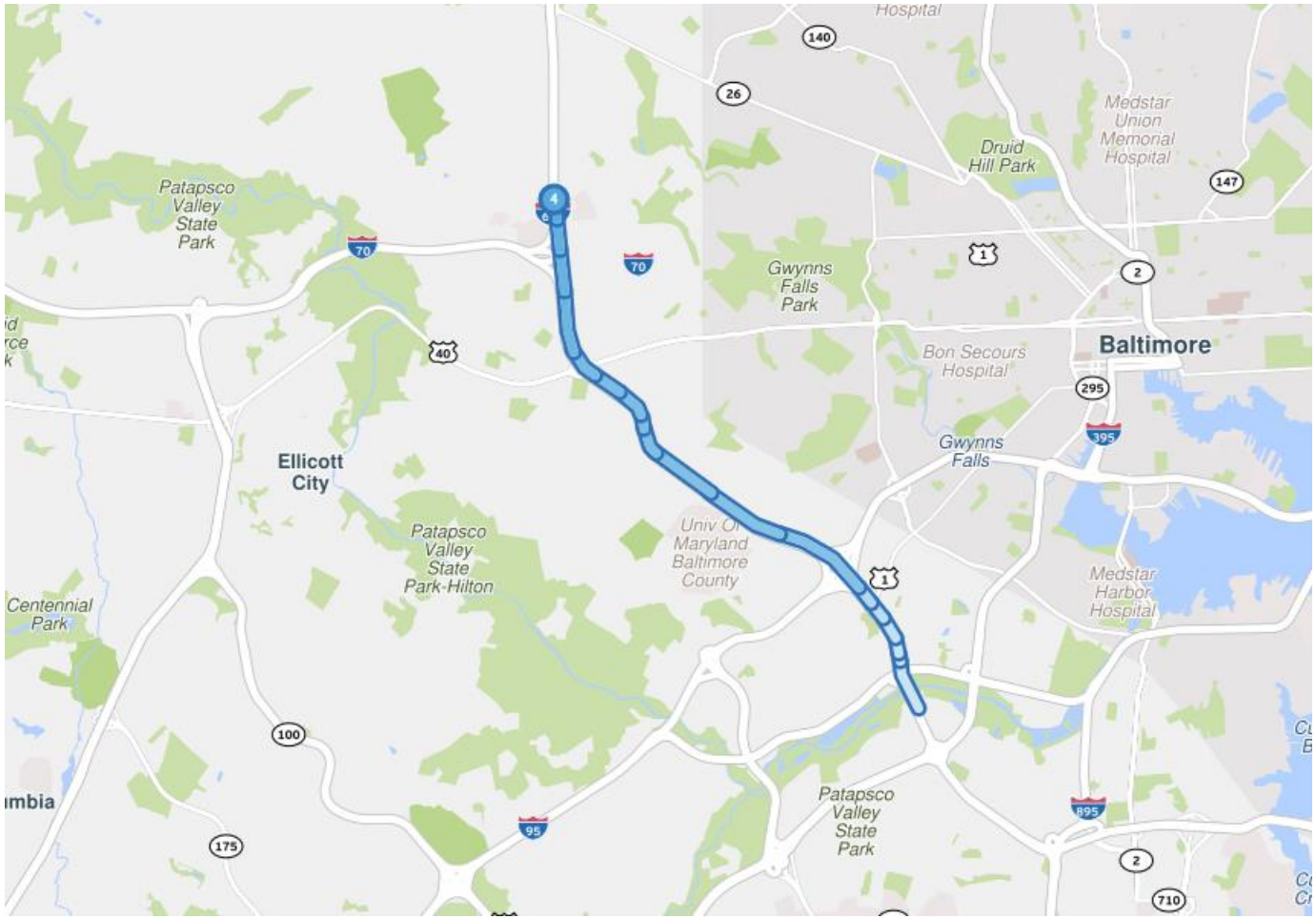
#3 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 S @ MD-198	2.80	3 h 47 m	119	48,852



#4 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

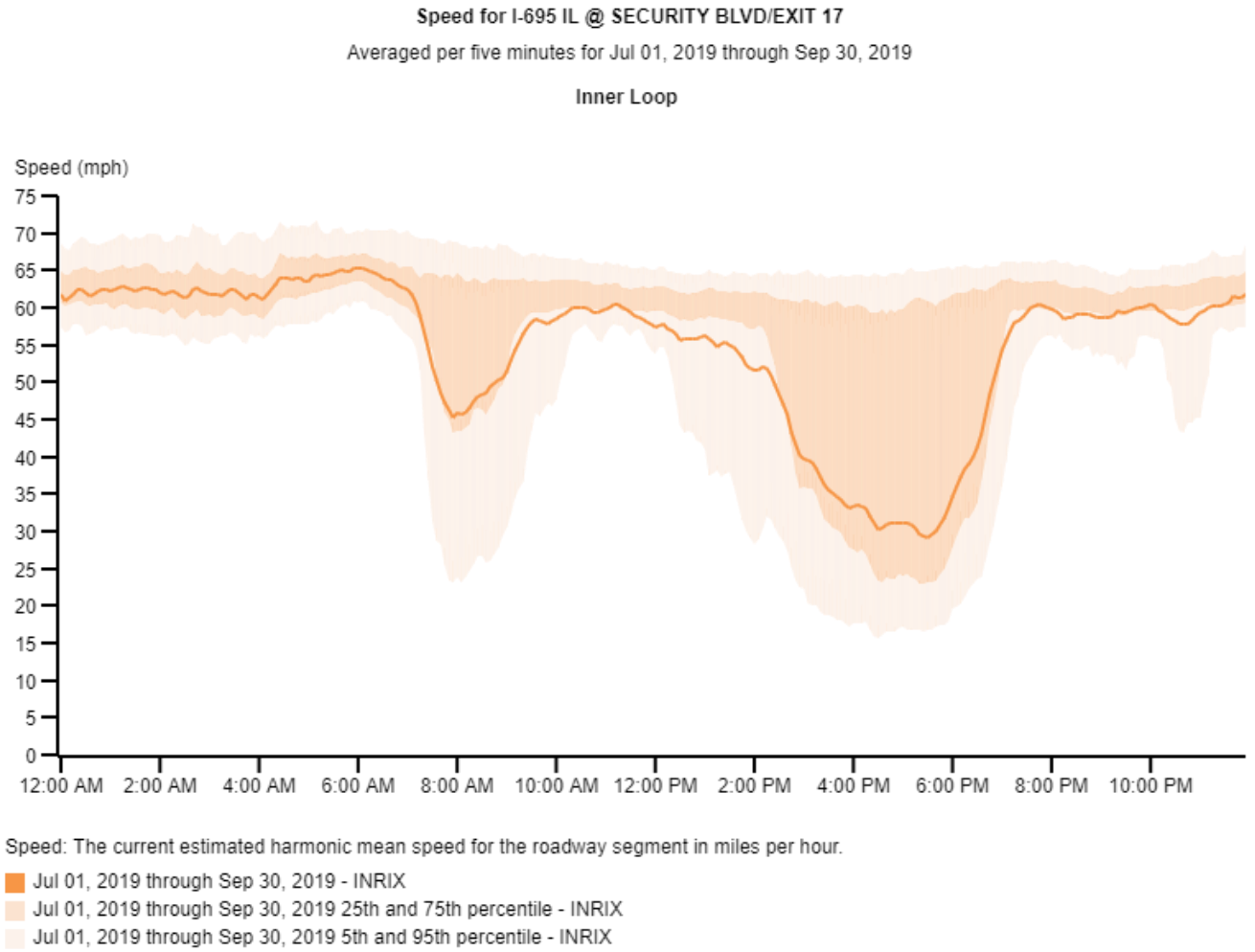
	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ SECURITY BLVD/EXIT 17	2.42	3 h 12 m	351	101,851



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*

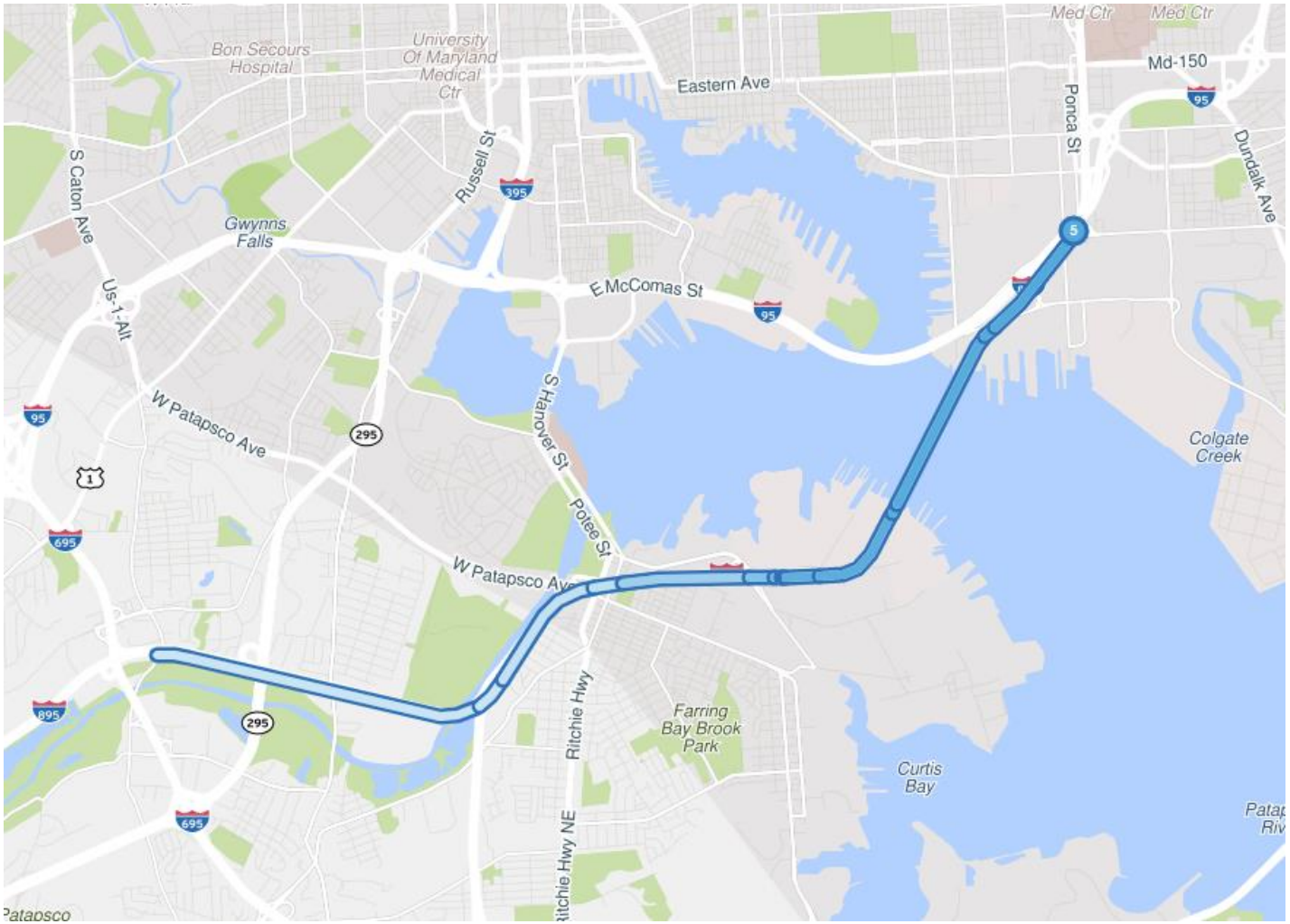
#4 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-695 IL @ SECURITY BLVD/EXIT 17	2.42	3 h 12 m	351	101,851



#5 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

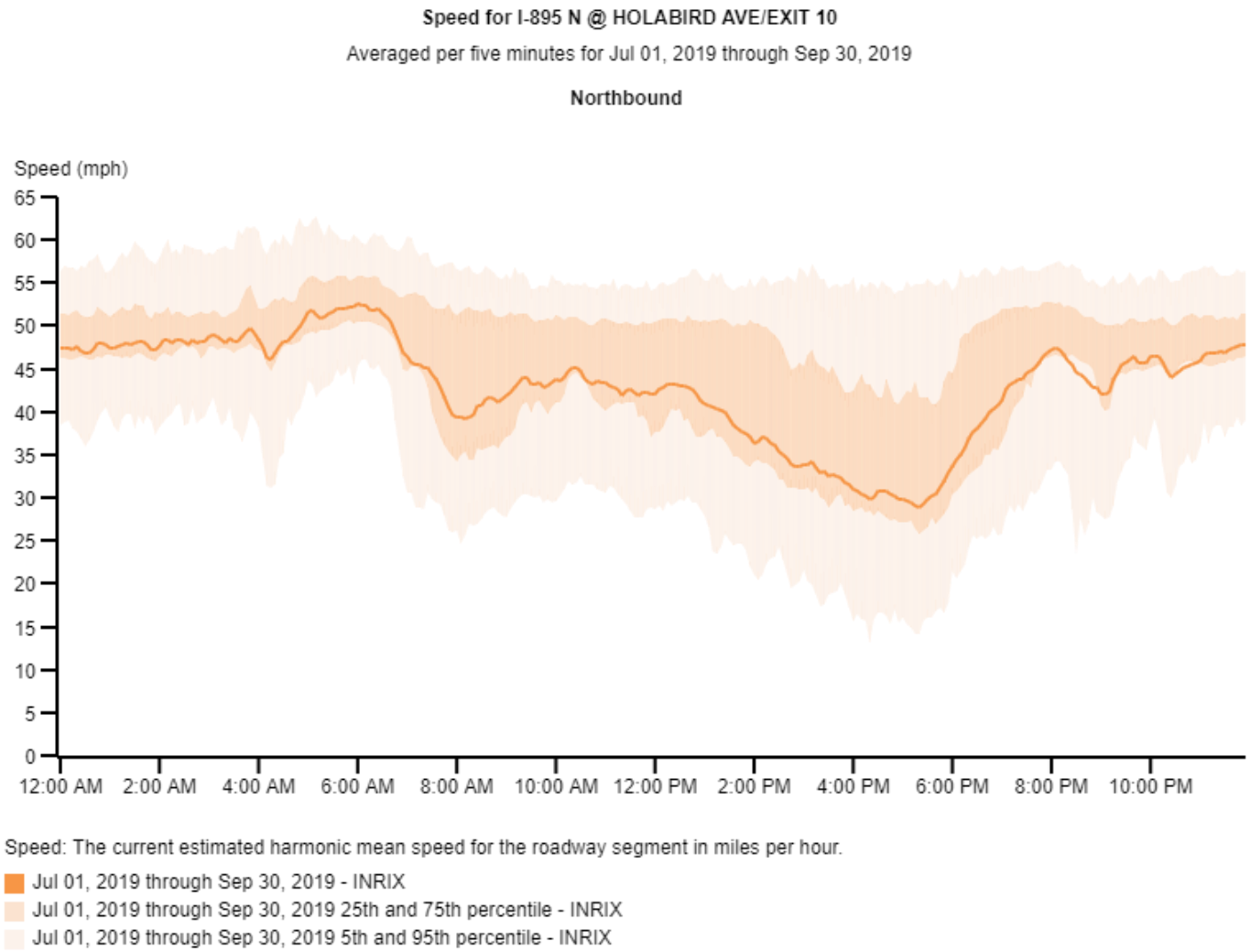
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-895 N @ HOLABIRD AVE/EXIT 10	1.80	4 h 12 m	229	34,346



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*

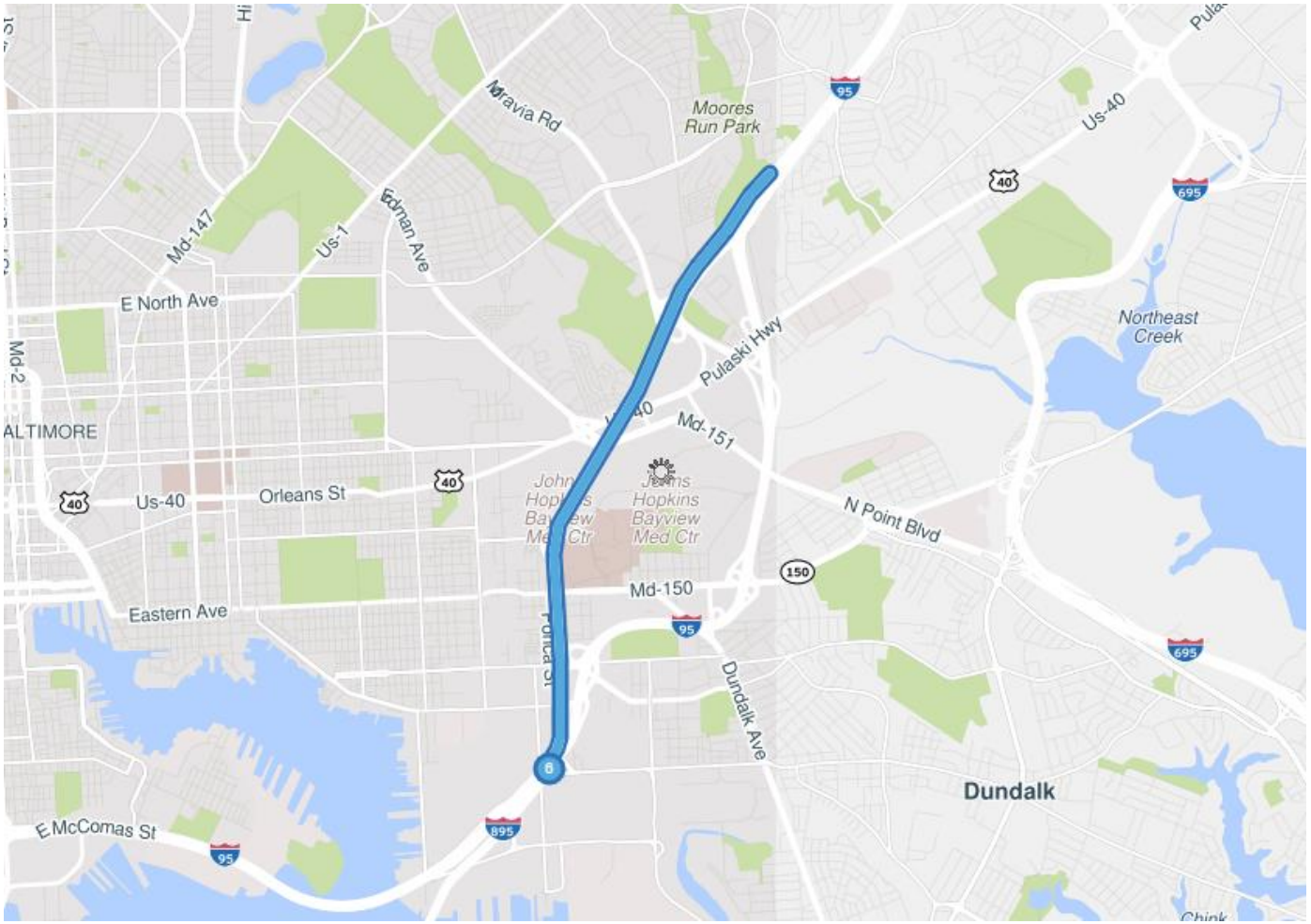
#5 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-895 N @ HOLABIRD AVE/EXIT 10	1.80	4 h 12 m	229	34,346



#6 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-895 S @ HOLABIRD AVE/EXIT 10	1.06	6 h 34 m	118	26,542



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*

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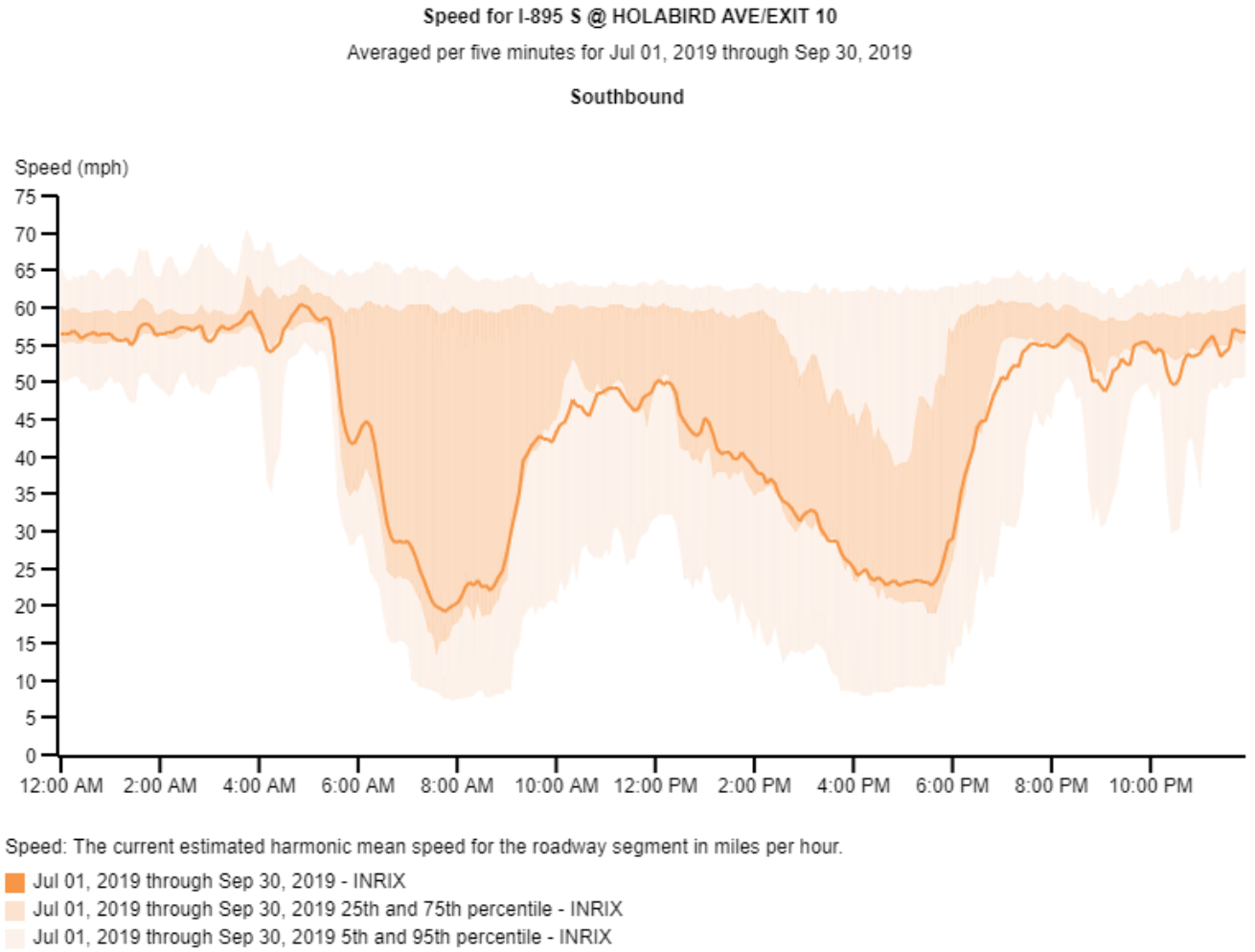
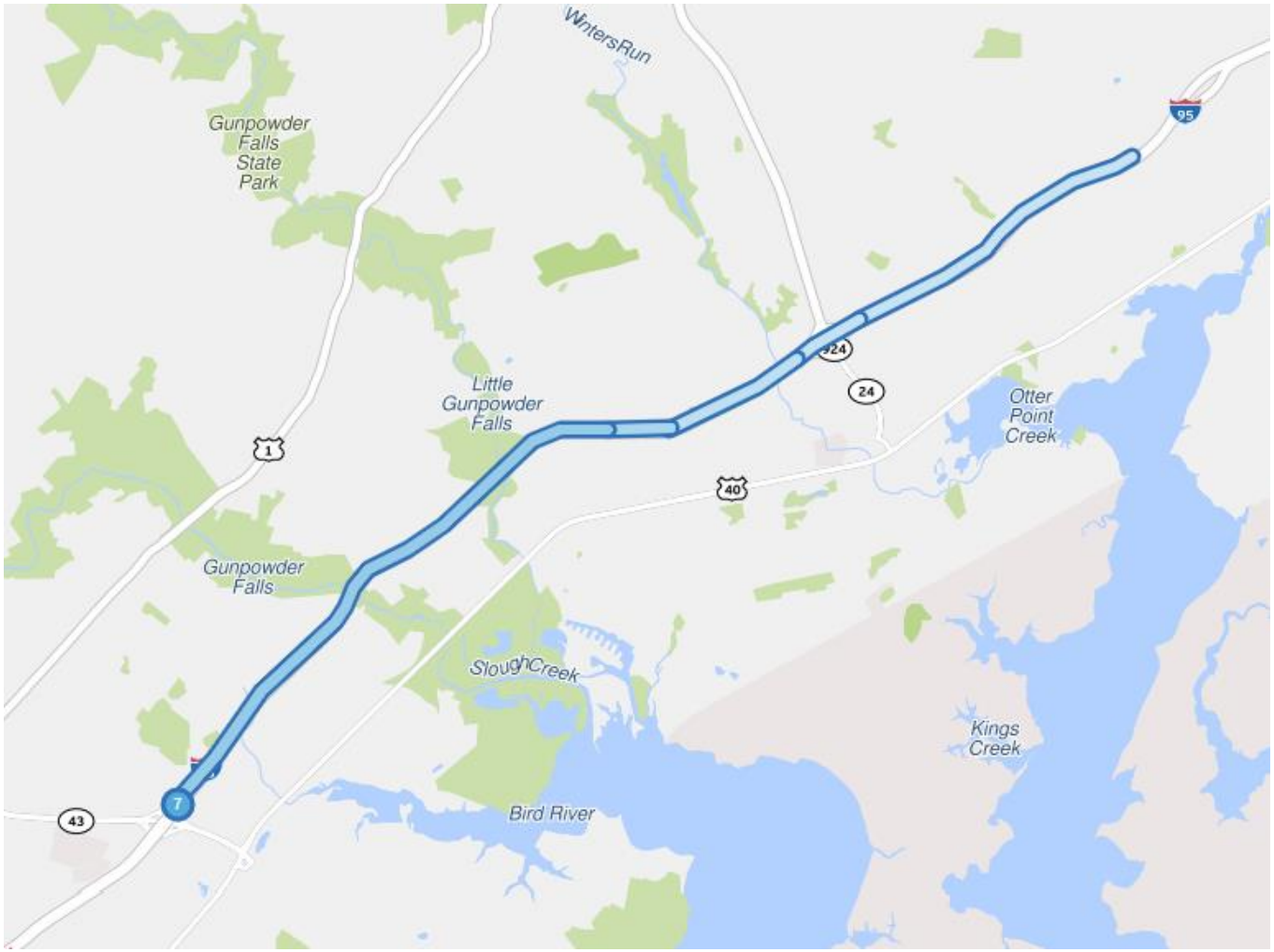


#7 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

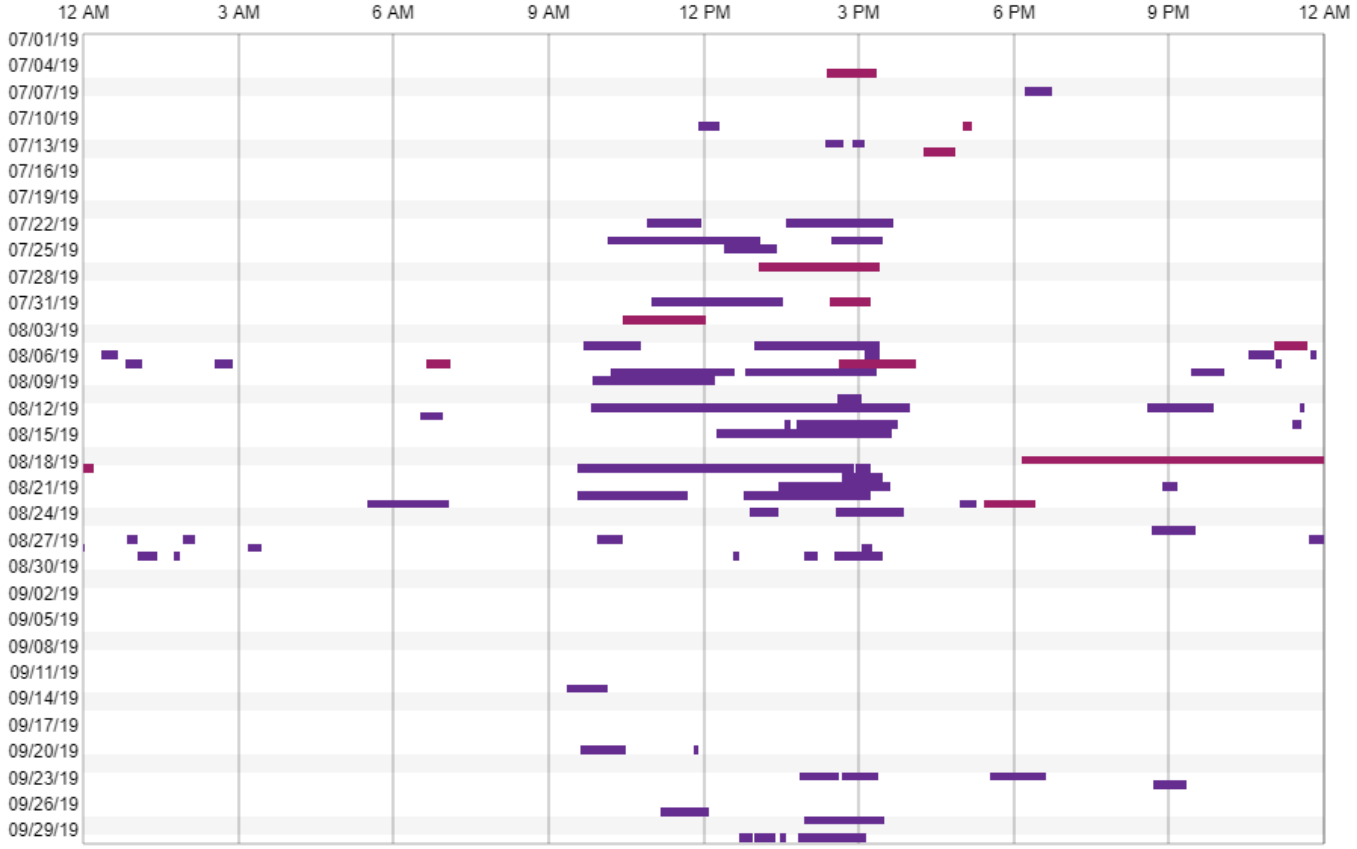
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.01	57 m	222	79,200



Note: *Non-recurring congestion due to construction of a noise wall @ Section 100 - SB - Joppa Rd to New Forge Rd. Off-peak shoulder and lane closures. Start date 4/22/2019. End date 6/20/2020. Construction occurring mid-day.*

#7 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

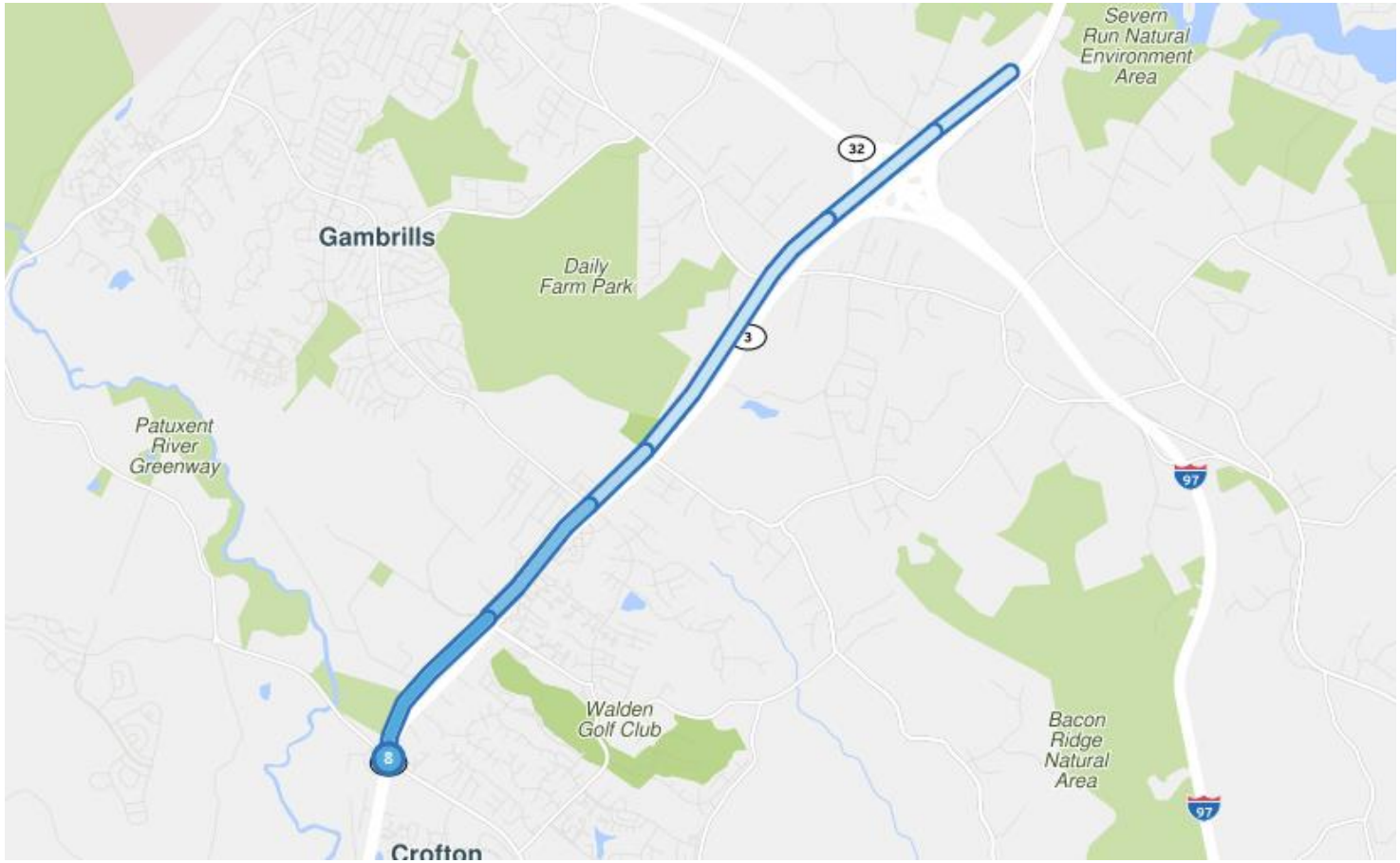
Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67	7.01	57 m	222	79,200



**** A timeline graph is shown here in lieu of a performance chart to better represent non-recurring conditions of the weekend conditions. From the chart the observable bottlenecks occur from around 10pm to 3pm on construction days.*

#8 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-3 S @ MD-424/CONWAY RD/DAVIDSONVILLE RD	1.09	5 h 30 m	8	33,542



***Notes**: Design & safety issues and signalized intersections along with growing travel demands contribute to congestion in this heavily traveled corridor. A combination of required improvements to MD-3 is #1 ranked in the current Anne Arundel County Priorities Letter to the Maryland Department of Transportation.*

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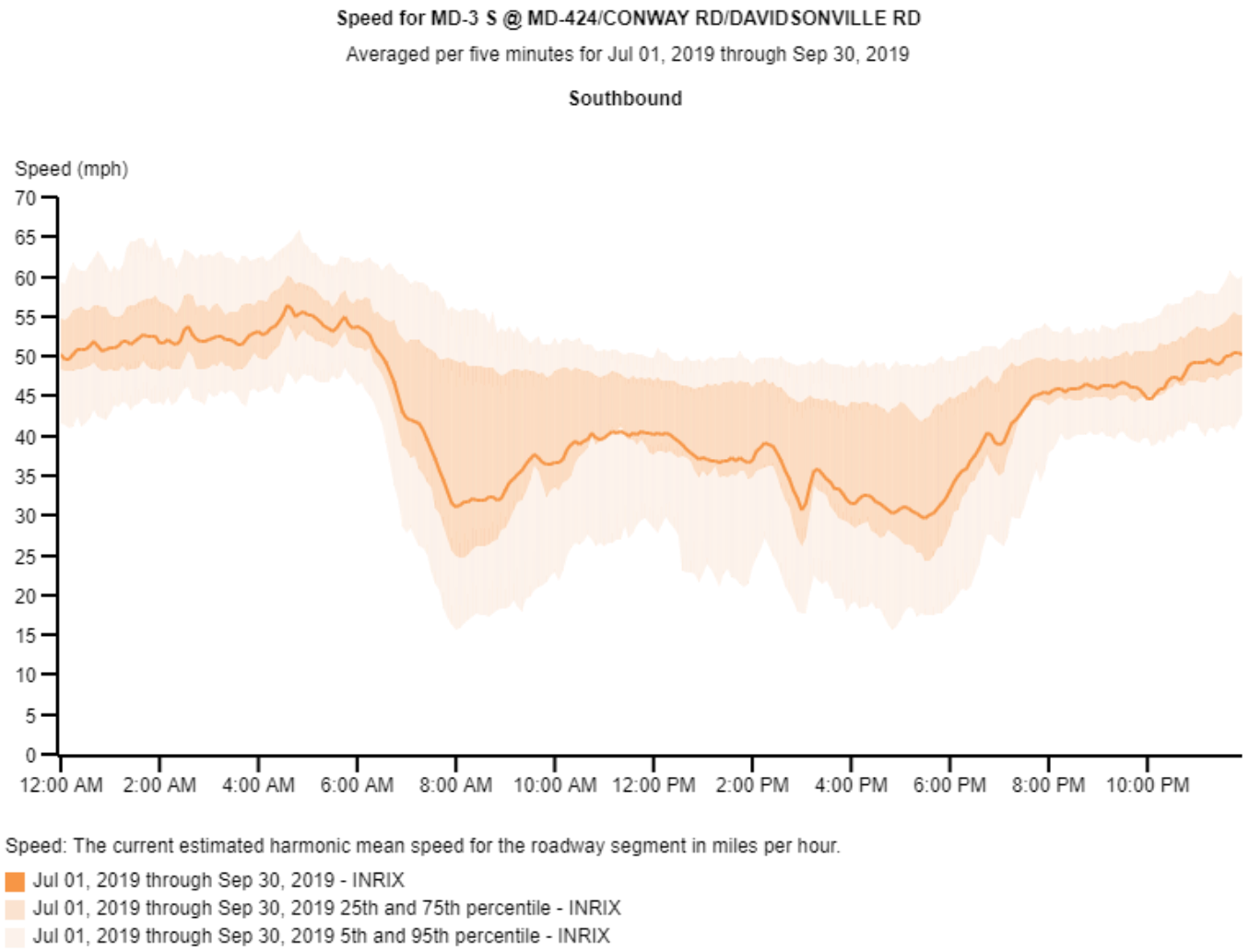
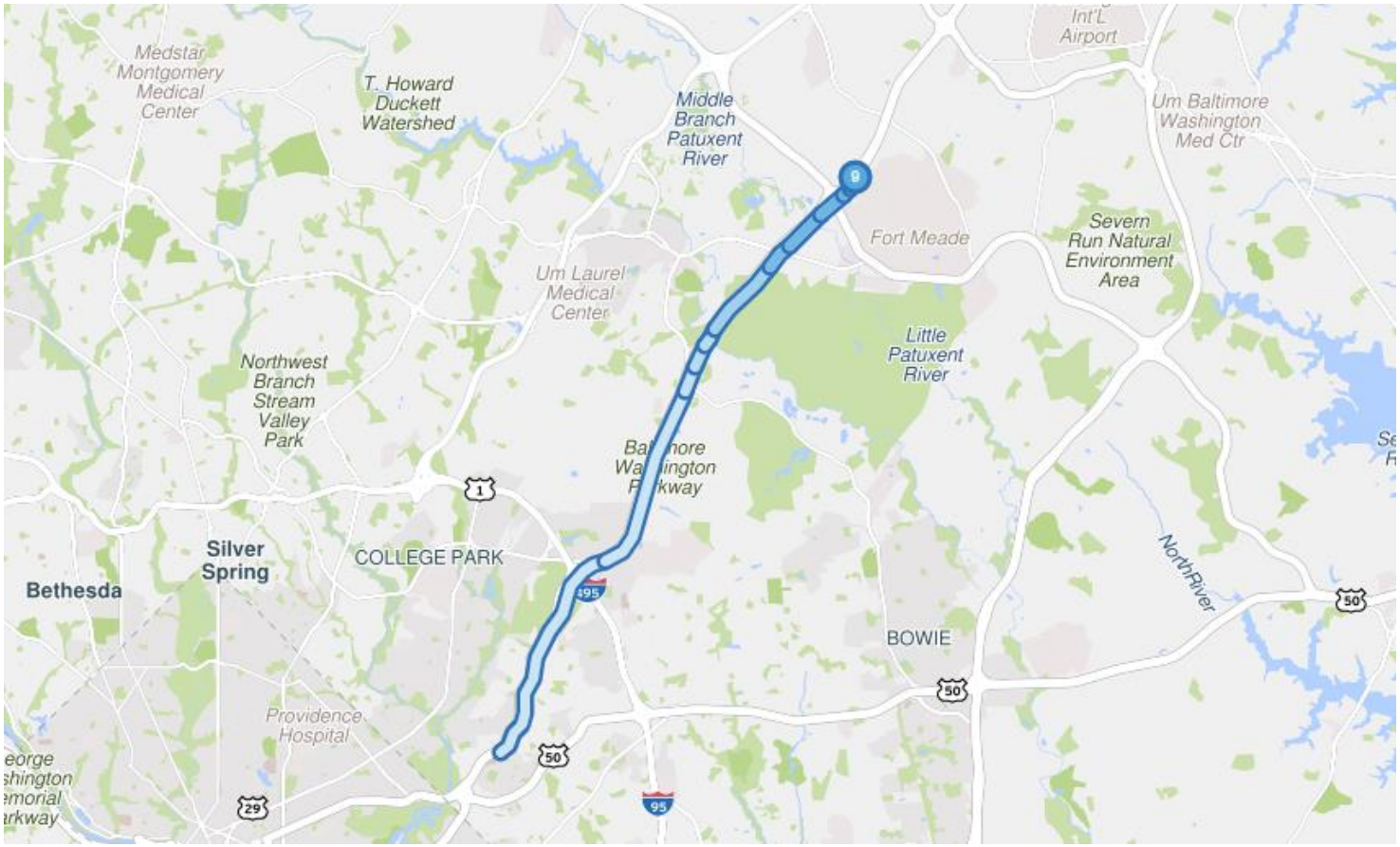


#9 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

Location	Average max length (miles)	Average Daily Duration	All Events/ Incidents	Volume Estimate (AADT)
MD-295 N @ CANINE RD	2.13	2 h 23 m	166	49,320



Notes: *Recurring afternoon congestion. Level of Service "F" from 3:00 to 6:00pm. A primary cause appeared to be the discharge of traffic from NSA / Ft. Meade onto northbound MD 295 via the Connector Rd. Weaving and merging at the MD 32 interchange also contributed to the congestion.*

#9 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

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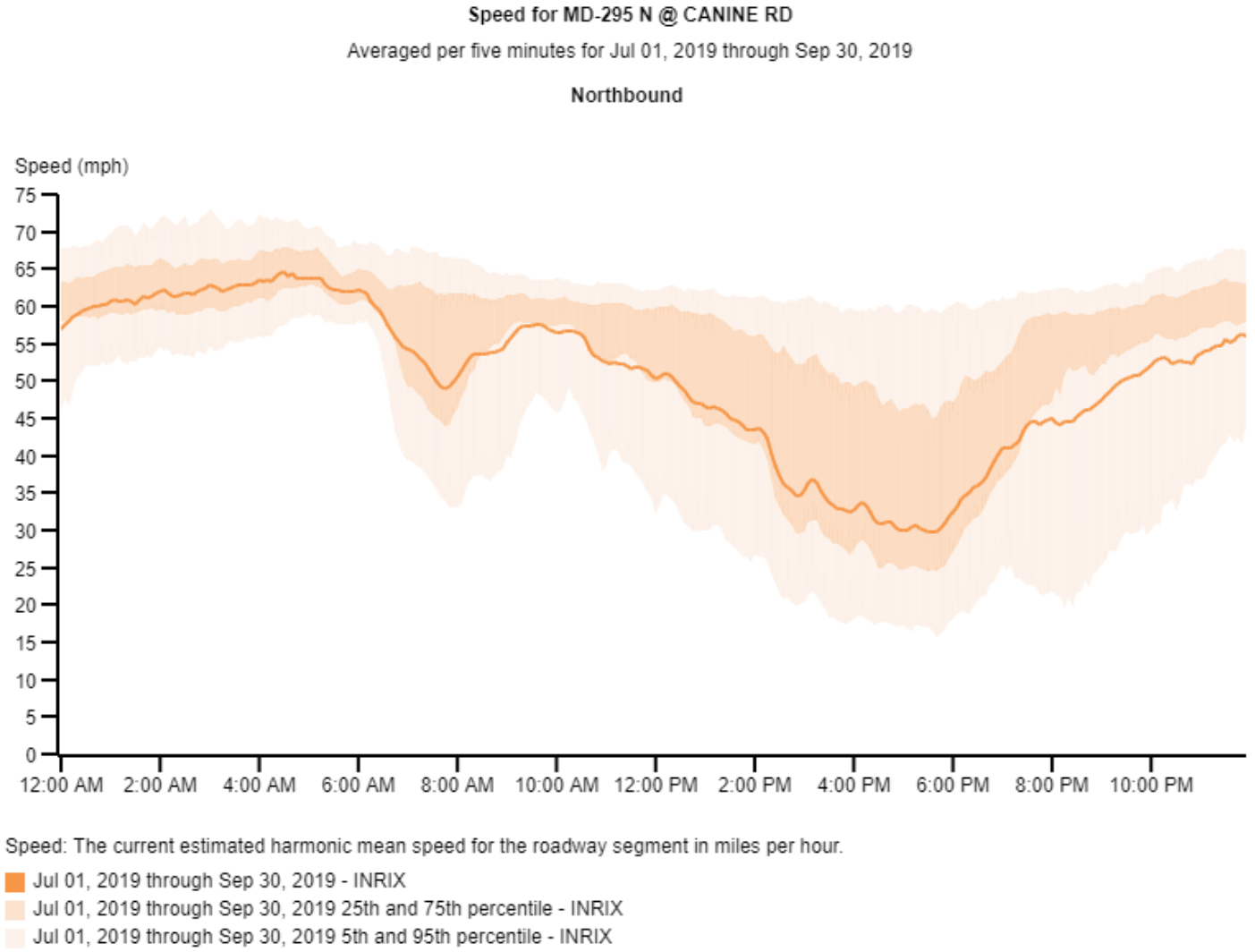
MD-295 N @ CANINE RD	2.13	2 h 23 m	166	49,320



#10 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

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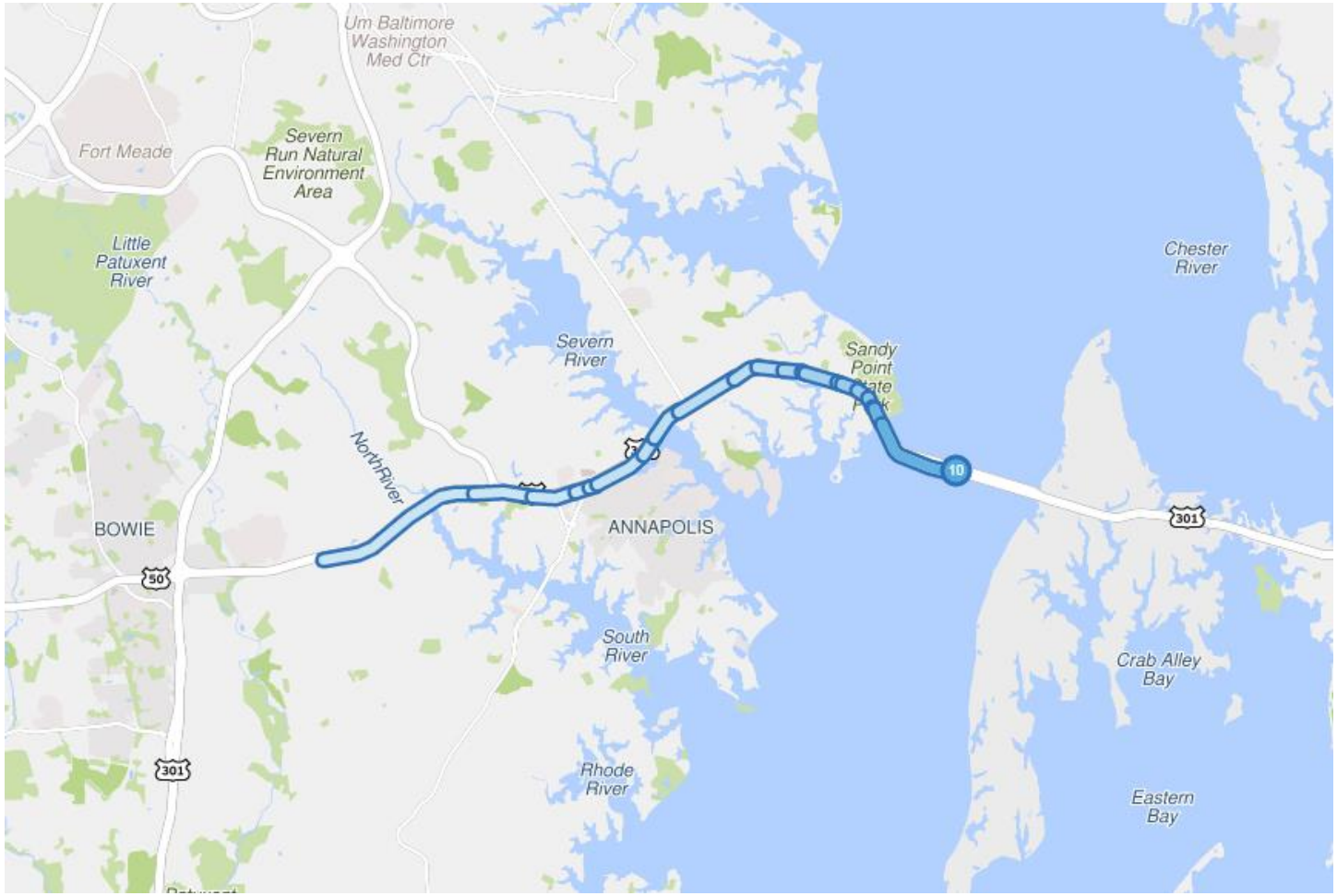

Notes: *Summer pattern showing traffic heading to the Maryland and Delaware beaches. Weekend traffic readings show primary congestion between 10am and 8pm*

#10 Ranked Bottleneck in the Baltimore Region – 3rd Quarter 2019

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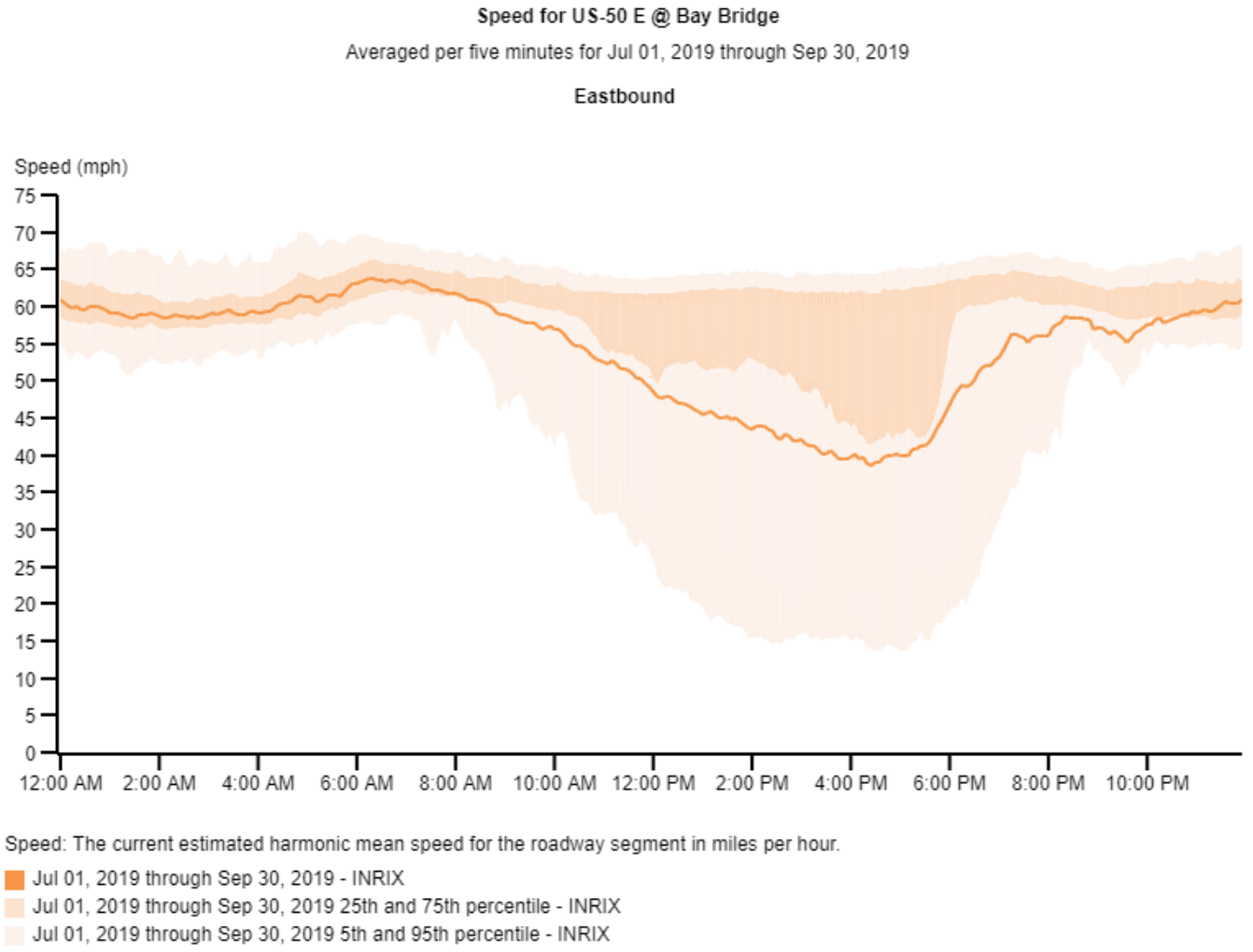
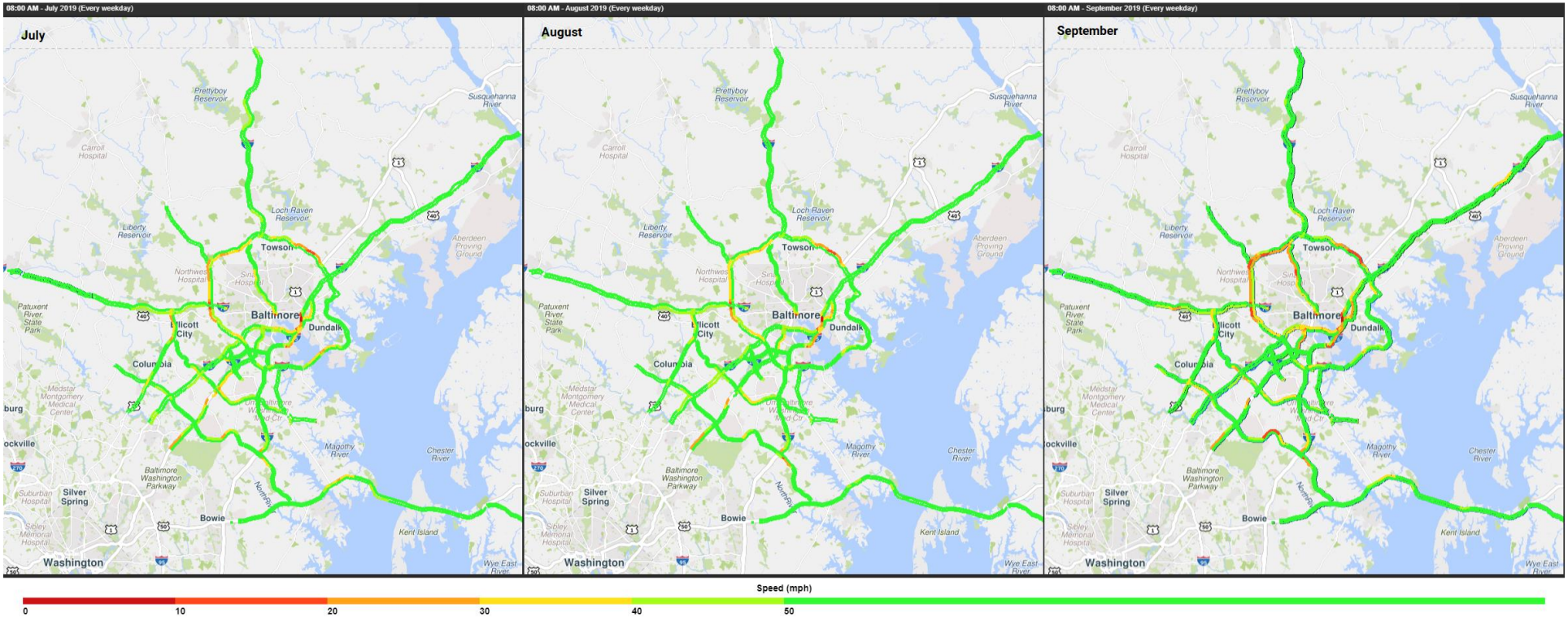


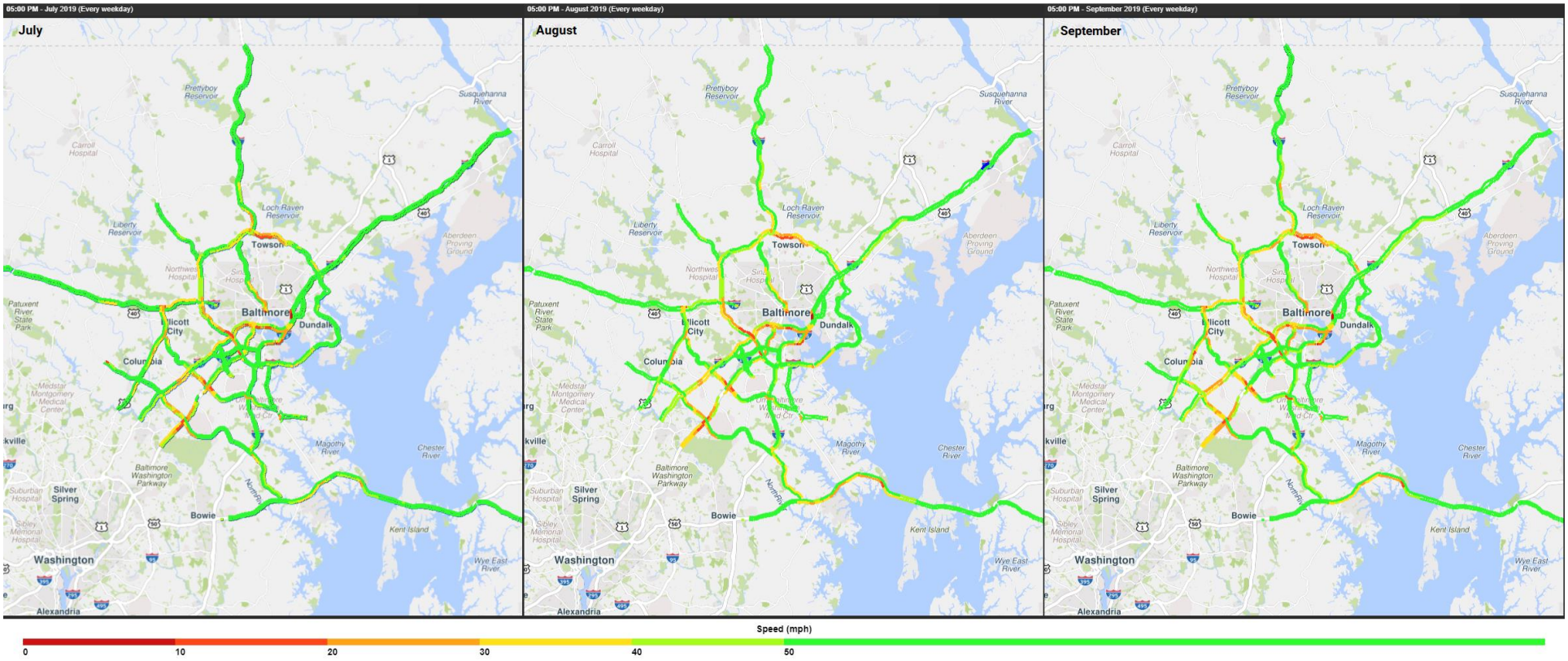
Average Speed Maps – AM Peak Period 8:00-9:00 Weekdays: 3rd Quarter 2019

BMC Region Limited Access Speed Trend Map for July 2019 (Every weekday) and August 2019 (Every weekday) and September 2019 (Every weekday)



Average Speed Maps – PM Peak Period 5:00-6:00 Weekdays: 3rd Quarter 2019

BMC Region Limited Access Speed Trend Map for July 2019 (Every weekday) and August 2019 (Every weekday) and September 2019 (Every weekday)



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*

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