



New Annual Congestion Analysis Report

Quarterly Bottleneck Reports

Technical Committee August 7th 2018



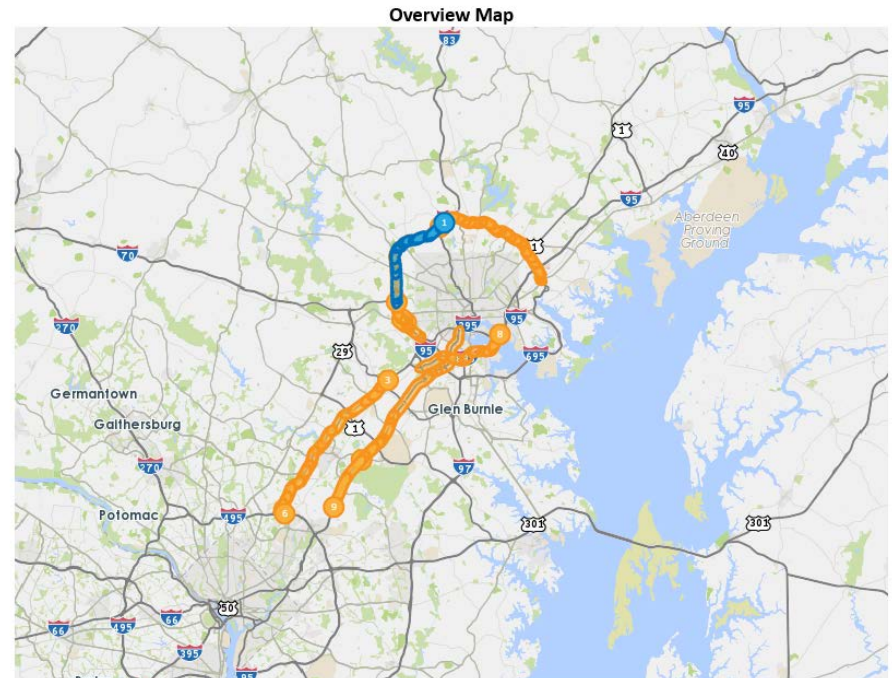
Quarterly Congestion Analysis Reports

- Have been reporting on the Top Ten Congested Corridors in the Region Since 2011
- Vehicle Probe Data provided by University of MD CATT Lab
 - Top 10 Bottlenecks in the Baltimore region:
 - Report with maps and graphics
 - Explanations of what is occurring at each location
 - Part of the Congestion Management Process

Quarterly Report Examples

- Location Map
- Limited access highways and major arterials only currently

Top 10 Bottlenecks in the Baltimore Region 4th Quarter 2017



Quarterly Report Examples

- Top 10 List

| | Location | Impact | Average max length (miles) | Average Daily Duration | Total Duration | All Events Incidents |
|----|--------------------------------------|--------|----------------------------|------------------------|----------------|----------------------|
| 1 | I-695 IL @ I-83/MD-25/EXIT 23 | 69,102 | 3.52 | 3 h 54 m | 15 d 00 h 07 m | 452 |
| 2 | I-695 OL @ EDMONDSON AVE/EXIT 14 | 58,243 | 4.86 | 2 h 04 m | 7 d 22 h 38 m | 1,039 |
| 3 | I-95 N @ MD-100/EXIT 43 | 53,148 | 4.23 | 2 h 15 m | 8 d 16 h 30 m | 361 |
| 4 | I-695 OL @ US-40/EXIT 15 | 51,977 | 3.82 | 2 h 29 m | 9 d 12 h 43 m | 935 |
| 5 | MD-295 S @ MD-198 | 49,167 | 2.58 | 3 h 21 m | 12 d 21 h 51 m | 365 |
| 6 | I-95 S @ I-495/EXIT 27-25 | 47,942 | 2.28 | 3 h 37 m | 13 d 21 h 06 m | 258 |
| 7 | I-695 IL @ I-70/EXIT 16 | 42,926 | 2.00 | 3 h 18 m | 12 d 15 h 51 m | 265 |
| 8 | I-895 N @ HARBOR TUNNEL THWY (NORTH) | 40,739 | 0.70 | 4 h 12 m | 16 d 03 h 23 m | 270 |
| 9 | MD-295 S @ POWDER MILL RD | 39,505 | 4.96 | 1 h 35 m | 6 d 01 h 57 m | 271 |
| 10 | I-695 OL @ I-83/MD-25/EXIT 23 | 34,816 | 4.59 | 1 h 23 m | 5 d 08 h 17 m | 540 |

By Impact Factor

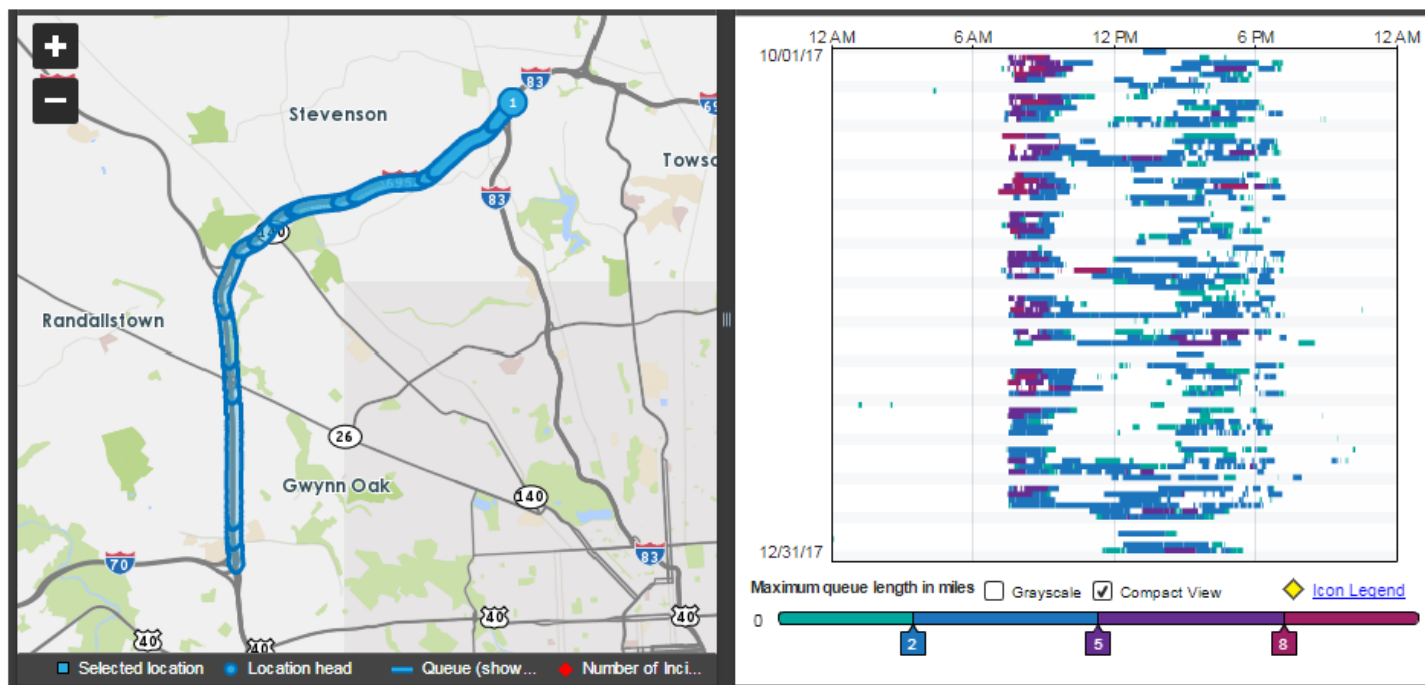
(Number of Occurrences x Average Duration in Minutes x Average Length)

Quarterly Report Examples

- Listing

#1 Ranked Bottleneck in the Baltimore Region – 4th Quarter 2017

| Location | Impact | Average max length (miles) | Average Daily Duration | Total Duration | All Events/Incidents |
|-------------------------------|--------|----------------------------|------------------------|----------------|----------------------|
| I-695 IL @ I-83/MD-25/EXIT 23 | 69.102 | 3.52 | 3 h 54 m | 15 d 00 h 07 m | 452 |



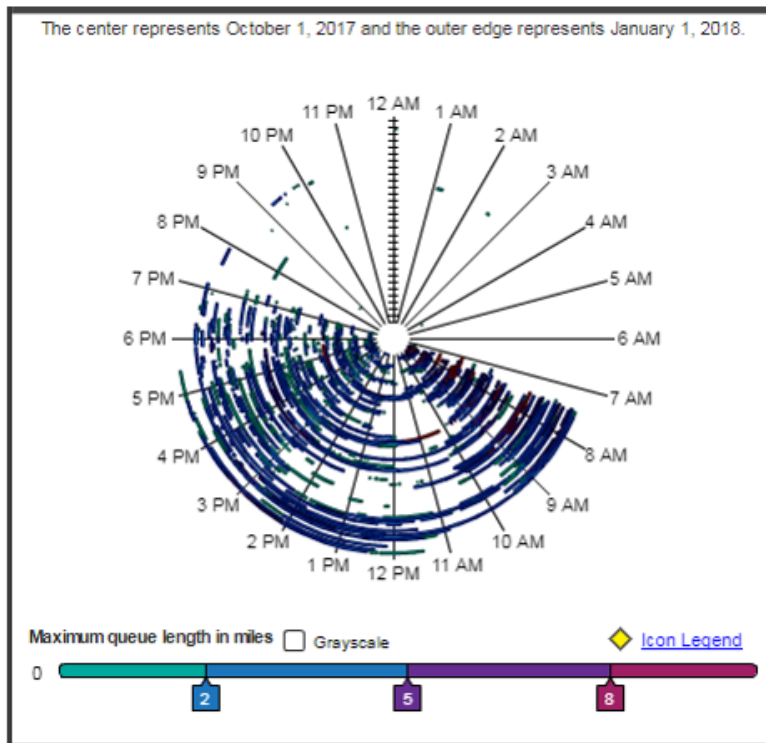
Notes: Rush hour congestion more severe during the AM peak period. The lane drop approaching the ramp to southbound I-83 is a contributing factor, as are merging and weaving at the interchanges in this segment

Quarterly Report Examples

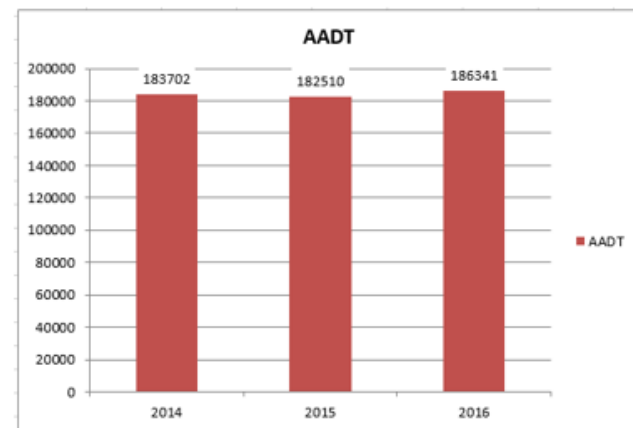
- Listing

#1 Ranked Bottleneck in the Baltimore Region –4th Quarter 2017

| Location | Impact | Average max length (miles) | Average Daily Duration | Total Duration | All Events/Incidents |
|-------------------------------|--------|----------------------------|------------------------|----------------|----------------------|
| I-695 IL @ I-83/MD-25/EXIT 23 | 69,102 | 3.52 | 3 h 54 m | 15 d 00 h 07 m | 452 |



Traffic Volumes – Average Annual Daily Traffic (AADT)
STATION_DESCRIPTION IS695-.50 MI N OF
GREENSPRING AVE



Quarterly Report 2018

- New Analytics

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

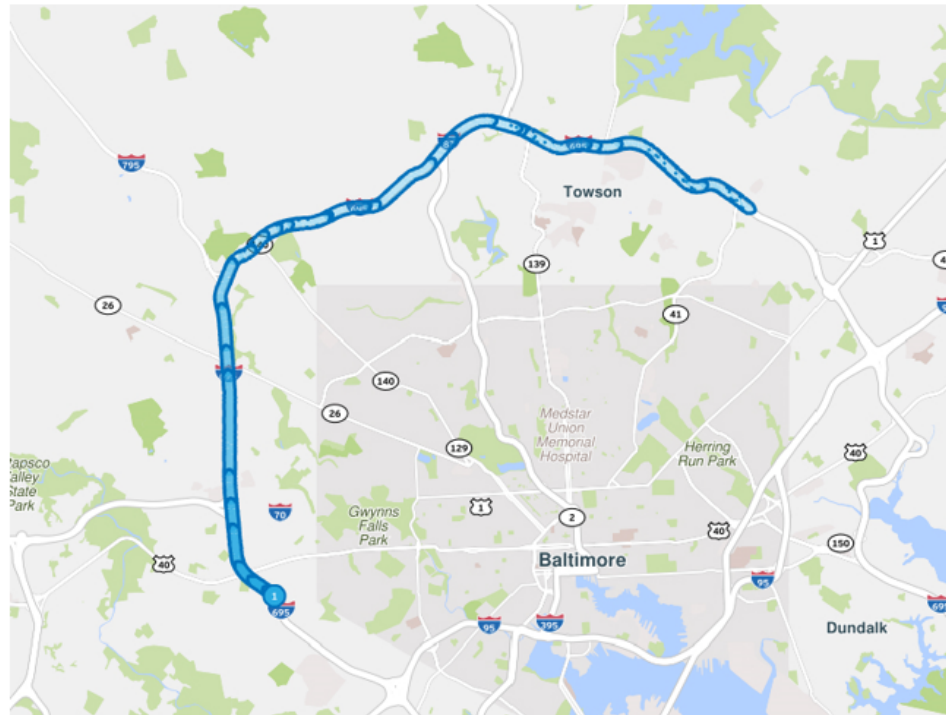
OL = Outer Loop

Quarterly Report 2018

- Simplified Graphics

#1 Ranked Bottleneck in the Baltimore Region – 1st Quarter 2018

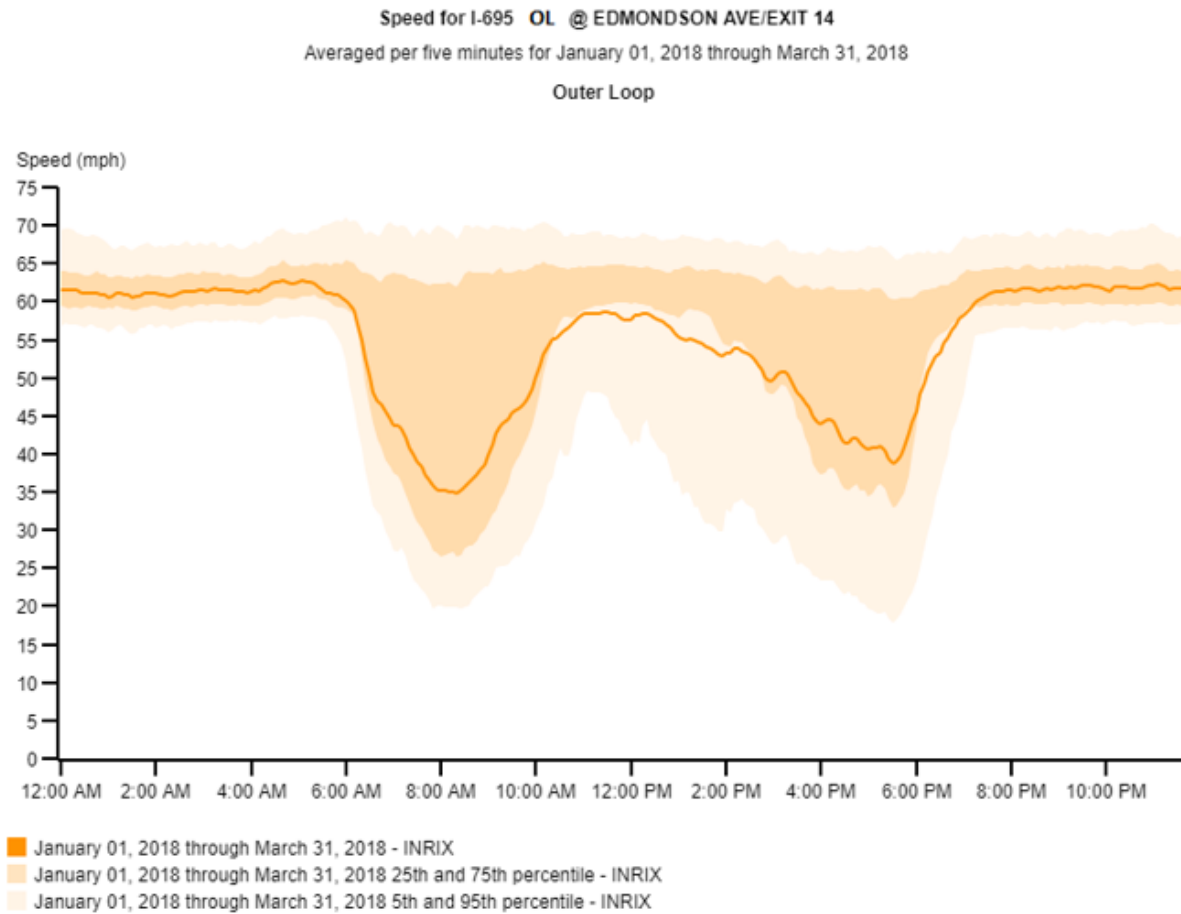
| Location | Average max length (miles) | Average Daily Duration | All Events/ Incidents | Volume Estimate (AADT) |
|----------------------------------|----------------------------|------------------------|-----------------------|------------------------|
| I-695 OL @ EDMONDSON AVE/EXIT 14 | 5.01 | 2 h 43 m | 834 | 88946 |



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 few times during the 1st quarter of 2018 it extended as far as Towson. A beltway widening project is underway in the area.

Quarterly Report 2018

- Simplified Graphics



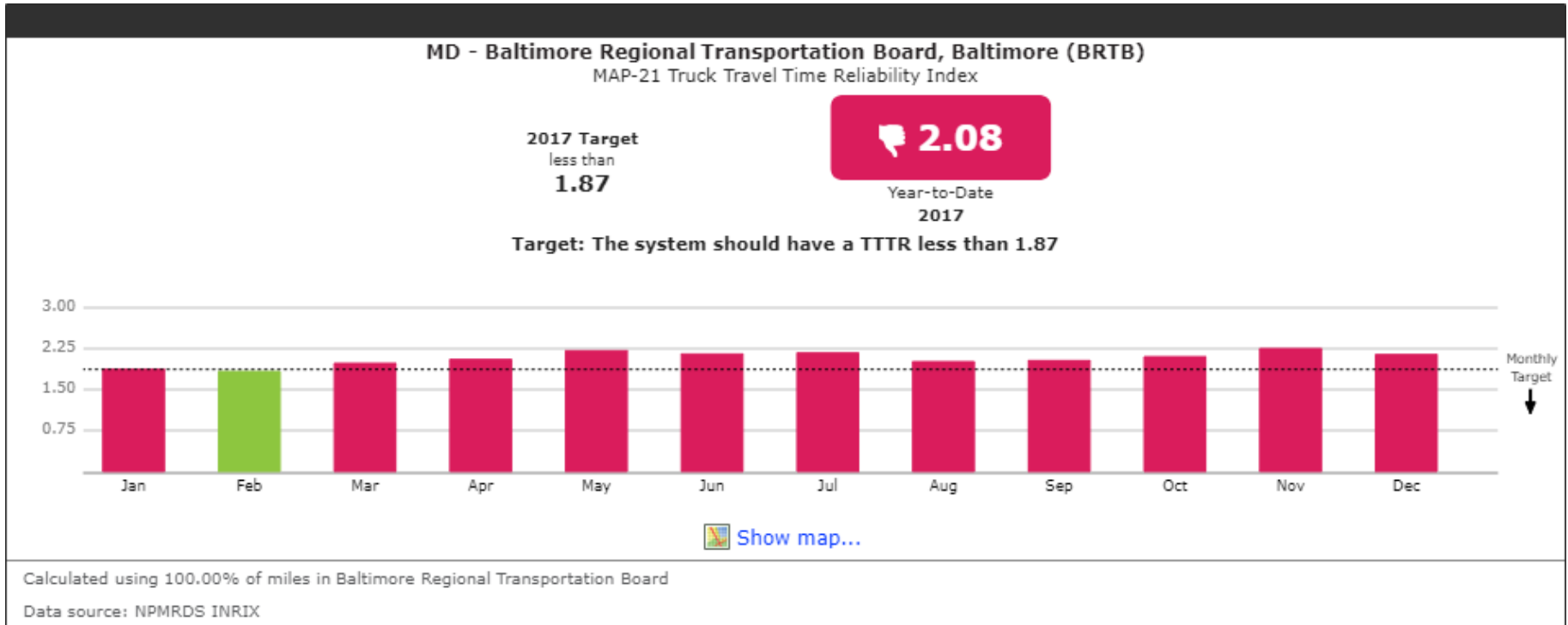
Annual Congestion Analysis Report

- Future – 2018
- Expanded version of Quarterly reports
- Probe Data Analytics Suite no longer limited to 3 month queries
- Top 25 Regional Bottlenecks
- Top 10 (or more) for each regional jurisdiction
- Not limited to limited access highways or arterials
- Includes all roads in the available probe data coverage

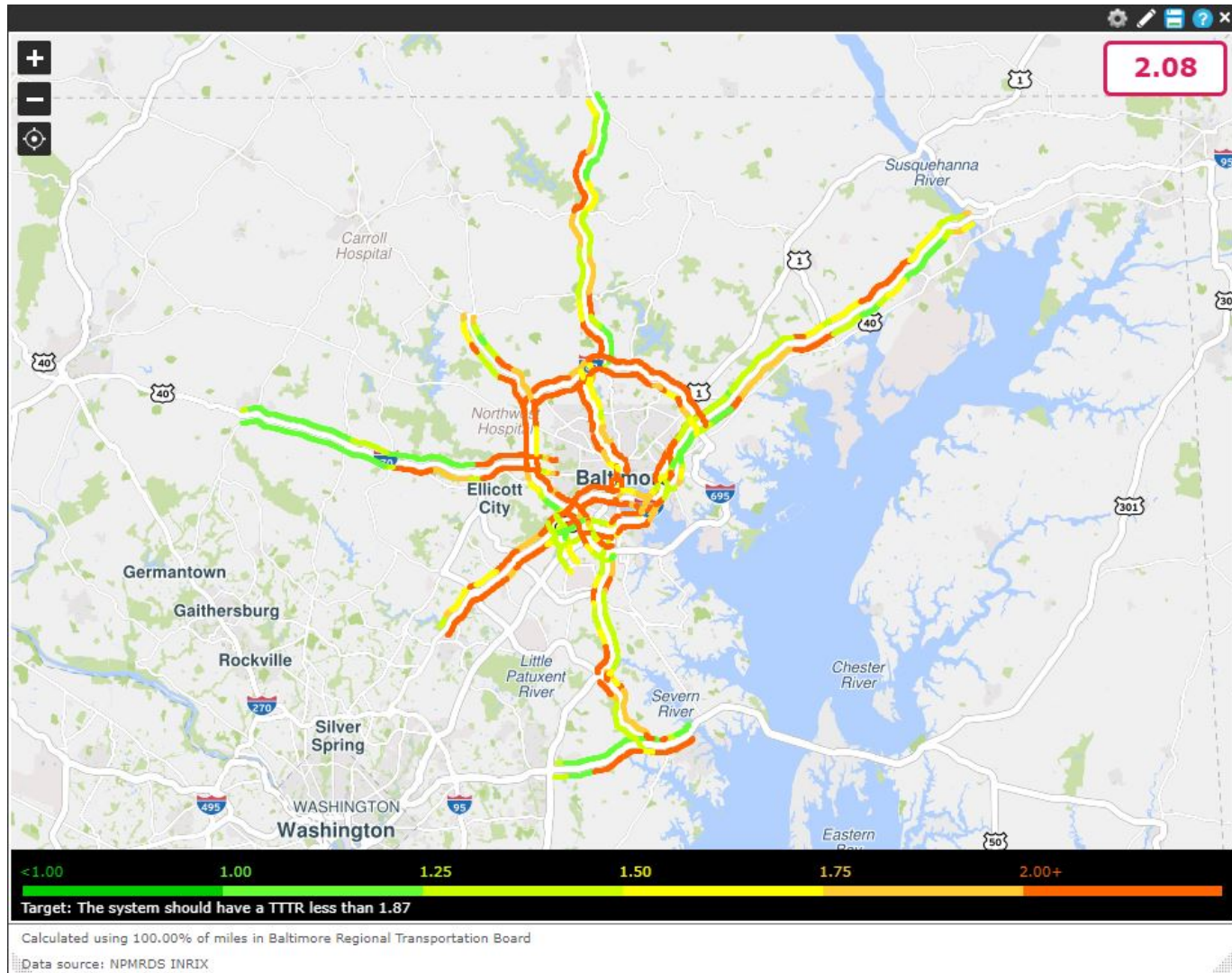
Annual Report – New Features

- Status of congestion regionally and by jurisdiction
- New Map 21 Performance Measures – Travel Time Reliability Measures (MPA & UZA) , Peak Hour Excessive Delay (UZA only)

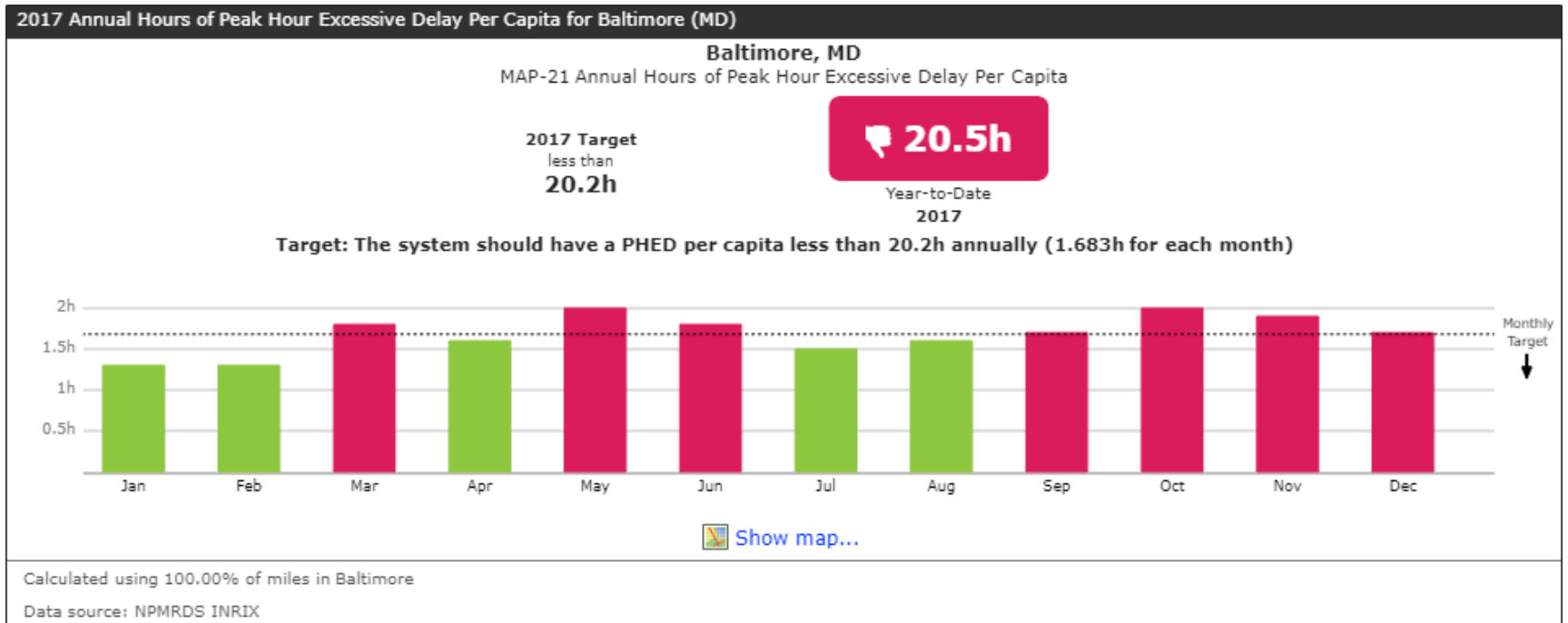
Map 21 Truck Time Reliability- MPA



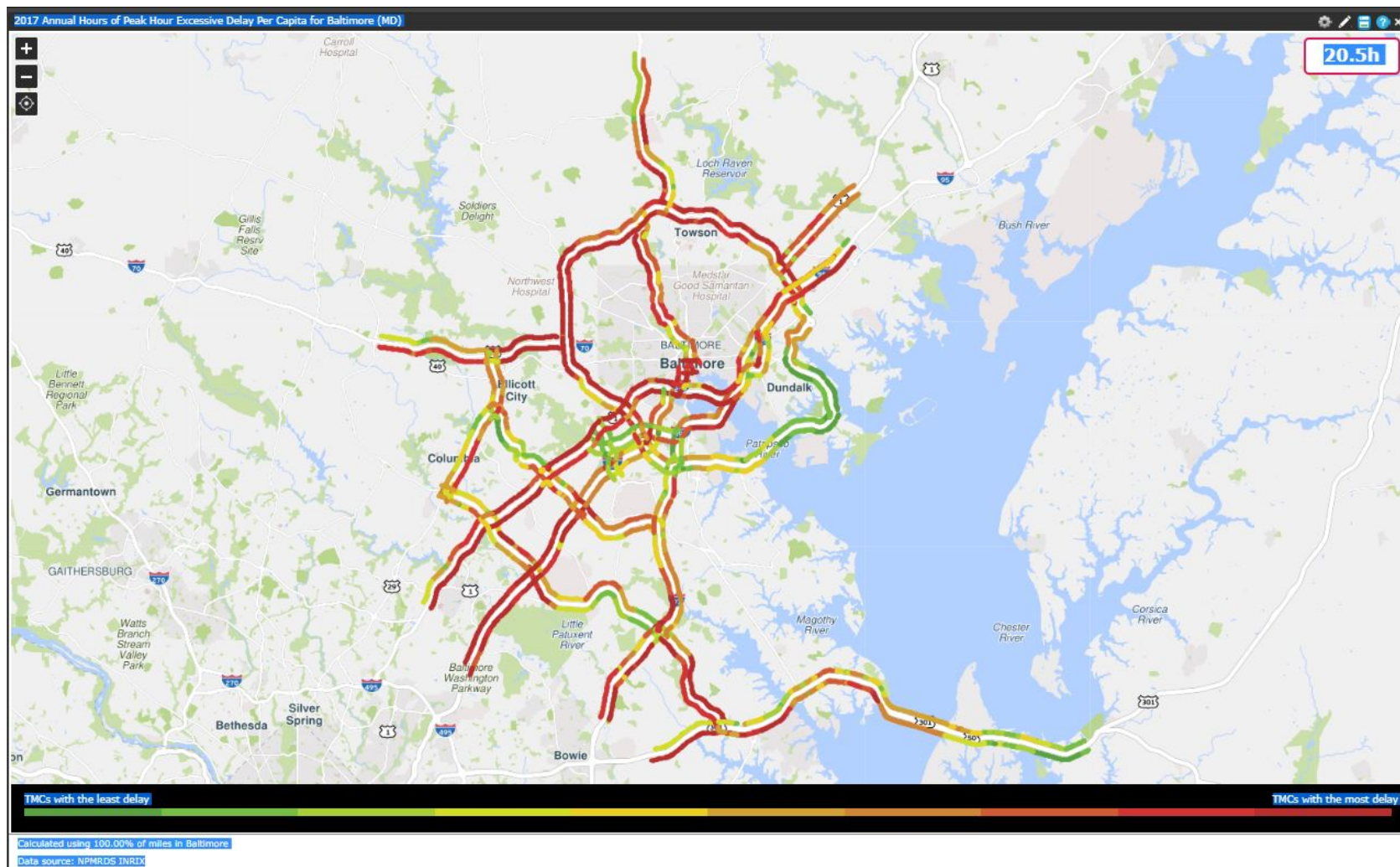
Map 21 Truck Time Reliability- MPA



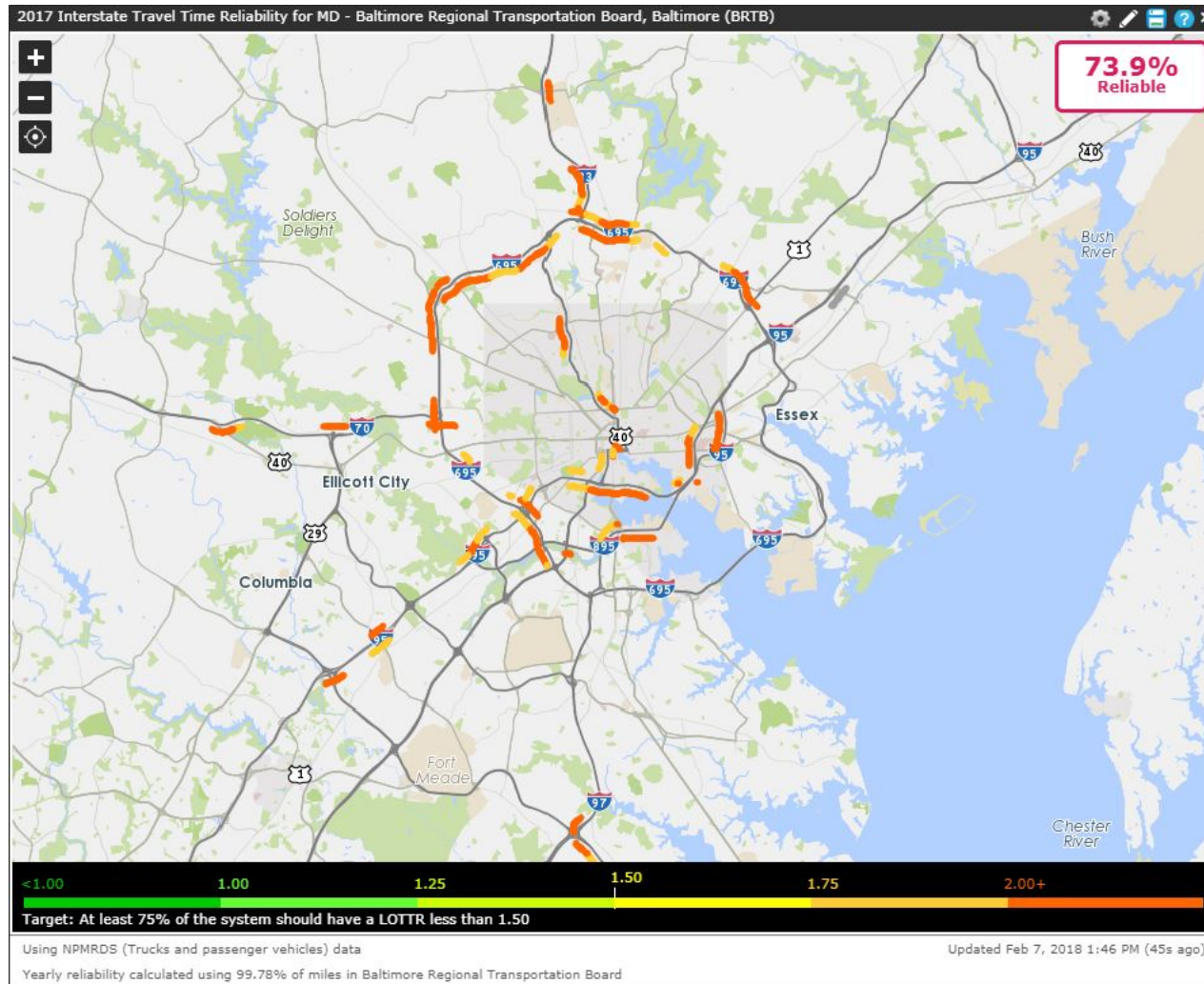
Map 21 Peak Hour Excessive Delay- UZA



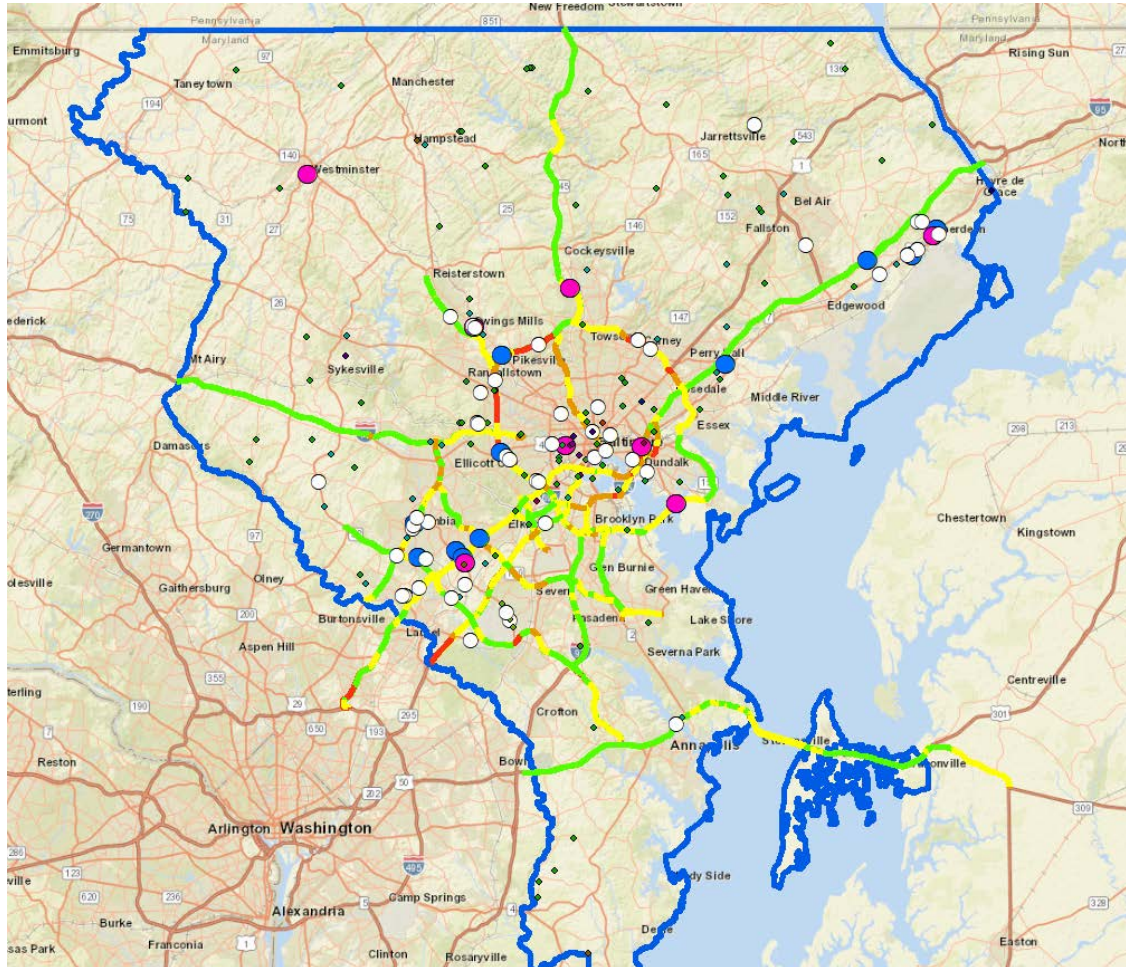
Map 21 Peak Hour Excessive Delay- UZA



Most Unreliable Segments - MPA



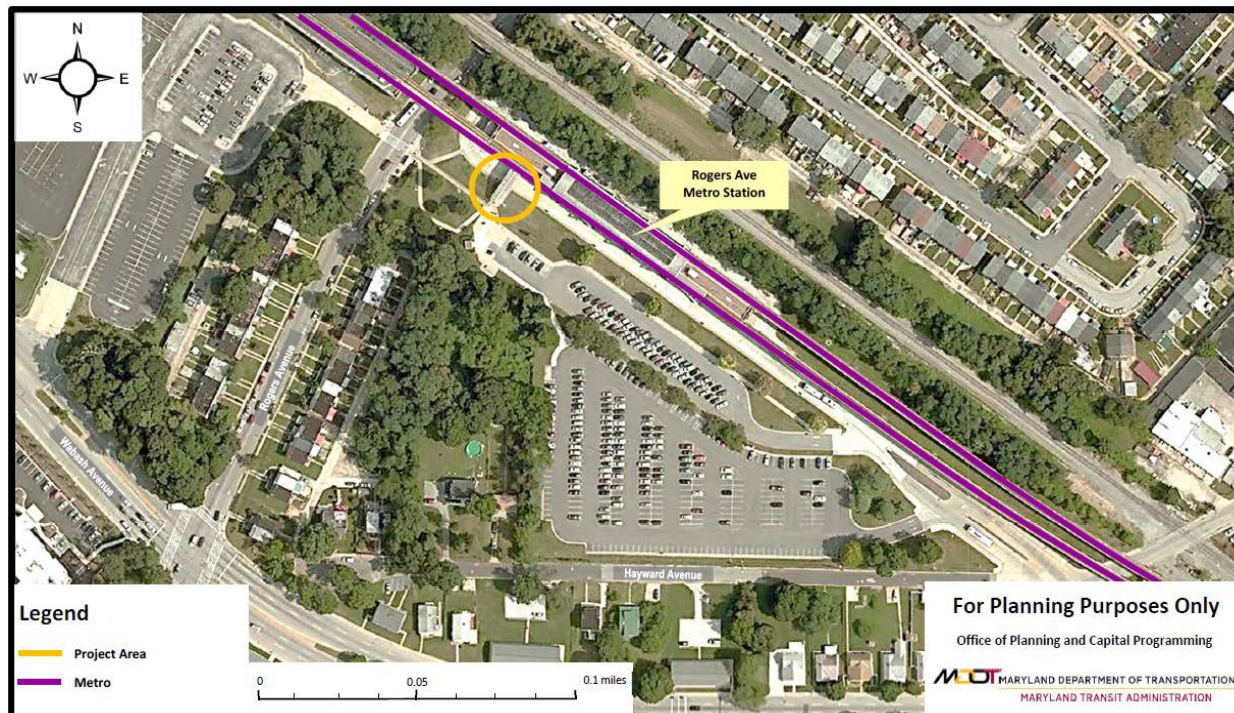
Long Range Plan and T.I.P. Projects overlayed with speed data (AM Peak)



Passerelle Replacement at Rogers Avenue Metro Station



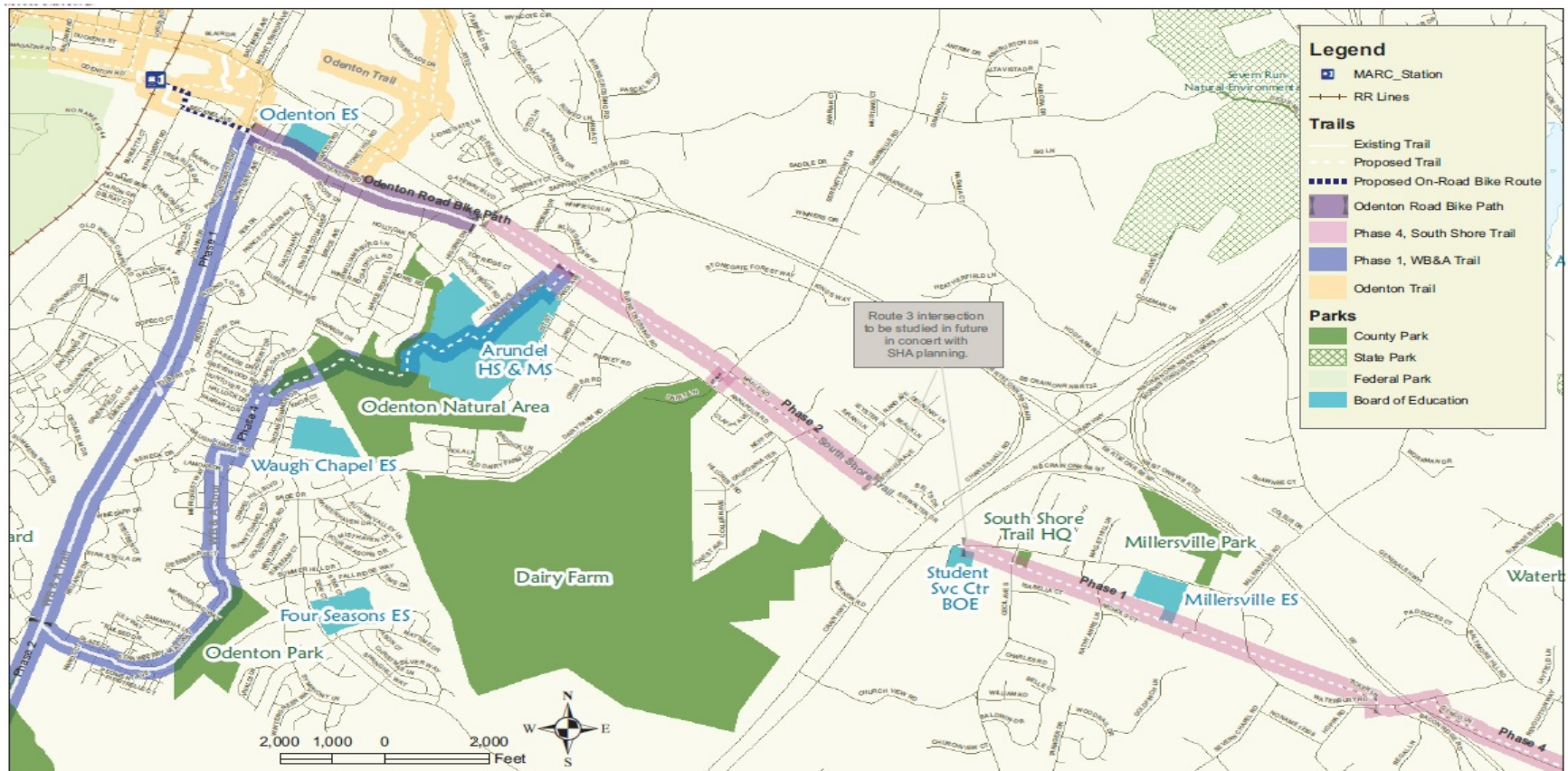
- Replace existing passerelle (elevated pedestrian walkway) due to deterioration
- Federal request: \$800,000 for final design & construction



South Shore Trail Phase II



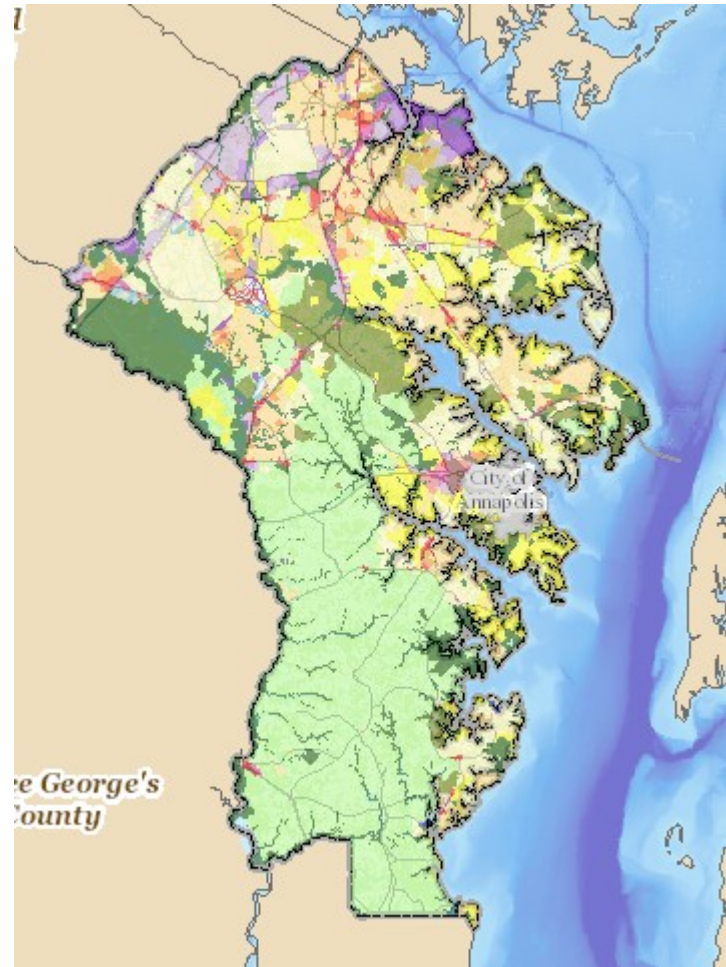
- Construction of a 10' wide shared use-path extending from Annapolis Road to Bonheur Drive
- Federal request: \$4,188,800 for construction



Bicycle Initiatives in Anne Arundel Co



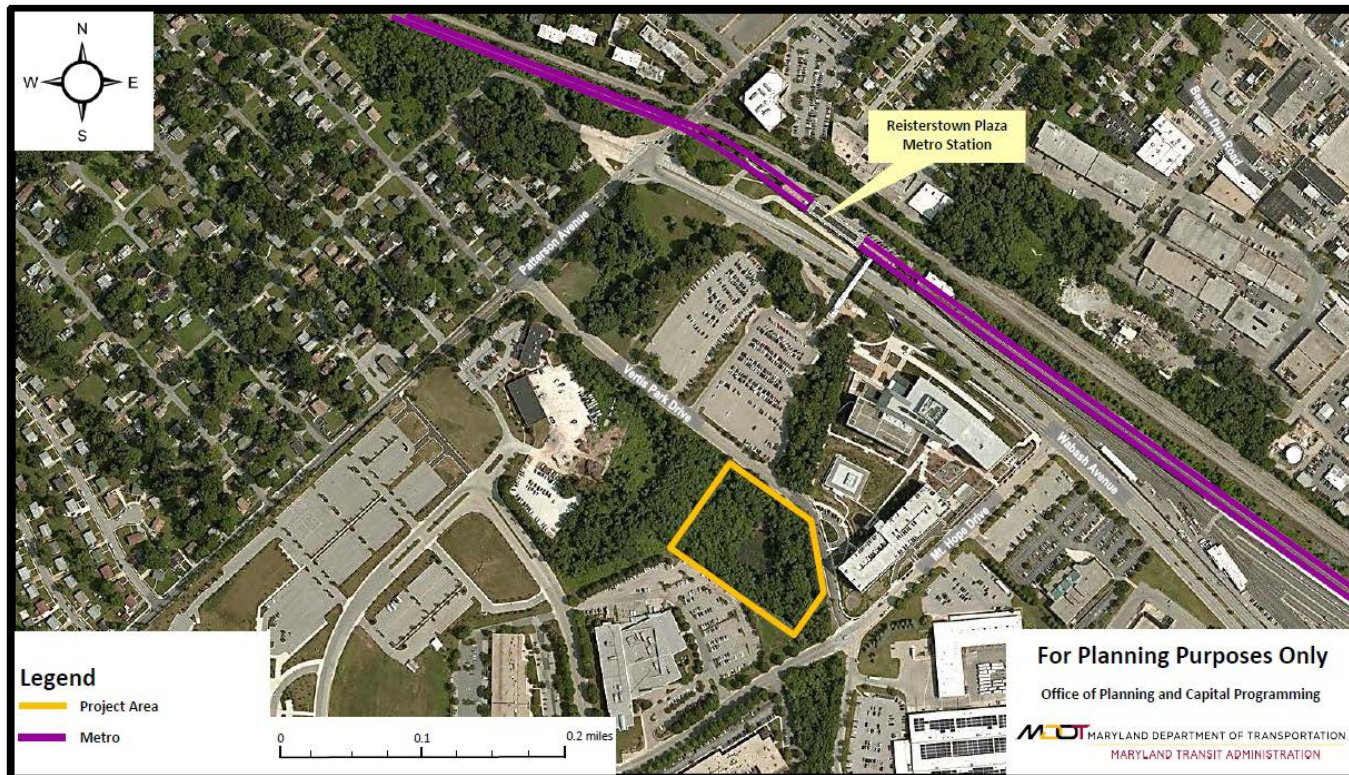
- Complete an access study to all elementary and middle schools as well as introduce bicycle safety training at 20 schools for grades 3-5.
- Federal request: \$145,120 for non-infrastructure



Reisterstown Plaza Metro Station



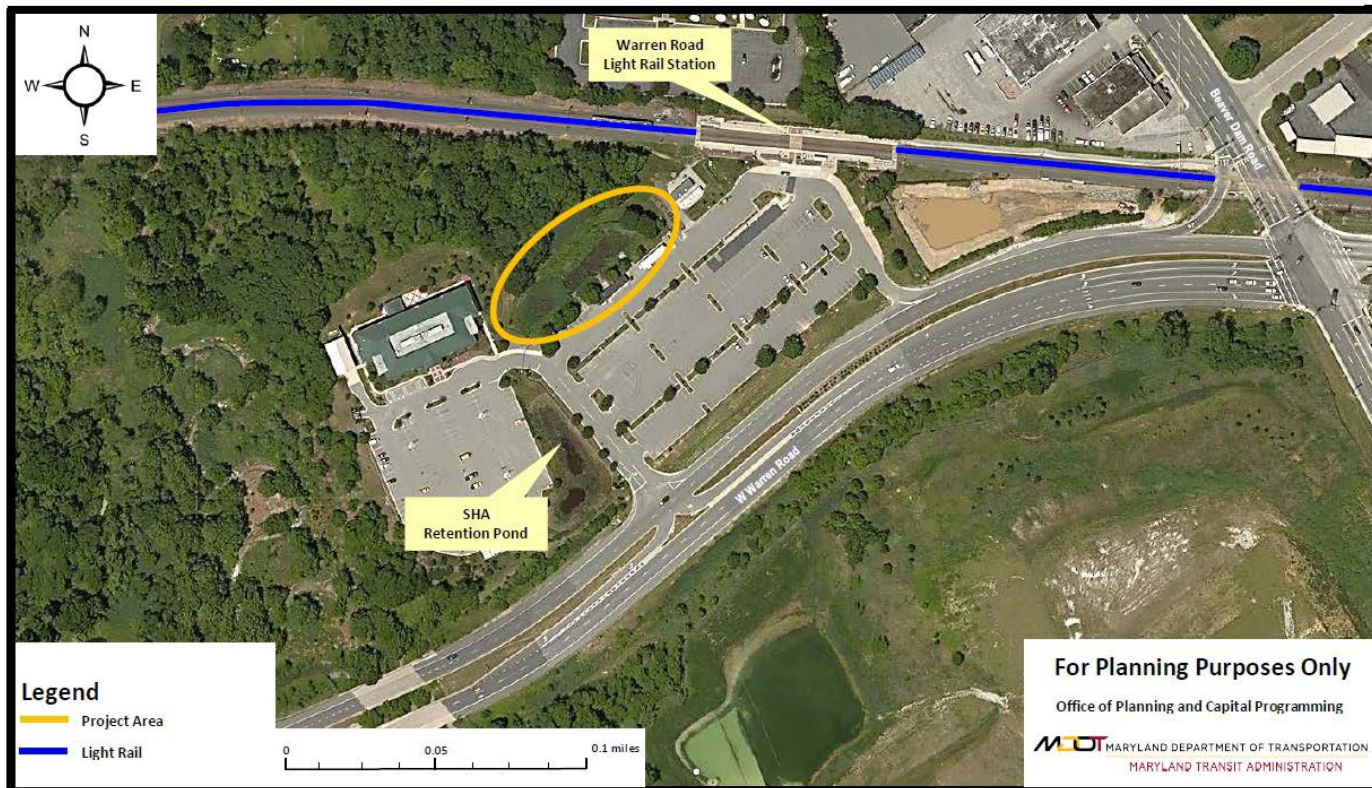
- Stormwater management pond repair and retrofit
- Federal request: \$1,320,000 for design and construction



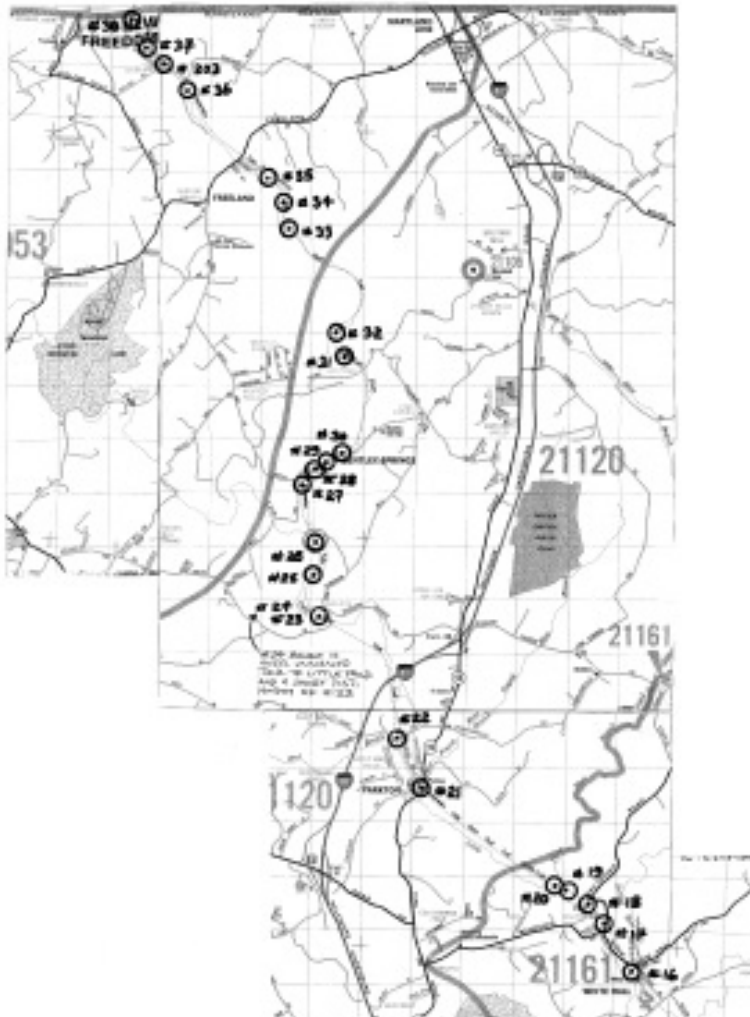
Warren Road Light Rail Station



- Stormwater management pond repair and retrofit
- Federal request: \$700,000 for design and construction



Torrey C Brown Trail



- Develop a toolbox of solutions in 6 categories that will cover 37 bridges over 19.7 miles
- Federal request: \$305,000 for design

Willow Pond SWM in Carroll County



- Deepen the pond to decrease thermal impacts and reconnect 1700 linear feet of stream channel
- Federal request: \$2,796,000 for construction



Ma & Pa Connector Trail



- Connect two existing sections of the Ma & Pa Trail, providing access to three communities and four County park systems
- Federal request: \$3,999,159 for construction





Next Steps for TA Applications

- Applications not recommended for funding are eligible in the statewide competition: \$10 million available in FY 2019
- Provide continued support for developing TA applications through BPAG:
 - Share webinar on developing BUILD applications for trail projects
 - Share May 2018 list of US DOT fund sources available to fund bicycle and pedestrian projects

For more information

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