Baltimore Regional Transportation Board

CMP Committee

February 2, 2021

BMC

Agenda

1. **WELCOME AND INTRODUCTIONS** (5 min.)

2. **PURPOSE OF MEETING** (5 min.)

3. **UPDATE ON ONLINE CMP TOOL** (10 min.)
   BMC staff will provide an update on the Online CMP Tool.

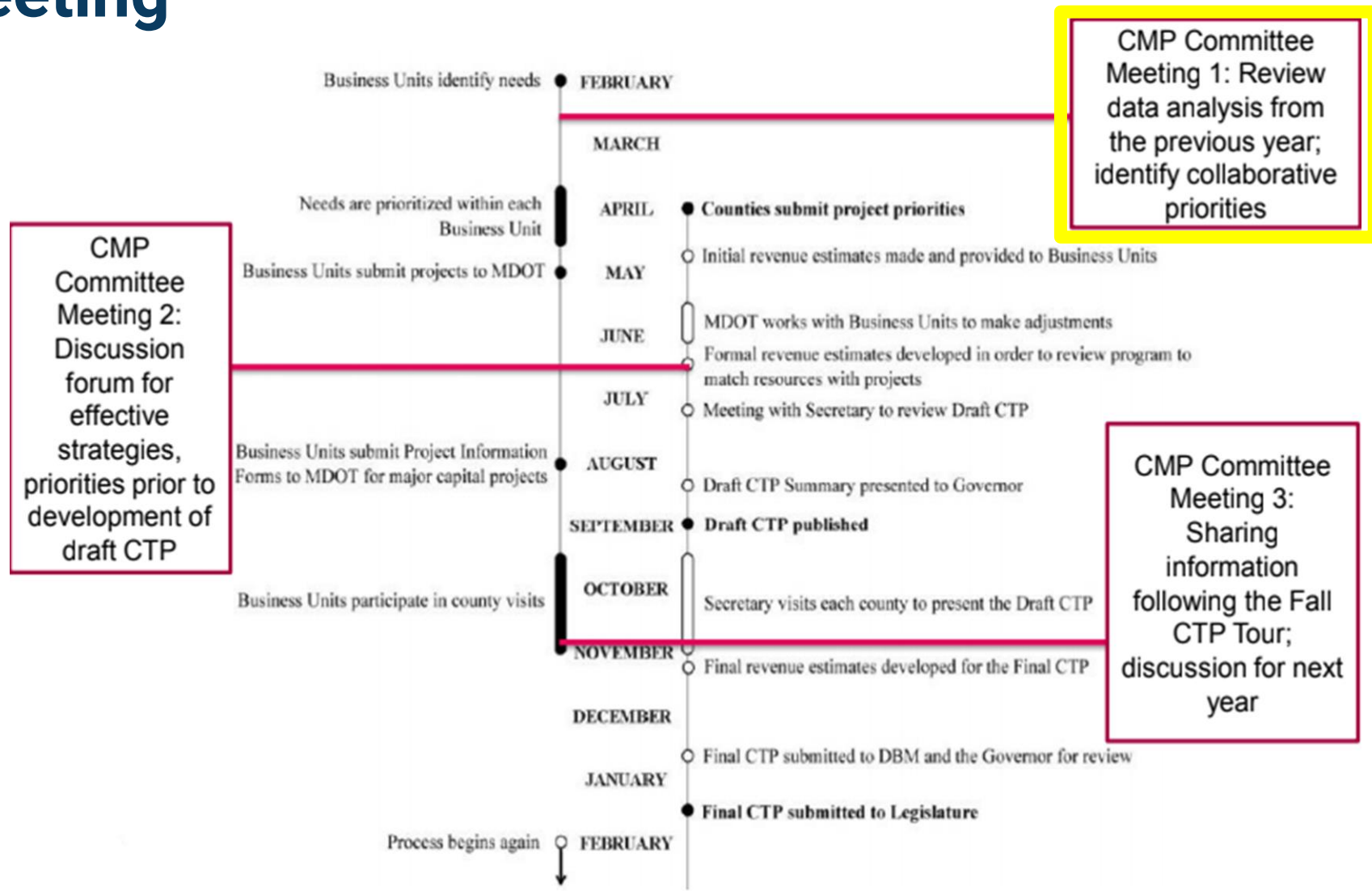
4. **REVIEW CONGESTION SUMMARY FROM 2020** (15 min.)
   BMC staff will present an overview of the most congested locations identified in 2020 for the region and by jurisdiction and compare to past years.

5. **IDENTIFICATION OF REGIONAL PRIORITY CONGESTED LOCATIONS** (40 min.)
   Based on the congestion summary discussion, the group will identify regional priorities for consideration in Priority Letter projects.

6. **NEXT STEPS** (5 min.)

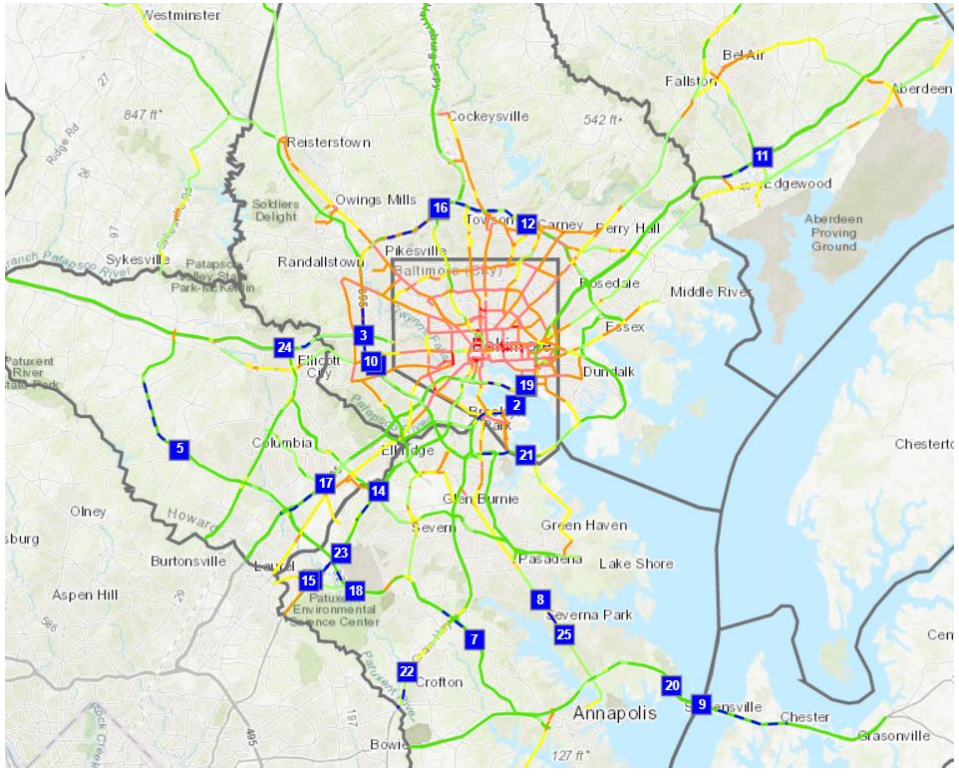
2. Purpose of Meeting

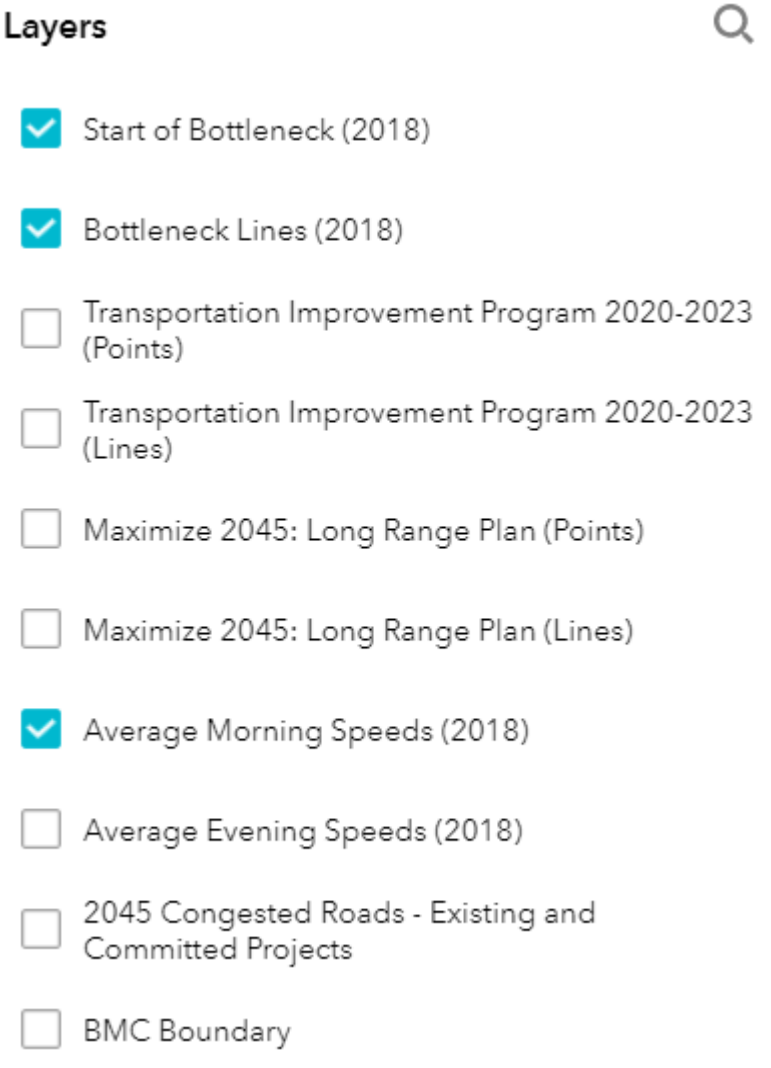
- Identify regional congestion priorities to consider in advance of local jurisdiction priority letter development



3. Update on Online CMP Tool

- Online CMP Tool
- Refer to Proposed Performance Metrics and Data Collection & Management Plan for other data





CMP Tool – Development Schedule

2018 – Baseline Year

Completed Layers:

- -Bottlenecks
- -TIP
- -LRTP
- -Avg. Speeds (AM/PM)
- -2045 Congested Roads

Layers under final review:

- -Travel Time Index (TTI)
- -Planning Time Index (PTI)
- -Truck Travel Time Reliability Index
- -Interstate Travel Time Reliability
- -Non Interstate Travel Time Reliability

Layers Under Consideration:

- -Priority Letter Projects
- -Vulnerable Population Data
- -Duration of Congested Conditions (typical weekday/weekend, etc)
- - Multi-modal
- - Safety

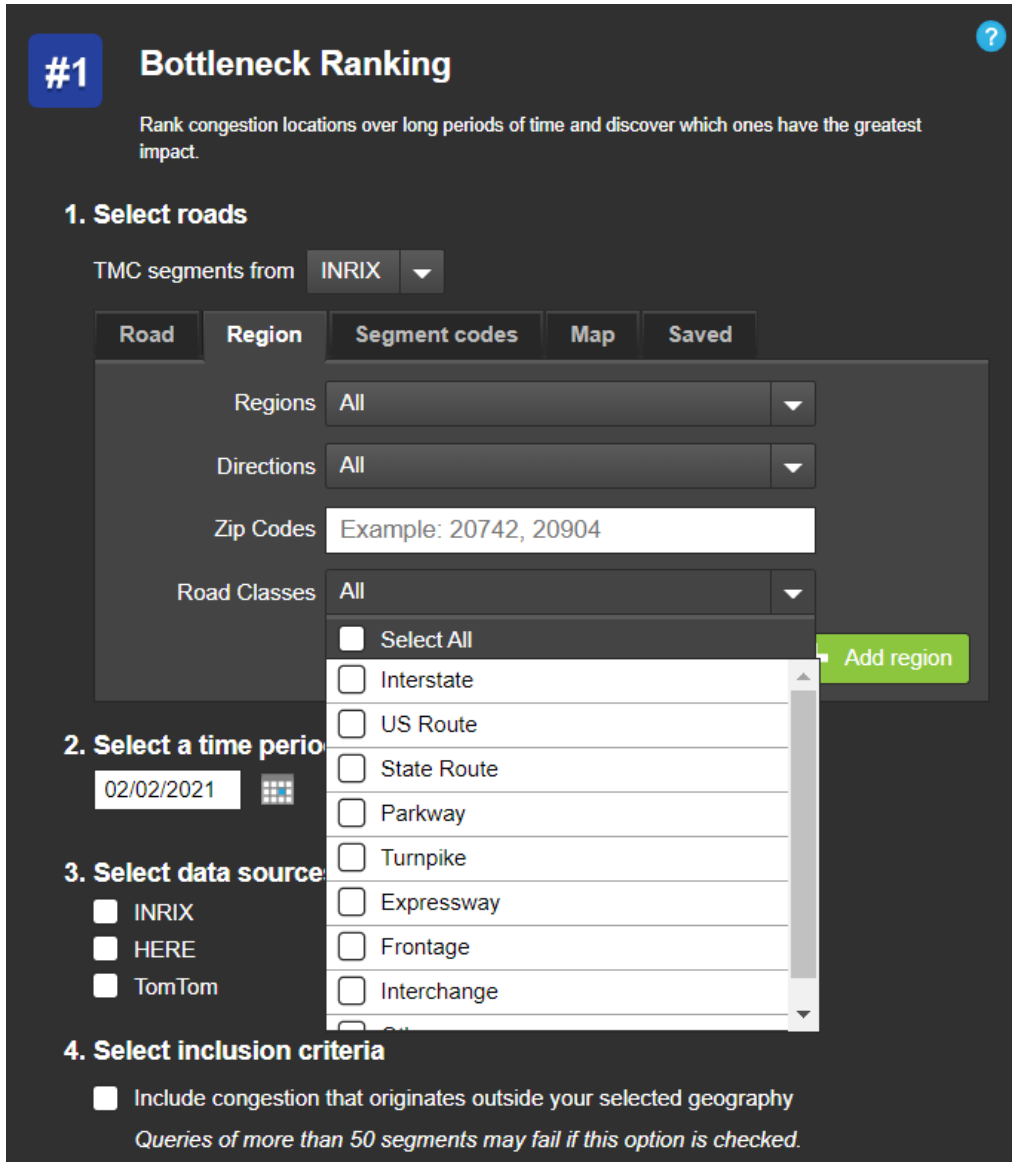
Tentative Release Schedule:

2018 – Quarter 1 – Online. Additional layers under review

2019 – Quarter 2 – Bottlenecks identified and geocoded

2020 – Quarter 3 – Bottlenecks identified

Review Congestion Summary from 2019 and 2020



- Bottleneck presentations for 2019 and 2020

Performance Metrics for Use in the CMP

Objective 1: Enhance access to jobs and other opportunities

1. Number of jobs accessible within a 30-minute drive
2. Number of jobs accessible within a 45-minute transit trip

Objective 2: Improve travel times and reduce traveler delay on all modes of travel

1. Travel time index (ratio of peak-period to off-peak travel time)
2. Duration of congested conditions (e.g., on typical weekdays, weekends)
3. Person hours of peak hour excessive delay
4. Average bus speeds
5. Anticipated growth in V/C ratio in peak period (base year to 2045)

Objective 3: Improve travel time reliability and resiliency for motorists and transit

1. Level of Travel Time Reliability (LOTTR)
2. Transit on-time performance
    - Bus
    - Rail

Objective 4: Improve freight reliability

1. Truck Travel Time Reliability (TTTR) Index

Objective 5: Enhance travel choices, including access to transit, bicycling, walking, and other non-SOV modes

1. Non-SOV mode share
2. Transit network extent and frequency Access to frequent transit (secondary)
3. Bicycle network extent
4. Bicycle Level of Traffic Stress (LTS)
5. Park and ride utilization

Objective 6: Reduce traffic incidents that contribute to traveler delays and loss of life or injury

1. Number of crashes
2. Number of pedestrian/bicycle crashes

Objective 7: Enhance interjurisdictional coordination to optimize transportation system performance

To be addressed in implementation plan

RTB

4. Review Congestion Summary from 2019 and 2020

Recommendations: Process to Analyze Areas of Congestion and Associated Mobility Issues

- **Identify priority multimodal needs**

1. Map key multimodal performance metrics across the region
   - Level of travel time reliability (LOTTR)
   - Bus speeds
   - Transit on-time performance
   - Bicycle level of traffic stress
   - Park and ride lot utilization

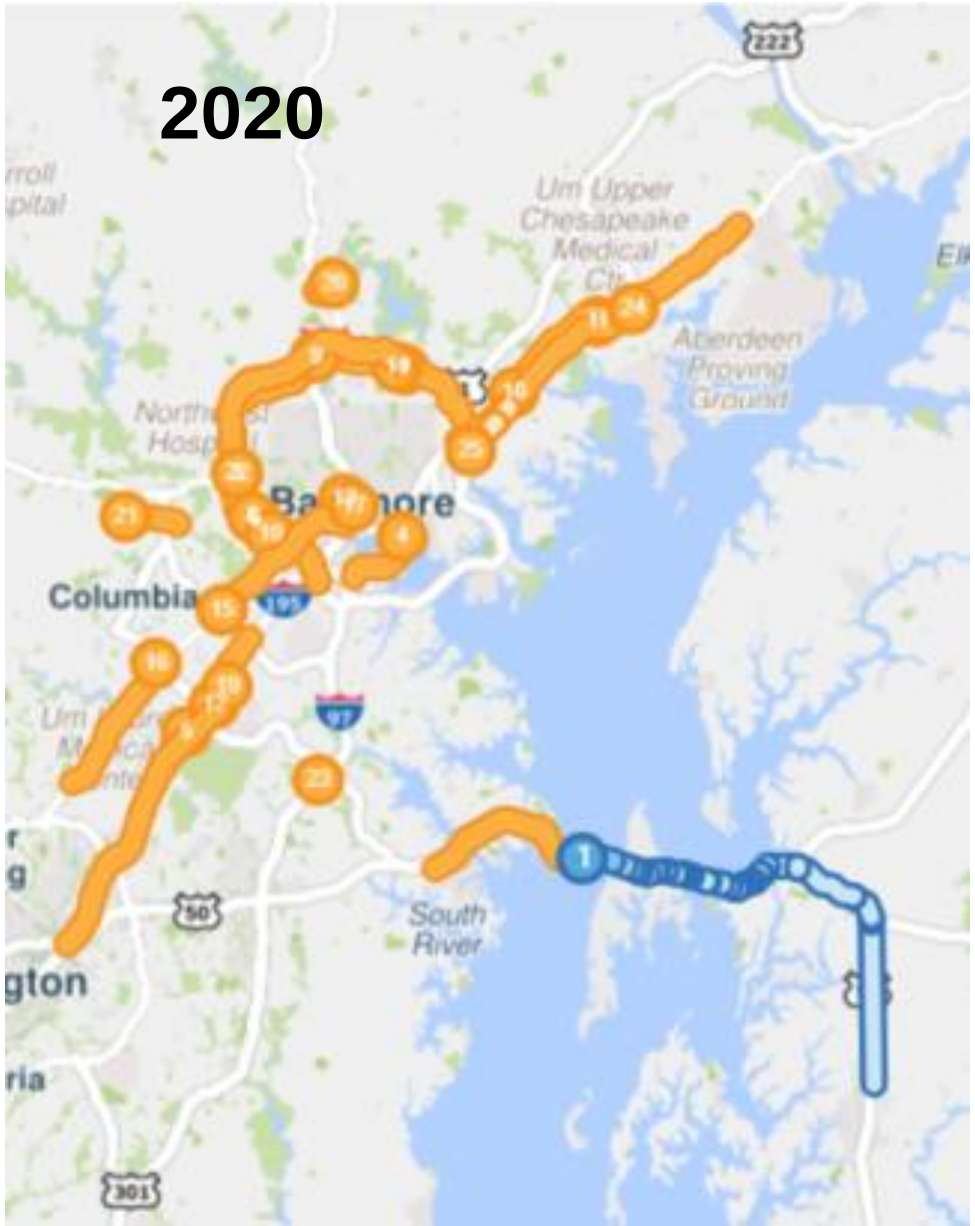
2. Identify deficiencies (based on thresholds, examples below)
   - *Transit on-time performance:* In relation to MDOT MTA goals: Core bus - 80%; Light rail/Metro subway - 95%; MARC train - 93%
   - *Park and ride lot utilization:* Over 85% (oversubscribed), under 15% (underutilized)

Analyze freight corridors (special analysis)

- Map travel time index (TTI) and truck travel time reliability (TTTR) index on key goods movement routes
- Can be done every 3-4 years

BMC

Top 25 Bottlenecks in the Region – All Roads



Top 25 Bottlenecks in the Region – All Roads

2019

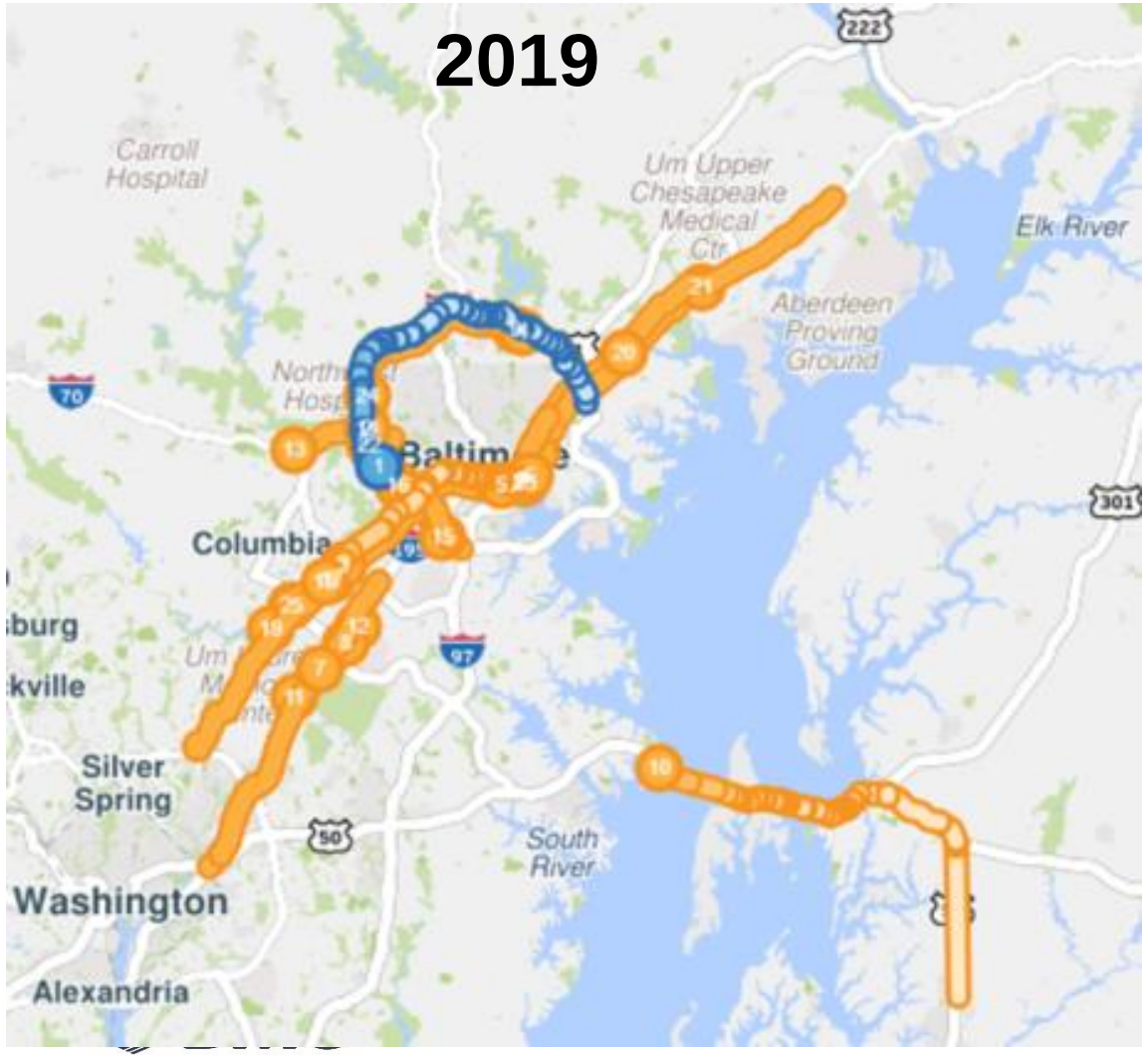
Rank	Location
1	I-695 OL @ EDMONDSON AVE/EXIT 14
2	I-695 IL @ MD-122/SECURITY BLVD/EXIT 17
3	I-95 N @ MD-100/EXIT 43
4	I-695 IL @ MD-542/LOCK RAVEN BLVD/EXIT 29
5	I-95 N @ FORT MCHENRY TUNNEL
6	I-895 S @ HOLABIRD AVE/EXIT 10
7	MD-295 S @ MD-198
8	MD-295 N @ CANINE RD
9	I-695 OL @ MD-567/CROMWELL BR RD/EXIT 29
10	US-50 W @ BAY BRIDGE
11	MD-295 S @ PRINCE GEORGE'S/ARUNDEL CO LINE
12	MD-295 N @ MD-175
13	I-70 W @ US-29/EXIT 87
14	I-695 OL @ MD-122/SECURITY BLVD/EXIT 17
15	I-695 OL @ MD-295/WASH-BALT PKY/EXIT 7
16	I-695 IL @ MD-372/WILKENS AVE/EXIT 12
17	I-95 N @ MD-175/EXIT 41
18	I-95 S @ MD-175/EXIT 41
19	I-95 S @ MD-216/EXIT 35
20	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67
21	I-95 N @ MD-152/EXIT 74
22	I-695 OL @ I-70/EXIT 16
23	I-95 S @ FORT MCHENRY TUNNEL TOLL PLAZA
24	I-695 OL @ MD-26/EXIT 18
25	I-95 N @ MD-32/EXIT 38

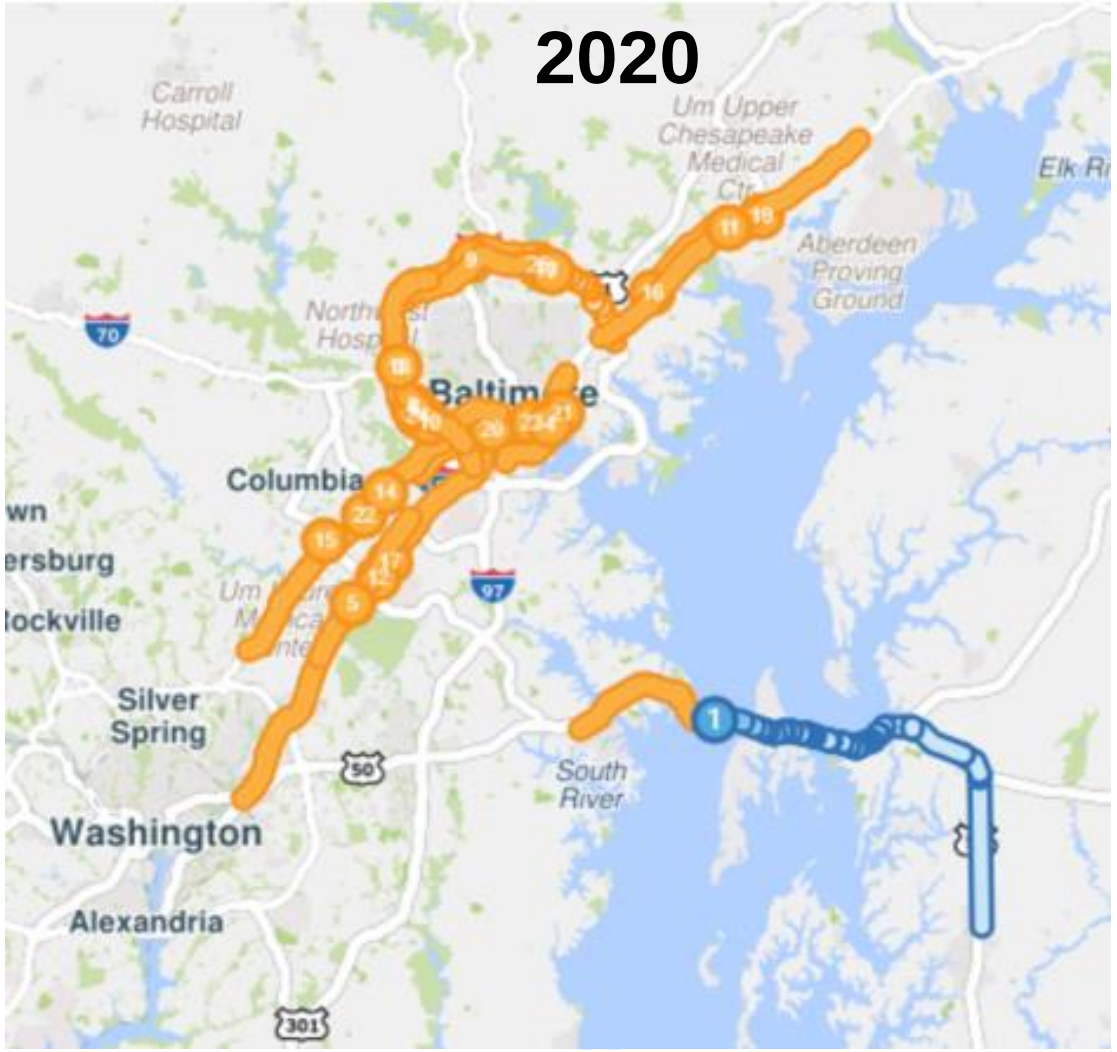
2020

Rank	Location
1	US-50 W @ BAY BRIDGE
2	US-50 E @ BAY BRIDGE
3	I-695 IL @ MD-122/SECURITY BLVD/EXIT 17
4	I-895 N @ HARBOR TUNNEL THWY (NORTH)
5	MD-295 S @ MD-198
6	I-695 OL @ MD-144/FREDERICK RD/EXIT 13
7	I-695 IL @ MD-542/LOCK RAVEN BLVD/EXIT 29
8	I-695 OL @ EDMONDSON AVE/EXIT 14
9	I-695 IL @ I-83/MD-25/EXIT 23
10	I-695 IL @ MD-372/WILKENS AVE/EXIT 12
11	I-95 N @ MD-152/EXIT 74
12	MD-295 N @ CANINE RD
13	W FRANKLIN ST W @ N MARTIN LUTHER KING JR BLVD
14	I-695 OL @ MD-567/CROMWELL BR RD/EXIT 29
15	I-95 S @ MD-100/EXIT 43
16	I-95 N @ MD-32/EXIT 38
17	HOWARD ST N @ W LOMBARD ST
18	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67
19	MD-295 N @ MD-175
20	WARREN RD E @ MD-45/YORK RD
21	FREDERICK RD W @ US-40/BALTIMORE NATIONAL PIKE
22	I-695 OL @ MD-122/SECURITY BLVD/EXIT 17
23	MD-175 N @ MD-3/ROBERT CRAIN HWY
24	I-95 N @ MD-24/EXIT 77
25	MD-7 S @ I-695/BALTIMORE BELTWAY LOOP

BMC

Top 25 Bottlenecks in the Region – Freeways





Top 25 Bottlenecks in the Region – Freeways

2019

Rank	Head Location
1	I-695 OL @ EDMONDSON AVE/EXIT 14
2	I-695 IL @ MD-122/SECURITY BLVD/EXIT 17
3	I-95 N @ MD-100/EXIT 43
4	I-695 IL @ MD-542/LOCH RAVEN BLVD/EXIT 29
5	I-95 N @ FORT MCHENRY TUNNEL
6	I-895 S @ HOLABIRD AVE/EXIT 10
7	MD-295 S @ MD-198
8	MD-295 N @ CANINE RD
9	I-695 OL @ MD-567/CROMWELL BR RD/EXIT 29
10	US-50 W @ BAY BRIDGE
11	MD-295 S @ PRINCE GEORGE'S/ARUNDEL CO LINE
12	MD-295 N @ MD-175
13	I-70 W @ US-29/EXIT 87
14	I-695 OL @ MD-122/SECURITY BLVD/EXIT 17
15	I-695 OL @ MD-295/WASH-BALT PKY/EXIT 7
16	I-695 IL @ MD-372/WILKENS AVE/EXIT 12
17	I-95 N @ MD-175/EXIT 41
18	I-95 S @ MD-175/EXIT 41
19	I-95 S @ MD-216/EXIT 35
20	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67
21	I-95 N @ MD-152/EXIT 74
22	I-695 OL @ I-70/EXIT 16
23	I-95 S @ FORT MCHENRY TUNNEL TOLL PLAZA
24	I-695 OL @ MD-26/EXIT 18
25	I-95 N @ MD-32/EXIT 38

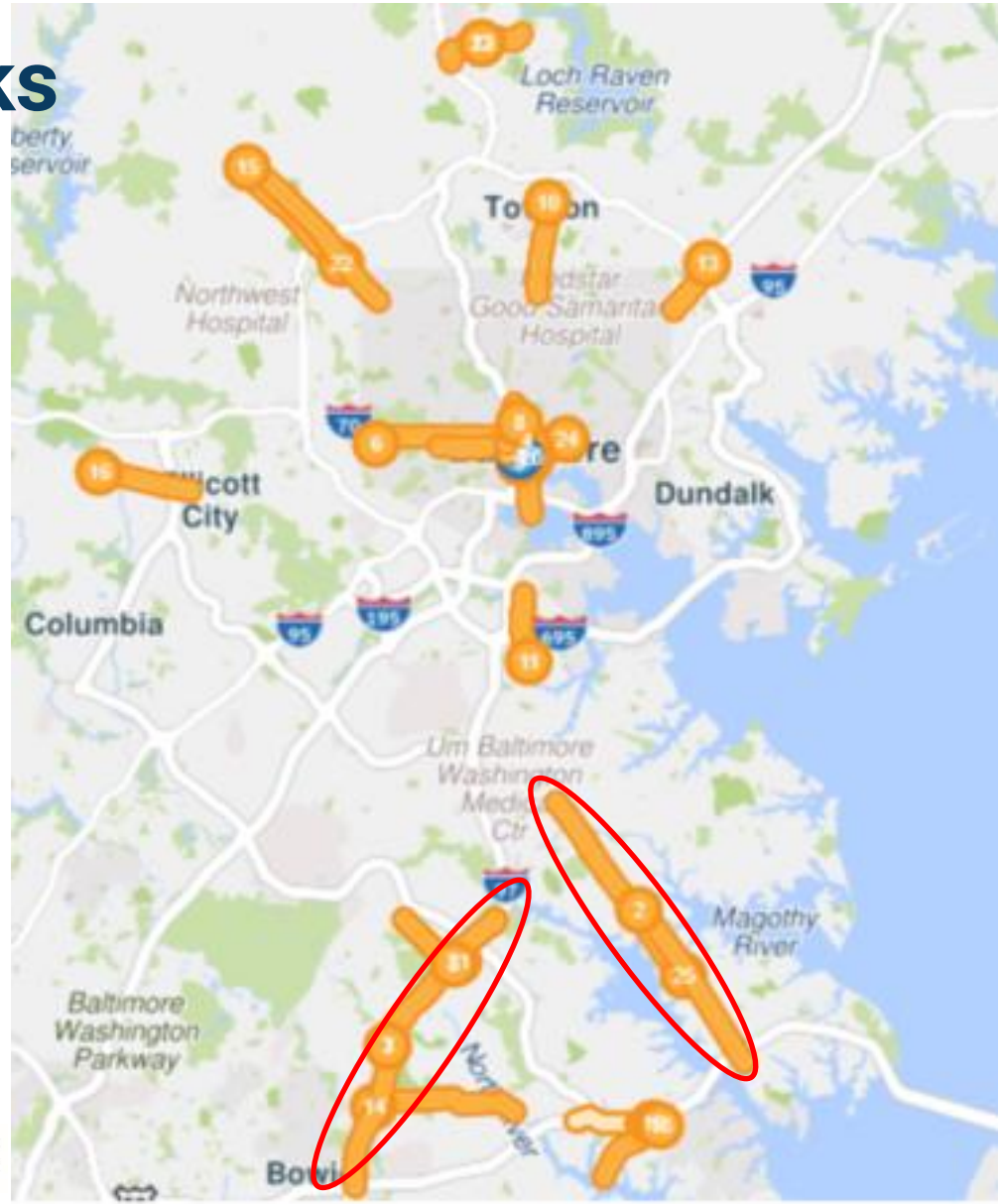
2020

Rank	Location
1	US-50 W @ BAY BRIDGE
2	US-50 E @ BAY BRIDGE
3	I-695 IL @ MD-122/SECURITY BLVD/EXIT 17
4	I-895 N @ HARBOR TUNNEL THWY (NORTH)
5	MD-295 S @ MD-198
6	I-695 OL @ MD-144/FREDERICK RD/EXIT 13
7	I-695 IL @ MD-542/LOCK RAVEN BLVD/EXIT 29
8	I-695 OL @ EDMONDSON AVE/EXIT 14
9	I-695 IL @ I-83/MD-25/EXIT 23
10	I-695 IL @ MD-372/WILKENS AVE/EXIT 12
11	I-95 N @ MD-152/EXIT 74
12	MD-295 N @ CANINE RD
13	I-695 OL @ MD-567/CROMWELL BR RD/EXIT 29
14	I-95 S @ MD-100/EXIT 43
15	I-95 N @ MD-32/EXIT 38
16	I-95 S @ MD-43/WHITE MARSH BLVD/EXIT 67
17	MD-295 N @ MD-175
18	I-695 OL @ MD-122/SECURITY BLVD/EXIT 17
19	I-95 N @ MD-24/EXIT 77
20	MD-295 N @ MD-648/ANNAPOLIS RD/WATERVIEW AVE
21	I-895 S @ HOLABIRD AVE/EXIT 10
22	I-95 N @ MD-175/EXIT 41
23	I-95 N @ FORT MCHENRY TUNNEL
24	I-695 IL @ MD-144/FREDERICK RD/EXIT 13
25	I-695 OL @ PROVIDENCE RD/EXIT 28

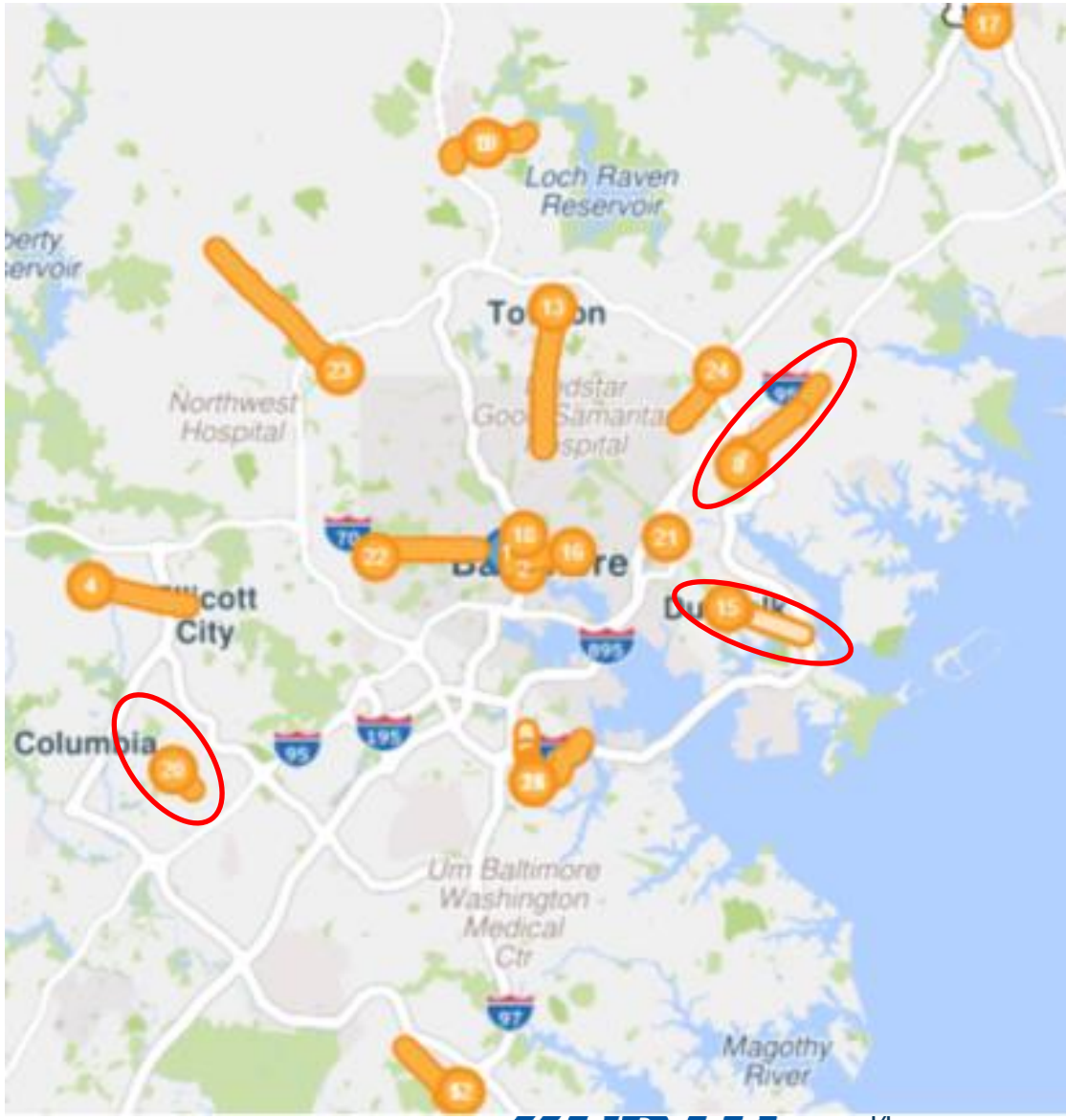
BMC

Top 25 Bottlenecks in the Region – Arterials

2019



2020



Top 25 Bottlenecks in the Region – Arterials

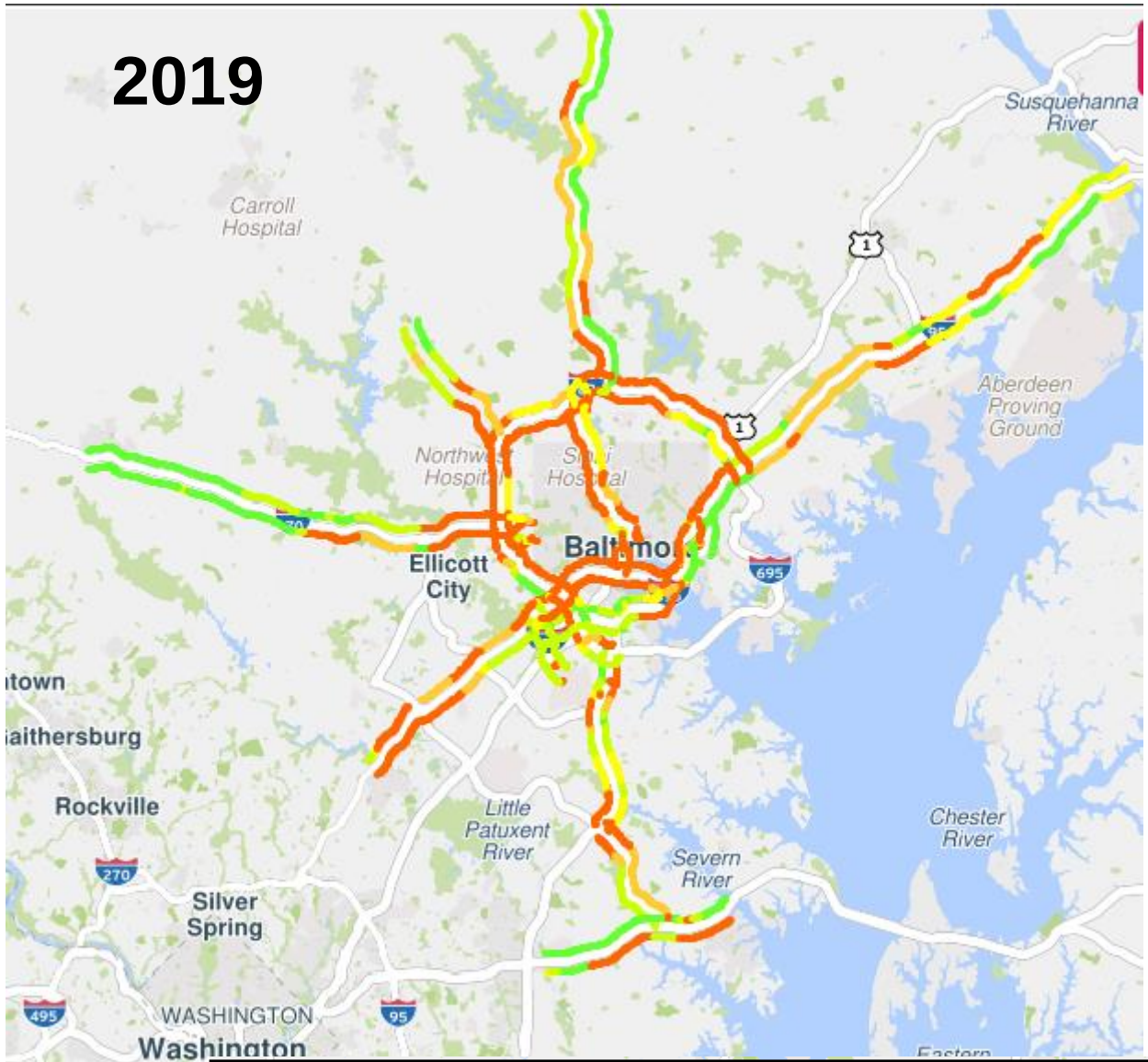
2019

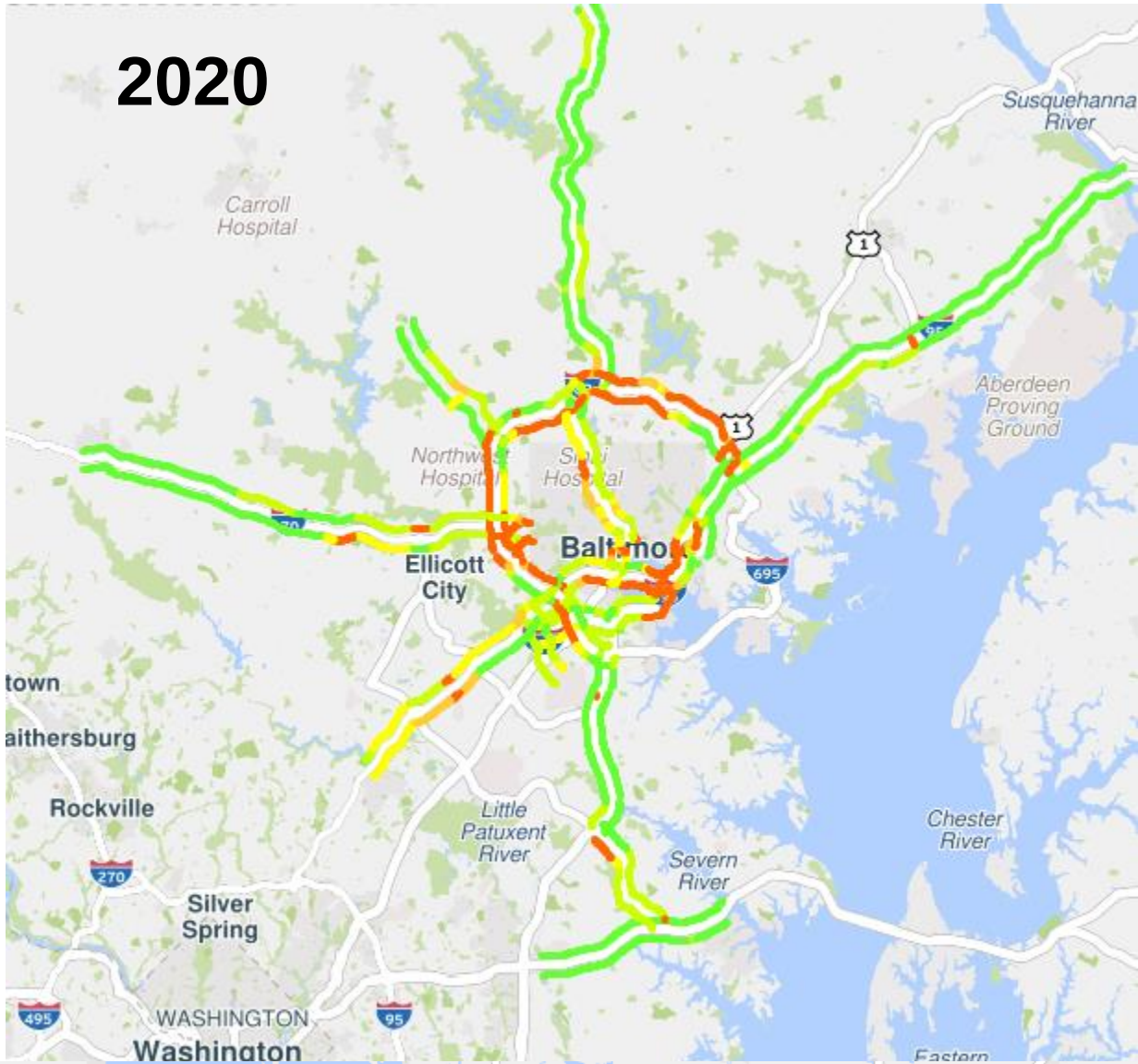
Rank	Location
1	HOWARD ST N @ W LOMBARD ST
2	MD-2 N @ ROBINSON RD
3	MD-3 N @ MD-424/DAVIDSONVILLE RD/CONWAY RD
4	US-40 E @ MD-2/ST PAUL PL
5	MD-3 S @ MD-175/ANNAPOLIS RD/MILLERSVILLE RD
6	US-40 W @ COOKS LN
7	MD-3 S @ MD-424/DAVIDSONVILLE RD/CONWAY RD
8	MARTIN L KING JR BLVD N @ PARK AVE/W CHASE ST
9	HOWARD ST S @ W CONWAY ST
10	MD-45 N @ MD-146/DULANEY VALLEY/E JOPPA RD
11	MD-2 S @ MD-710/ORDNANCE RD
12	WARREN RD E @ MD-45/YORK RD
13	US-1 N @ ROSSVILLE BLVD
14	MD-450 W @ MD-3/CRAIN HWY
15	MD-140 W @ OWINGS MILLS BLVD
16	FREDERICK RD W @ US-40/BALTIMORE NATIONAL PIKE
17	E LOMBARD ST W @ MD-2/LIGHT ST
18	MD-450 E @ MD-2/SOLOMONS ISLAND RD
19	RIVA RD N @ US-301/US-50/MD-450/WEST ST
20	MD-2 N @ E PRATT ST
21	MD-175 S @ MD-3/ROBERT CRAIN HWY
22	MD-140 E @ SUDBROOK LN
23	WARREN RD W @ MD-45/YORK RD
24	US-40 E @ WOLFE ST
25	MD-2 S @ COLLEGE PKY

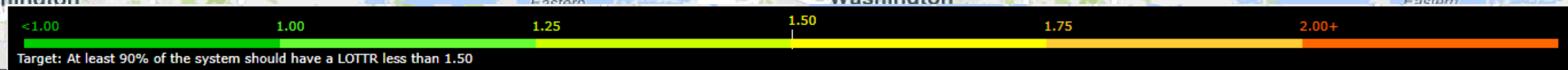
2020

Rank	Location
1	W FRANKLIN ST W @ N MARTIN LUTHER KING JR BLVD
2	HOWARD ST N @ W LOMBARD ST
3	WARREN RD E @ MD-45/YORK RD
4	FREDERICK RD W @ US-40/BALTIMORE NATIONAL PIKE
5	MD-175 N @ MD-3/ROBERT CRAIN HWY
6	RIVA RD N @ US-301/US-50/MD-450/WEST ST
7	MD-7 S @ I-695/BALTIMORE BELTWAY LOOP
8	MD-7 S @ MD-588/GOLDEN RING RD
9	MD-450 E @ MD-2/SOLOMONS ISLAND RD
10	MD-450 W @ MD-3/CRAIN HWY
11	MD-387 S @ FOREST DR
12	MD-175 S @ MD-3/ROBERT CRAIN HWY
13	MD-45 N @ MD-146/DULANEY VALLEY/E JOPPA RD
14	ORDNANCE RD S @ MD-2/RITCHIE HWY
15	WISE AVE W @ MERRITT BLVD
16	US-40 E @ WOLFE ST
17	US-1-BR S @ MD-24/VIETNAM VETS MEMORIAL HWY
18	MARTIN L KING JR BLVD N @ PARK AVE/W CHASE ST
19	WARREN RD W @ MD-45/YORK RD
20	MD-175 N @ DOBBIN RD
21	N NORTH POINT RD S @ MD-151/ERDMAN AVE
22	US-40 W @ COOKS LN
23	MD-140 E @ SUDBROOK LN
24	US-1 N @ ROSSVILLE BLVD
25	MD-2 S @ MD-710/ORDNANCE RD

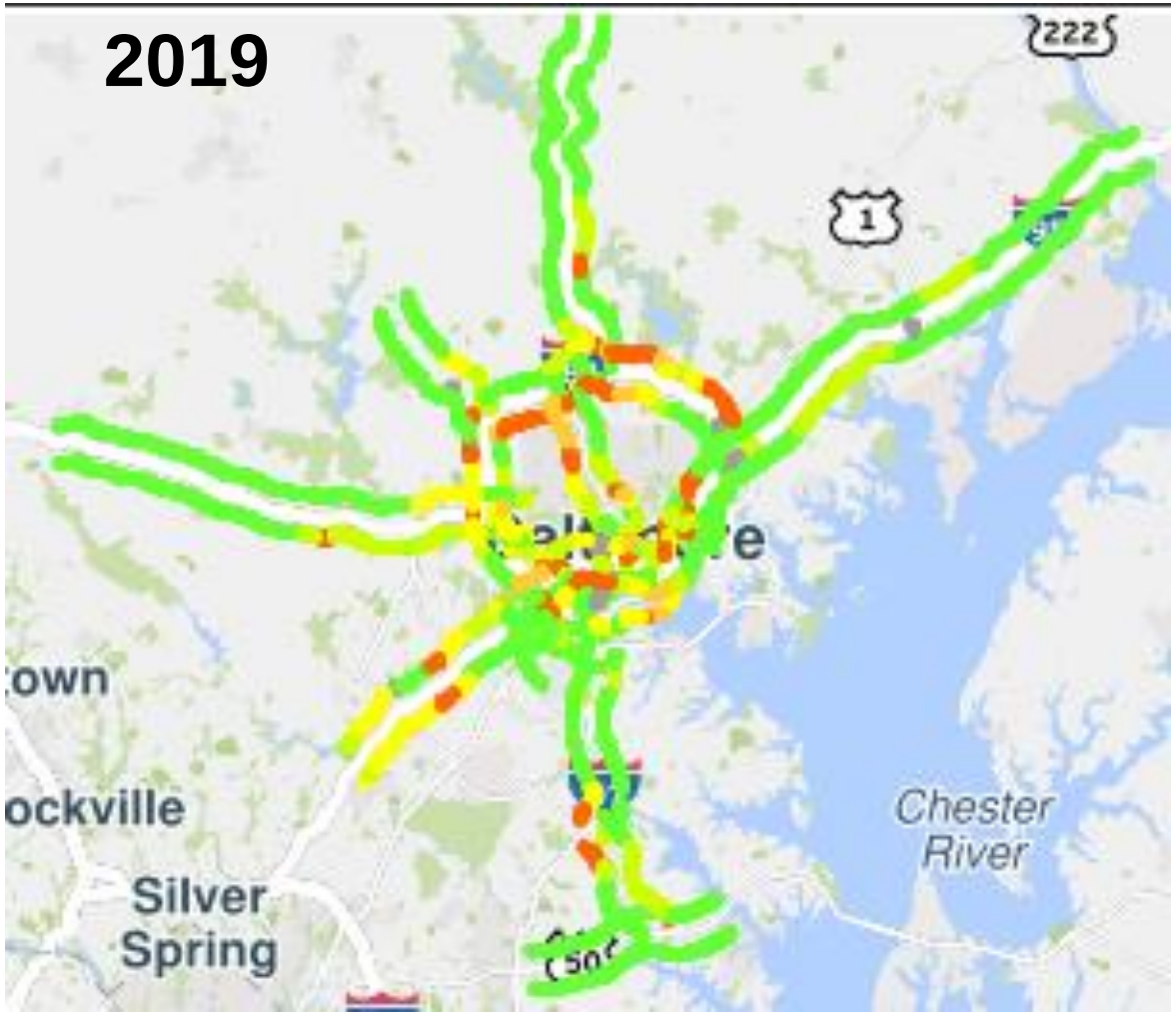
Truck Travel Time Reliability

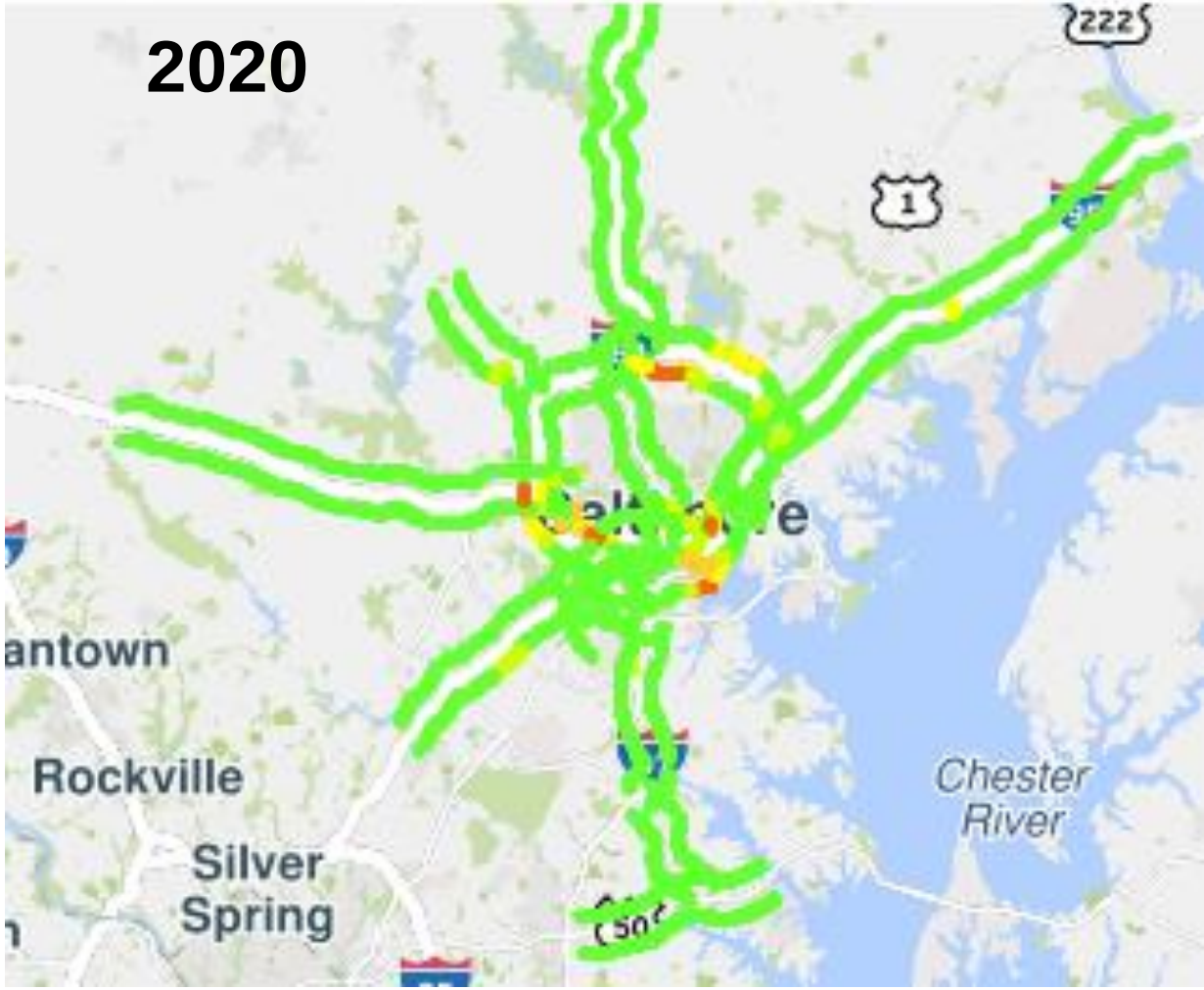




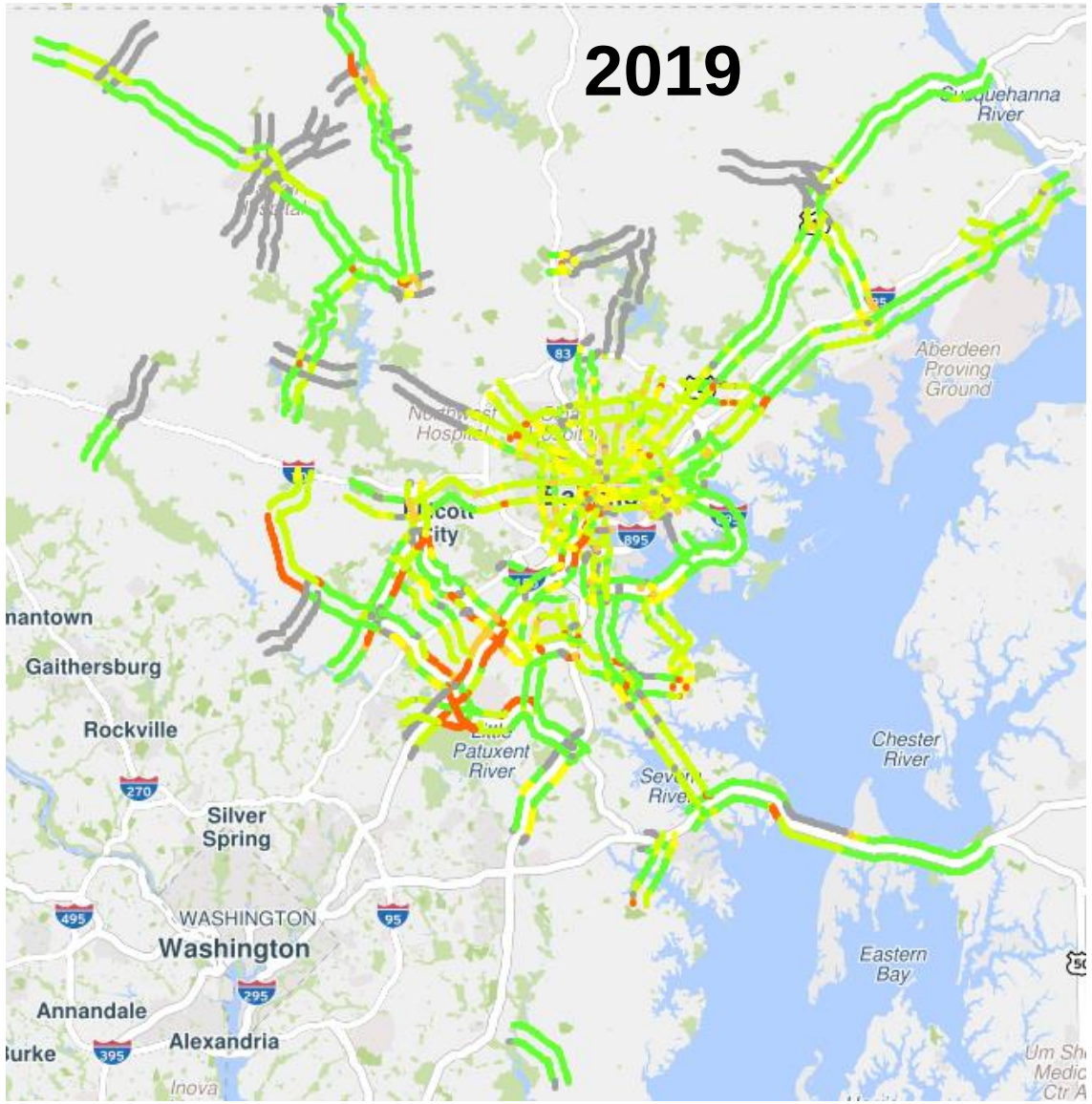


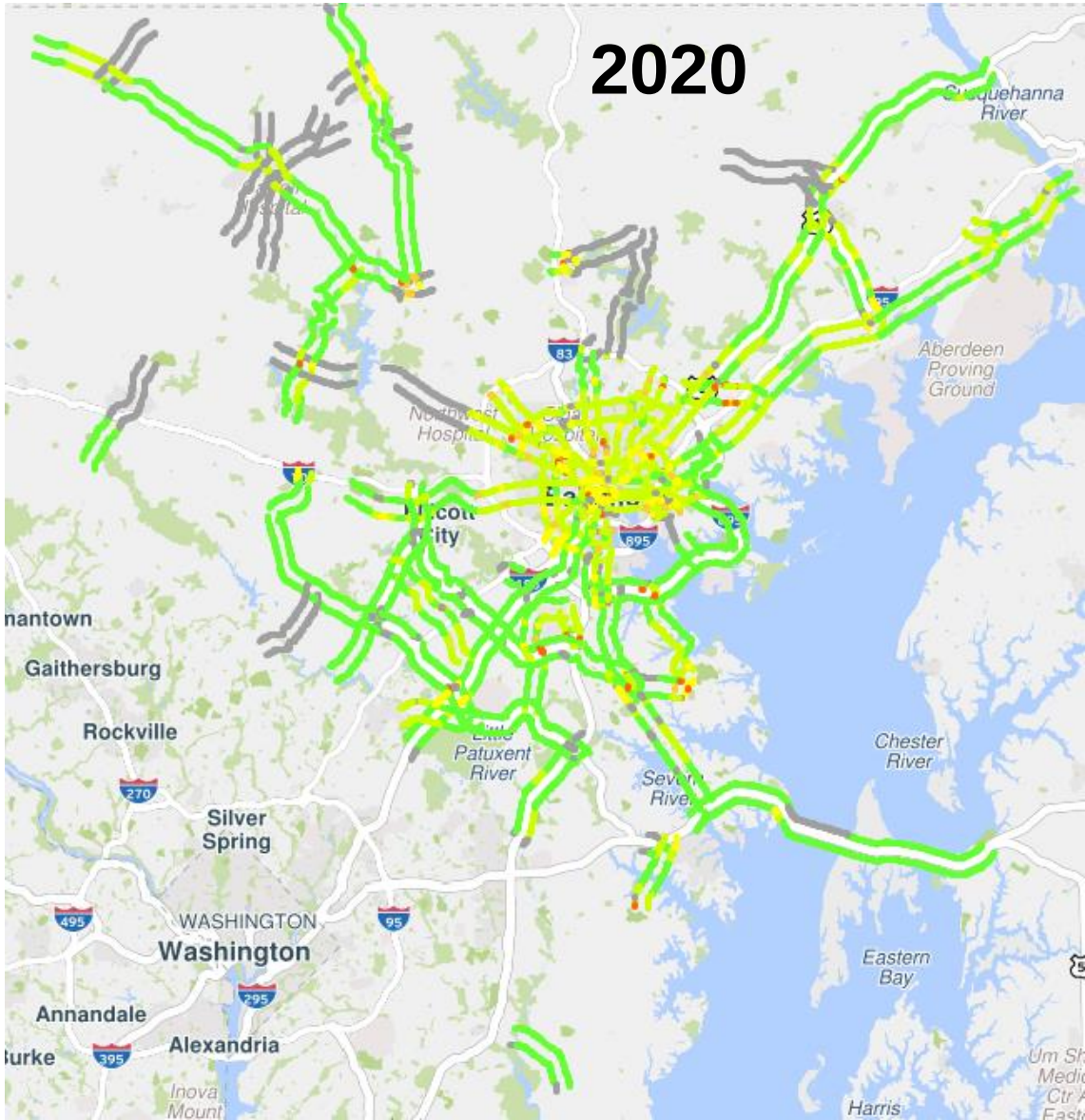
Interstate Reliable Percent Person Hrs Traveled



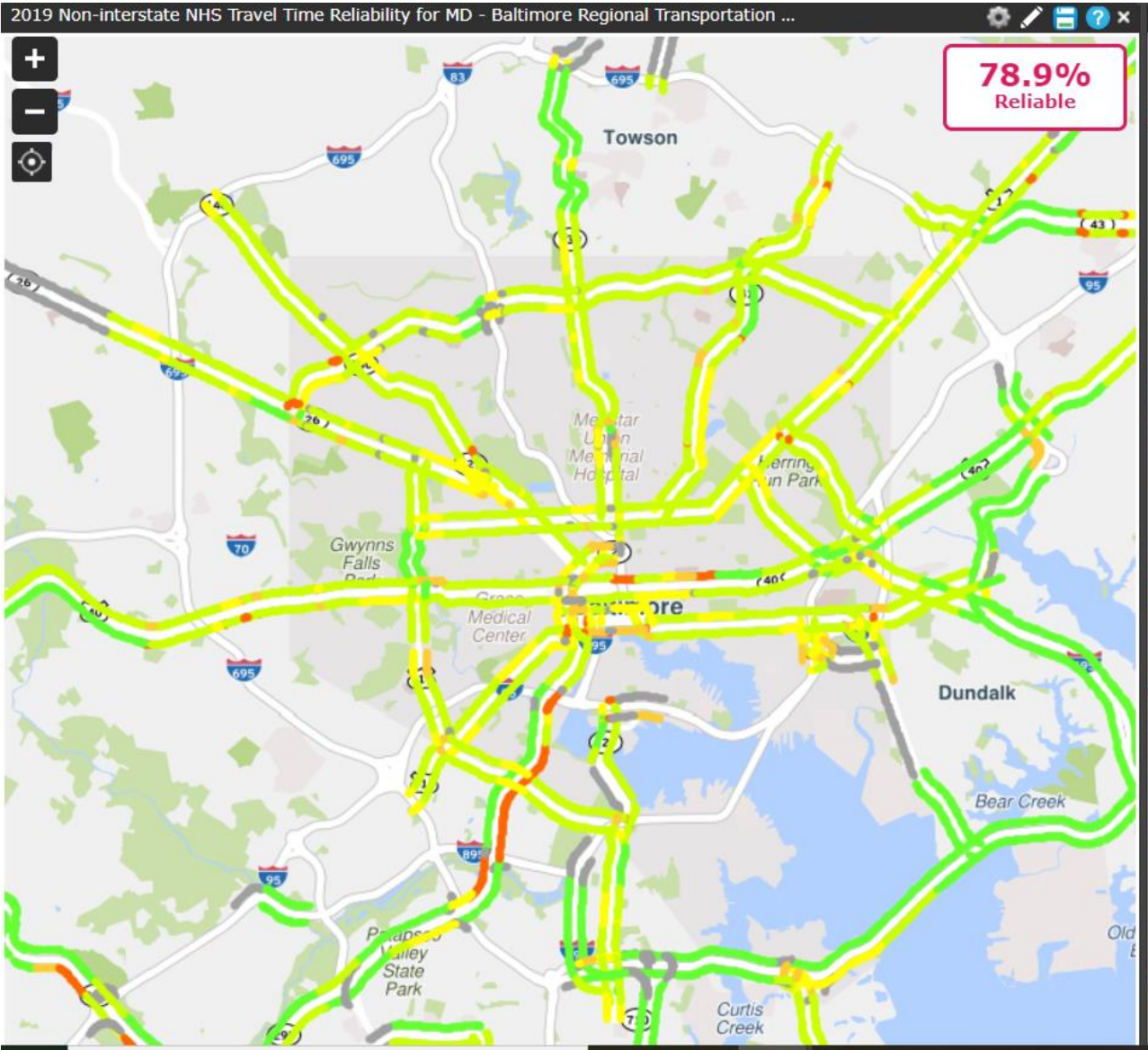


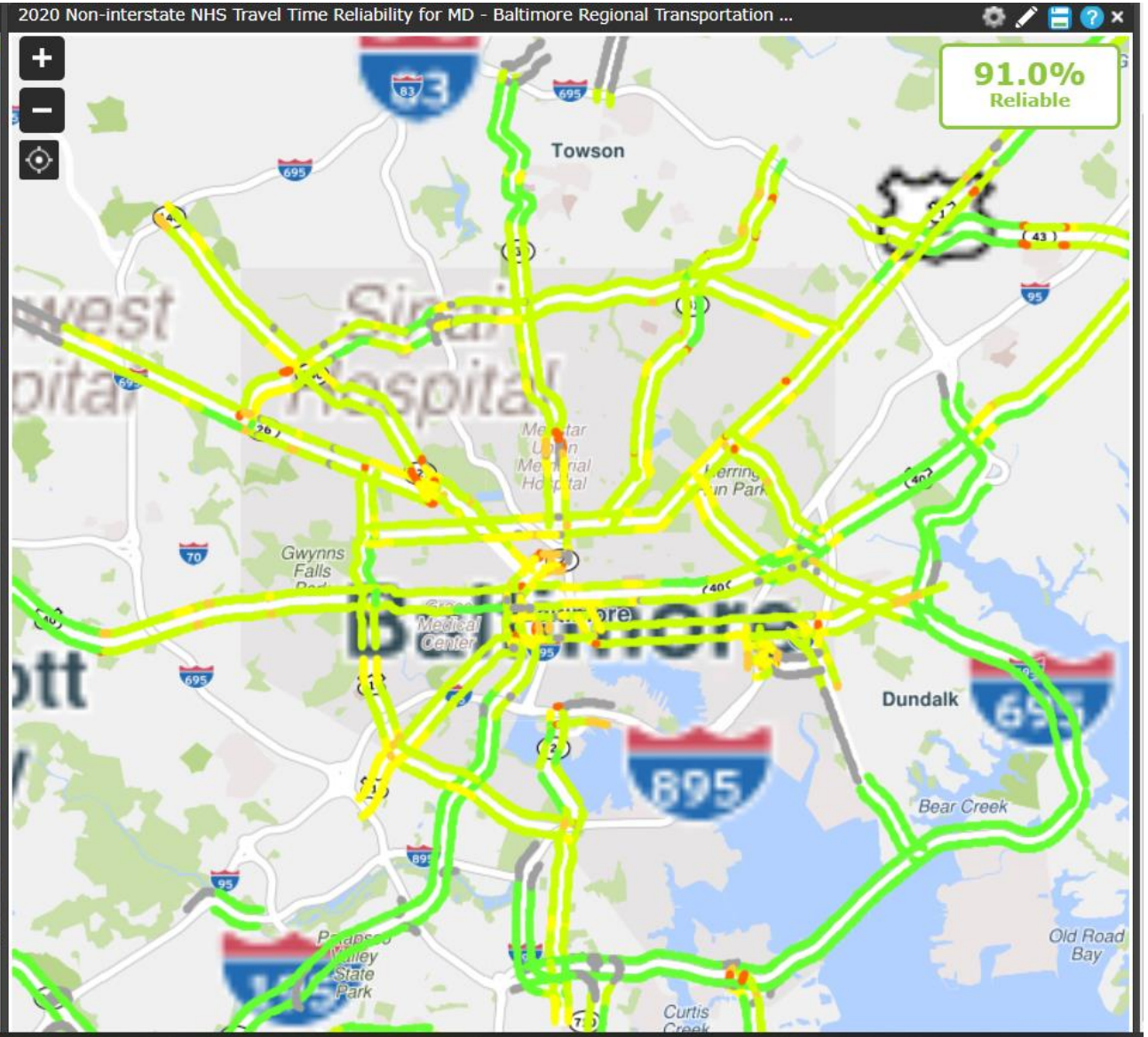
Non-interstate Reliable Percent Person Hrs Traveled





Non-interstate Reliable Percent Person Hrs Traveled





Other - Discussion

5. Identification of Regional Priority Congested Locations / Modes

- Reminder of Congestion Management Objectives

Recommendations: Process to Analyze Areas of Congestion and Associated Mobility Issues

- **Identify priority congested roadway corridors**

1. Identify top freeway and non-freeway bottlenecks
   - Rank the top 15 bottlenecks in each category (freeways and non-freeways) using an annual analysis of the data from the PDA Suite
2. Conduct additional analyses to characterize congestion issues
   - Whether the bottleneck appeared seasonally or across all quarters
   - Primary times of day of congestion
   - Ranking of bottleneck in terms of congestion from the individual driver's perspective
3. Identify travel options
   - Transit routes and frequencies
   - Bicycle network extent
   - Park and ride lot utilization
   - Other data as available (e.g., bus speeds)
4. Prepare corridor profile

Objective 1

Enhance access to jobs and other opportunities

Public Transportation

- Optimize Transit
- Real-Time Transit Data
- Transit Trip Planner
- Enhanced Transit-Supportive Infrastructure
- Universal Farecards
- Expand Transit Network
- Transit Priority Treatments
- Bus Rapid Transit
- Increase Transit Frequency/Service
- First/Last Mile Connections
- Ferry Boats

Bicycle / Pedestrian & Micro-mobility

- Bike Lanes
- Traffic Calming
- Pedestrian Infrastructure
- Streetscape
- Road Diets
- Expand Trail Network
- Bikeshare Program
- Electric Scooter Sharing
- Ride Sourcing Applications
- Microtransit
- Car Sharing
- Carpooling Applications
- Autonomous Vehicle Services

Land Use

- Land Use Controls
- Growth Management
- Transit-Oriented Developments
- High-Density Development Incentives
- Parking Management

Pricing

- Demand-Responsive Parking Pricing

TSMO

- One-Way/Two-Way Street Conversion
- Transit Signal Priority

Road Capacity

- Intersection Improvements
- Closing Network Gaps

Demand Management

- Employer Outreach Programs
- Commuter Benefits Policies
- Parking Cash Out Policies

Objective 2

Improve travel times and reduce traveler delay

Public Transportation

- Real-Time Transit Data
- Transit Trip Planner
- Bus Rapid Transit
- Transit Priority Treatments
- Ferry Boats

TSMO

- Incident Management
- Traffic Signal Coordination
- Adaptive Traffic Signals
- Adaptive Ramp Metering
- Active Traffic Management
- Reversible Commuter Lanes
- Access Management
- Moveable Median Barriers
- Electronic Toll Collection
- Hard Shoulder Running
- Restrict Intersection Movements
- Geometric Improvements
- One-Way/Two-Way Street Conversion
- Transit Signal Priority
- Traveler Information Systems
- Work Zone Management
- Road/Weather Information Systems
- Traffic Management for Special Events
- Off-Hours Delivery Programs
- Freight Management

Pricing

- Value/Congestion Pricing
- Demand-Responsive Parking Pricing
- VMT Fees

Road Capacity

- Spot Improvements
- Intersection Improvements
- Safety Improvements
- Operational Improvements
- New HOV or HOT Lanes
- Removing Bottlenecks
- Adding Turn Lanes
- Grade Separated Intersections
- Closing Network Gaps
- Add Travel Lanes

Objective 3

Improve travel times reliability

Public Transportation

- Real-Time Transit Data
- Transit Trip Planner
- Bus Rapid Transit
- Transit Priority Treatments
- Ferry Boats

TSMO

- Incident Management
- Traffic Signal Coordination
- Adaptive Traffic Signals
- Adaptive Ramp Metering
- Active Traffic Management
- Reversible Commuter Lanes
- Access Management
- Moveable Median Barriers
- Hard Shoulder Running
- Restrict Intersection Movements
- Geometric Improvements
- One-Way/Two-Way Street Conversion
- Transit Signal Priority
- Traveler Information Systems
- Work Zone Management
- Road/Weather Information Systems
- Traffic Management for Special Events
- Off-Hours Delivery Programs

Pricing

- Value/Congestion Pricing

Road Capacity

- Spot Improvements
- Intersection Improvements
- Safety Improvements
- Operational Improvements
- New HOV or HOT Lanes
- Removing Bottlenecks
- Adding Turn Lanes
- Grade Separated Intersections
- Closing Network Gaps
- Add Travel Lanes

Objective 4

Improve freight reliability

Road Capacity

- Freight Network Upgrades
- Freight Rail/ Port Capacity

TSMO

- Real-Time Truck Parking Information
- Truck Weigh Technology
- Freight Management
- Off-Hours Delivery Programs

Objective 7

Enhance inter-jurisdictional coordination

Demand Management

- Regional Coordination

Objective 5

Enhance travel choices

Land Use

- Land Use Controls
- Growth Management
- Transit-Oriented Developments
- High-Density Development Incentives
- Parking Management

Public Transportation

- Optimize Transit
- Real-Time Transit Data
- Transit Trip Planner
- Enhanced Transit-Supportive Infrastructure
- Universal Farecards
- Bus Rapid Transit
- Expand Transit Network
- Increase Transit Frequency/Service
- Transit Priority Treatments
- First/Last Mile Connections
- Ferry Boats

Demand Management

- Employer Outreach Programs
- Commuter Benefits Policies
- Parking Cash Out Policies

Pricing

- Demand-Responsive Parking Pricing

TSMO

- One-Way/Two-Way Street Conversion
- Transit Signal Priority

Bicycle / Pedestrian & Micro-mobility

- Bike Lanes
- Traffic Calming
- Pedestrian Infrastructure
- Streetscape
- Road Diets
- Expand Trail Network
- Bikeshare Program
- Electric Scooter Sharing
- Ride Sourcing Applications
- Microtransit
- Car Sharing
- Carpooling Applications
- Autonomous Vehicle Services

Road Capacity

- Intersection Improvements

Objective 6

Reduce traffic incidents

Bicycle / Pedestrian & Micro-mobility

- Bike Lanes
- Traffic Calming
- Pedestrian Infrastructure
- Streetscape
- Road Diets

Public Transportation

- Ferry Boats

Pricing

- Value/Congestion Pricing

Road Capacity

- Spot Improvements
- Intersection Improvements
- Freight Network Upgrades
- Safety Improvements
- Operational Improvements
- New HOV or HOT Lanes
- Removing Bottlenecks
- Adding Turn Lanes
- Grade Separated Intersections
- Closing Network Gaps
- Add Travel Lanes

TSMO

- Incident Management
- Traffic Signal Coordination
- Adaptive Traffic Signals
- Adaptive Ramp Metering
- Active Traffic Management
- Truck Weigh Technology
- Access Management
- Moveable Median Barriers
- Electronic Toll Collection
- Hard Shoulder Running
- Restrict Intersection Movements
- Geometric Improvements
- One-Way/Two-Way Street Conversion
- Traveler Information Systems
- Work Zone Management
- Road/Weather Information Systems
- Traffic Management for Special Events
- Off-Hours Delivery Programs

Discussion of Regional Priority Congested Locations / Modes

- Process for integrating regional priorities in CTP process
- Coordinating priority letter projects

6. Next Steps

- Identify a chair and vice chair for CMP Committee
- Next meeting – June 1, 2021

For More Information

Eileen Singleton| Principal Transportation Engineer

410-732-0500 x1033 | esingleton@baltometro.org | www.baltometro.org

@BALTOMETROCOUNCIL @BALTIMORE METROPOLITAN COUNCIL @BALTIMORE METROPOLITAN COUNCIL