BRTB

Moving People and Goods Safely and Efficiently

BALTIMORE METROPOLITAN COUNCIL


STATE LAW
STOP FOR
IN X-WALKS

Baltimore Regional Transportation Board

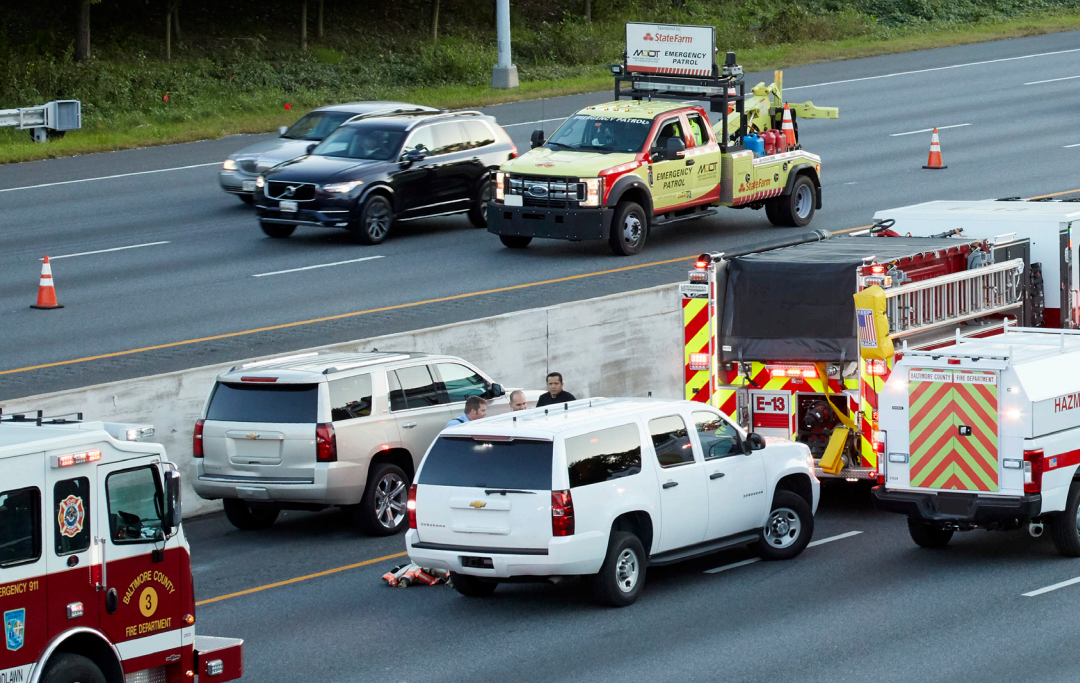
Moving people and goods safely and efficiently is one of the basic functions of a multimodal transportation system.

SAFETY

Staying safe while using the transportation system is a fundamental concern of everyone. Following a significant decrease in the number of traffic fatalities in the mid-1990s, Maryland and the Baltimore region have experienced increases in recent years. This upswing in traffic fatalities reinforces the importance of placing safety as a priority in designing and constructing transportation facilities.

With the federal emphasis on performance-based planning and programming, the BRTB has worked with the Maryland Department of Transportation (MDOT) to develop regional safety performance measures and targets for roadway and transit systems.

BALTIMORE METROPOLITAN COUNCIL



One set of these measures focuses on reducing fatalities and serious injuries on the region's roadways. As part of this effort, MDOT and BRTB are committed to the concept of "Toward Zero Deaths." The goal is to eventually reach zero deaths on roadways throughout the state and the region. Consistent with this goal, MDOT and the BRTB are working to reduce fatalities in the region by half from 2008 to 2030.

BALTIMORE REGION	TOWARD ZERO DEATHS (TZD) DATA
2008 Baseline	242 Fatalities
2030 TZD Target	121 Fatalities

On the local level, the Maryland Department of Transportation Motor Vehicle Administration's Highway Safety Office (MDOT MHSO) and the BRTB are collaborating to develop local strategic highway safety plans to address the unique environments and concerns in each jurisdiction. These plans will help to guide safety improvements locally.

Another area of emphasis is reducing fatalities and injuries on the region's transit facilities. The BRTB is coordinating with the Maryland Transit Administration (MDOT MTA) to develop performance targets for these transit safety measures.

MOBILITY

"Mobility" refers to traveling from Point A to Point B as efficiently and reliably as possible. For example, commuters need to be able to reach their places of employment on time every workday. Commutes made more difficult or less reliable because of transit transfers or traffic congestion can cause frustration or possibly, in extreme situations, loss of employment.

Another example: the efficient movement of freight, both within and through a region and between modes, is a vital element of the region's economy. Many businesses maintain smaller inventories and rely on "just-in-time" deliveries of materials and goods. Anything that complicates or slows the movement of freight slows the delivery of materials and goods to consumers and businesses.


EXIT 91B
NORTH TO NORTH
695 95
New York
Towson
EXIT 91A
SOUTH TO SOUTH
695 95
Baltimore
Glen Burnie
EXIT ONLY

Identifying and Implementing Strategies to Reduce Traffic Congestion

Reducing traffic congestion is a major concern of metropolitan regions, and the Baltimore region is no exception. Federal law requires all metropolitan areas with populations greater than 200,000 to have a Congestion Management Process (CMP). The goal of the CMP is to reduce traffic congestion and increase safety, mobility, and reliability. An effective CMP identifies and analyzes a wide array of congestion management strategies. These can include:

- Managing the demand for travel (for example, by promoting alternatives to single-occupant vehicle travel and by improving bicycle and pedestrian facilities).
- Managing transportation system supply and improving operations through such activities as providing real-time information for transit and roads, implementing signal priority for transit vehicles, and optimizing and coordinating traffic signals.
- Constructing new capacity (for example, expanding transit service, building reserved lanes for transit, and adding new lanes and extending roads).

In coordination with MDOT, the BRTB and BMC staff have placed greater emphasis on strategies that reduce travel demand and improve operational efficiency in recent years. These strategies are typically lower-cost and quicker to implement than higher-cost/longer lead-time strategies that build capacity (such as construction of new lanes).

TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSMO)

Strategies focused on improving operational efficiency are referred to as Transportation Systems Management and Operations (TSMO) activities. A TSMO approach uses technology and enhanced agency coordination to find ways to operate the transportation system more safely, reliably, and efficiently. Working with state and jurisdictional partners, the BRTB, through BMC Staff, applies this approach to analyze traffic and assess conditions on individual roads and along corridors. This helps to measure the effectiveness of recent capacity and operational improvements and to suggest additional improvements.

PERFORMANCE MEASURES TO MONITOR TRAVEL TIME RELIABILITY

As part of the federally mandated performance-based planning and programming approach, the BRTB has worked with MDOT to develop regional performance measures related to travel time reliability. This refers to the time it takes for traffic to travel along a segment of roadway under congested conditions compared to the time it takes to travel along the same segment under normal conditions. The BRTB has established regional performance measures for travel time reliability for both general and truck traffic.

The BRTB, through BMC staff, will continue to work with MDOT SHA and MDOT MTA to update performance targets in accordance with federal requirements and to refine the processes for gathering data for performance measures.


HUMMER

FREIGHT MOVEMENT

The greater Baltimore region is Maryland's leading goods movement center. Each year, more than 307 million tons of freight valued at nearly $1 trillion move over Baltimore's highway, rail, port, and airport facilities, serving domestic and international demand for a wide range of goods.

MDOT estimates that freight on the region's transportation system will nearly double by 2030 compared to a baseline year of 2015, with significant percentage increases across the modes and the largest volume increase in truck tonnage.

Given current levels of congestion, the doubling of freight traffic on the region's infrastructure will create additional challenges for both freight movement and travel in general. Other trends

307 MILLION TONS OF FREIGHT VALUED AT $ ONE TRILLION

and challenges include the need to enhance highway safety, a need for improved intermodal connections, the security of goods movement, and lack of sufficient truck parking.

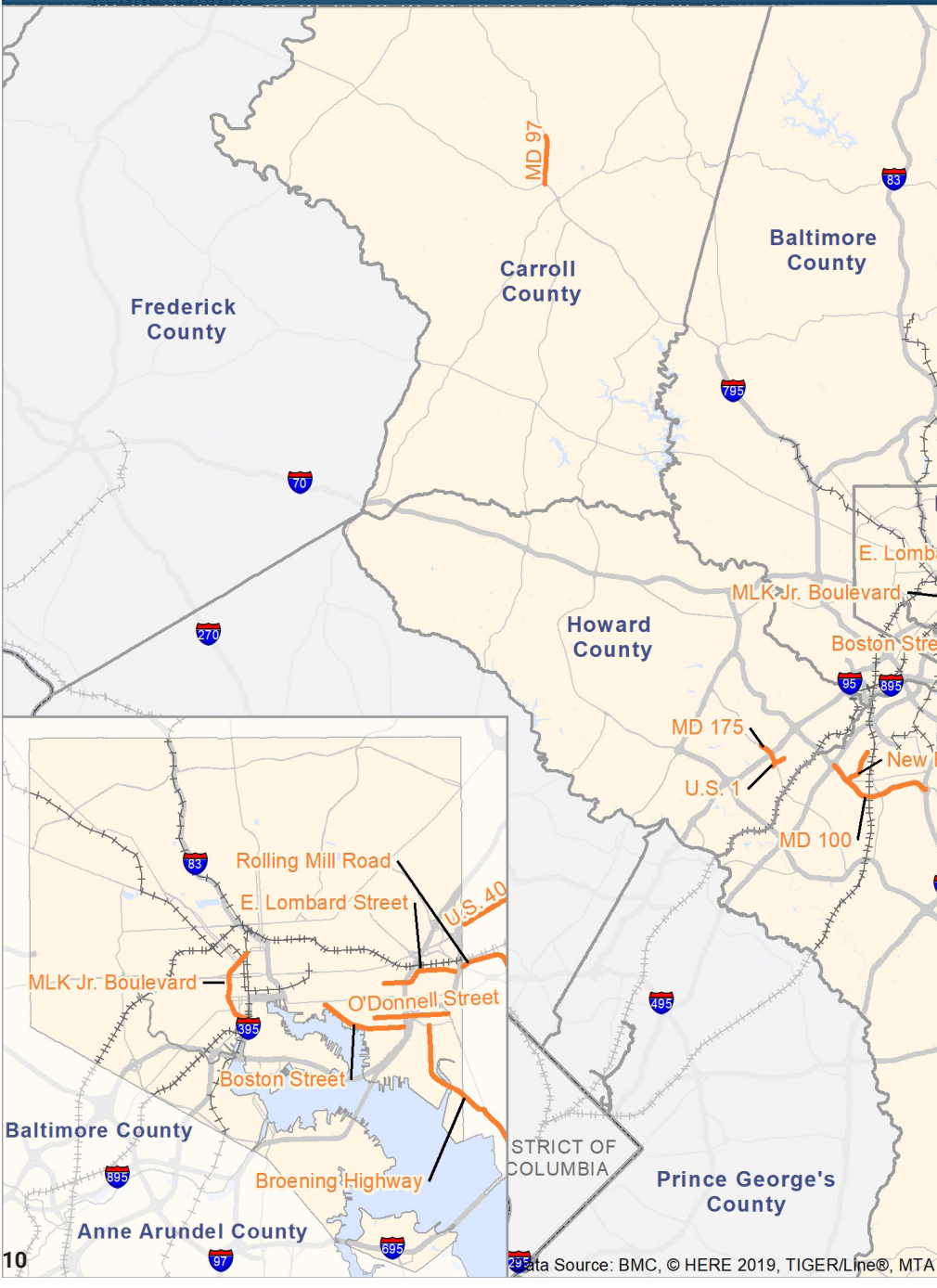
The National Highway Freight Program, established in 2015, provides dedicated funding for planning, engineering, and construction activities that contribute to the efficient movement of freight on the National Highway Freight Network (NHFN). Critical Urban Freight Corridors (CUFCs) are one component of the NHFN. In coordination with MDOT, the BRTB designated 25 miles of roadways in the Baltimore region as CUFCs in 2017. These CUFCs will be evaluated every two to three years and revised as needed.

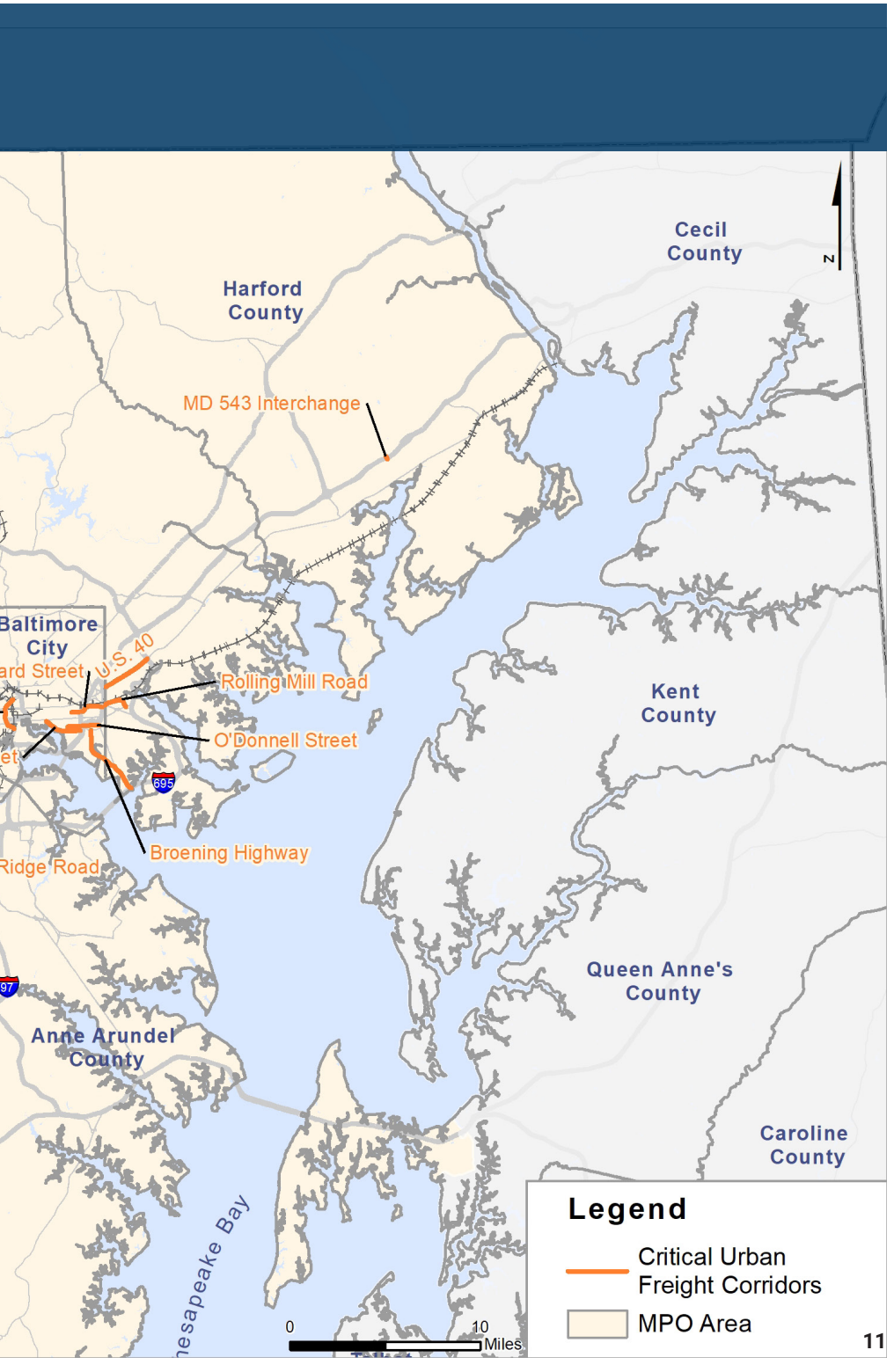
MOVE OVER

HIGHWAY RAIL PORT AIRPORT

SERVING DOMESTIC & INTERNATIONAL DEMAND

Critical Urban Freight Corridors in the Baltimore Region

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Ridge Road
Kent
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Queen Anne's
County
Anne Arundel
County
Caroline
County
Chesapeake Bay
0
10
Miles
Legend
Critical Urban
Freight Corridors
MPO Area

EMERGING TECHNOLOGIES

The rapid development and deployment of emerging technologies is affecting all parts of our lives, especially how we get around and how freight moves within and through the region. These technologies include:

CONNECTED VEHICLE (CV) AND AUTONOMOUS VEHICLE (AV) TECHNOLOGY

CVs have communications technology that enables them to share data with other vehicles and roadside infrastructure. AVs use sensors, cameras, and GPS to enable operation with minimal or no human interaction.

ELECTRIFICATION OF VEHICLES (EVs)

Vehicle electrification is expected to improve the efficiency of AVs. Maryland expects to see registration of approximately 300,000 EVs by 2025, and nearly 1.5 million EVs by 2040.

BIG DATA AND ARTIFICIAL INTELLIGENCE (AI)

Improvements in manipulating, analyzing, and learning from very large and diverse data sets (Big Data), improvements in connectivity, and machine learning have enabled significant advancements in transportation services.

SHARED MOBILITY/MOBILITY-AS-A-SERVICE (MaaS)

MaaS is the integration of various forms of transport services into a single mobility service accessible on demand. Such services can offer a diverse menu of transport options such as public transport, ride sharing and car sharing/hailing, bike sharing, E-scooters, taxi (land and water), or car rental/lease.

3D PRINTING AND IMPROVEMENTS TO BUILDING MATERIALS

Changes in 3D printing and building material technology are expected to affect all aspects of transportation: planning, maintenance and operations, capital development and finance, and human resources and legal issues.

UNMANNED AERIAL SYSTEMS (UAS OR "DRONES")

Aircraft outfitted with sensors such as cameras and Light Detection and Ranging (LiDAR) that are controlled by a licensed operator on the ground.

UNDERGROUND TUBE TRANSPORT SYSTEMS

One example would involve autonomous electric "skates" traveling underground through tubes at 125-150 miles per hour. Such a system could carry between 8 and 16 passengers, or a single passenger vehicle. Another example using a somewhat related technology would move passenger and/or freight traffic in a pressurized/sealed tube or system of tubes. This system would convey people or objects at high speed via pods traveling free of air resistance or friction.

As use of these emerging technologies becomes more widespread, the BRTB, working through BMC staff and in coordination with MDOT, will continue to monitor potential risks and effects and to identify action steps.

BALTIMORE METROPOLITAN COUNCIL

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