MARYLAND DEPARTMENT OF TRANSPORTATION

Implementing the Maryland Transportation Plan and Consolidated Transportation Program

2020 Annual Attainment Report

On Transportation System Performance

/ Larry Hogan, Governor
/ Boyd K. Rutherford, Lt Governor
/ Gregory Slater, Acting Transportation Secretary

LARRY HOGAN
Governor

Maryland's world class transportation system is critical to the economy. The performance of our State's transportation system is increasingly important to the quality of life of our citizens. Facilitating the movement of people and the flow of goods through our State directly impacts our ability to connect our citizens to life's opportunities. This is critical, whether it is through the ships from around the world calling in at the Helen Bentley Port of Baltimore, travelers coming and going at the Baltimore Washington International (BWI) Thurgood Marshall Airport, riders on our transit system or drivers, riders, pedestrians, and bicyclists who travel on our roadways.

Our administration continues to deliver transportation projects and solutions, which have improved our roads, bridges, transit systems, airports, and the Port of Baltimore. The Maryland Department of Transportation (MDOT) is making the most of every dollar and is delivering once in a generation projects on an accelerated timeline. Our balanced program of transportation investments has included key projects and initiatives like the historic I-495 and I-270 Managed Lanes Public-Private Partnership Program, which will now include the American Legion Bridge, toll modernization, the CHARM Pass app, the investments and improvements to the Howard Street Tunnel, and the Purple Line construction underway in Prince George's and Montgomery Counties. To accommodate larger ships, we are building a second 50-foot-deep container berth at the Port, which will support the continued record growth in cargo at the Port of Baltimore, and five new gates at Concourse A at the BWI Marshall Airport, which has seen record growth. We continue to focus on our customers' experiences concentrating on projects like our Motor Vehicle Administration's Customer Service Initiative, which reduces wait times at our facilities, improves our delivery options through the internet and kiosks, and extends our branch hours to accommodate Real ID appointments for Maryland citizens.

We recognize the valuable contribution transportation makes to our State. When people can get to where they need to go and receive the goods and services they need efficiently and effectively, their quality of life increases. By measuring our progress, we will continue to be a leader in transportation performance, and define ways to move forward in the future.

GREGORY SLATER
Acting Transportation Secretary

The Maryland Department of Transportation (MDOT) is moving millions of people, goods, and services each day by land, air, and sea. Maryland's transportation system provides an essential link in moving millions of people, goods, and services where they need to go safely and efficiently. With a dedicated workforce of more than 11,000, MDOT is meeting our mission to be "a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities."

Each year, MDOT produces this Attainment Report detailing how well we are doing in meeting our seven key goals: Ensuring a Safe, Secure, and Resilient Transportation System; Maintaining a High Standard and Modernizing Maryland's Multimodal Transportation System; Improving the Quality and Efficiency of the Transportation System to Enhance the Customer Experience; Providing Better Transportation Choices and Connections; Facilitating Economic Opportunity and Reducing Congestion in Maryland through Strategic System Expansion; Ensuring Environmental Protection and Sensitivity; and Promoting Fiscal Responsibility. Each of these goal areas is vital to Maryland's ability to be competitive in the global economy and attract businesses and individuals who want to set down roots in our state.

To maintain the highest standards that our customers expect, we must understand where we are succeeding and where extra effort is needed. The Attainment Report provides us with the performance measure information we need to make those decisions. The annual Consolidated Transportation Program (CTP) outlines where MDOT will be making investments in the coming years on our roads and highways, at the Port of Baltimore, in our transit systems, at BWI Marshall Airport and Martin State Airport, and all the various facilities that see thousands of people each day. The Attainment Report lets us know the success of those investments and where we can continue to improve, because we want to ensure our dollars are having the greatest impact in improving the lives of Marylanders.

We have an excellent team and are committed to getting the most out of every taxpayer dollar we spend. MDOT is delivering a record construction program in record time and will continue to deliver for its customers through innovation, teamwork, accountability, and enhanced communication. I invite you to review this Attainment Report and welcome your feedback. Our Department will continue to work hard every day to meet and exceed your transportation needs and expectations.

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ONE MDOT – INTEGRATING MULTIMODAL TRANSPORTATION

The Maryland Department of Transportation (MDOT) has a unique ability to deliver an expansive and integrated multimodal transportation system that provides a superior experience to the people and businesses it serves. MDOT houses all of the State's transportation agencies in one organization, enabling an integrated approach to planning and investment that results in seamless connectivity between the State's Highways, toll facilities, transit, airports, ports, and motor vehicle and driver services.

This organization is ONE MDOT instead of six separate entities; one Department with each of the nearly 11,000 employees working together towards the mission of ensuring MDOT is "a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions to connect our customers to life's opportunities." The MDOT Secretary serves as Chairman of the Maryland Transportation Authority (MDTA), which owns, operates, and maintains the State's eight toll facilities. While the Washington Metropolitan Area Transit Authority (WMATA) is not part of MDOT, the Governor appoints two Maryland WMATA Board members, one of which being the Secretary, and MDOT staff work closely with those appointees and the other Board members to ensure efficient and effective transit services in the metropolitan Washington region.

MARYLAND TRANSPORTATION BUSINESS UNITS (TBU)

ACRONYM	BUSINESS UNIT
MDOT TSO	The Secretary's Office
MDOT MAA	Maryland Aviation Administration
MDOT MPA	Maryland Port Administration
MDOT MTA	Maryland Transit Administration
MDTA	Maryland Transportation Authority
MDOT MVA	Motor Vehicle Administration
MDOT SHA	State Highway Administration
The State of Maryland also supports:	
WMATA	Washington Metropolitan Area Transit Authority

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GOAL: ENSURE A SAFE, SECURE, AND RESILIENT TRANSPORTATION SYSTEM

- MDOT SHA is releasing a draft Context Driven - Access and Mobility For All Users guide that enables flexibility in design solutions to address issues of safety and accessibility for pedestrians and non-motorized users while still considering vehicle movement.
- MDOT MVA debuted a pilot program to test the Driver Alcohol Detection System for Safety; this system automatically analyzes the breath for alcohol and, if the driver is found to be above the legal limit, prevents the vehicle from moving. Maryland is the first state to pilot this system in fleet vehicles and the National Highway Traffic Safety Administration (NHTSA) estimates that it will reduce drunk driving deaths by as much as 60%.
- MDOT MTA maintained its ranking in 2019 as the safest transit system of the top 12 U.S. transit agencies for the fifth year in a row.
- During winter events, MDOT SHA and MDTA were able to clear the roads on primary and interstate highways in fewer than four hours, on average, for the past nine winter seasons.
- BWI Marshall Airport, for the second year in a row, successfully completed the Federal Aviation Administration's (FAA) annual Airport Safety and Certification Inspection with zero repeat discrepancies highlighting MDOT MAA's focus on safety, security, system preservation, and improving customer amenities.
- MDOT MVA's work with REAL ID resulted in Maryland being the first state in the nation to be recertified by the Department of Homeland Security for REAL ID compliance; 418,000 customers have been served since January and more than half of Marylanders are Real ID compliant.
- Consistent with national trends, pedestrian fatalities are increasing as a percentage of all vehicle crash statistics. Pedestrians account for 21% of all reported roadway fatalities, based on 2013-2017 averages.

GOAL: FACILITATE ECONOMIC OPPORTUNITY AND REDUCE CONGESTION IN MARYLAND THROUGH STRATEGIC SYSTEM EXPANSION

- MDOT has been approved for $125 million in federal funds for improvements to the Howard Street Tunnel in Baltimore. This project will facilitate more efficient transport of freight in Maryland.
- MDOT SHA is using Smart Traffic Signals to monitor real-time traffic conditions, dynamically adjust the timing of traffic signals, and synchronize the corridors to keep traffic moving.
- The Port of Baltimore finished first for automobiles, sugar, gypsum, and heavy roll on/roll off machinery and ranks ninth among all U.S. ports for dollar value of foreign cargo with $59.7 billion in 2018 and 11th for total foreign cargo tonnage with 43.0 million tons.
- Over the past four years MDOT has completed 1,069 infrastructure projects worth nearly $5.9 billion; MDOT is continuing this investment with 718 projects currently underway worth $7.2 billion.
- MDOT MAA completed construction of expanded Midfield Cargo Complex to accommodate growth in cargo activity at BWI Marshall Airport.

GOAL: MAINTAIN A HIGH STANDARD AND MODERNIZE MARYLAND'S MULTIMODAL TRANSPORTATION SYSTEM

- MDOT SHA improved or treated 65% of all State Highway lane miles since the beginning of FY 2015, spending $215.0 million of system preservation funds in FY 2019 alone.
- MDOT SHA reported 52 poor rated bridges to the Federal Highway Administration (FHWA) on March 15, 2019; all of these bridges are in the process of being addressed. Six of those bridges have just recently been constructed and are now open to traffic, 30 under construction, and 16 in design and funded for construction.
- In CY 2019, 87.2% of the MDOT SHA highway network was in overall preferred maintenance condition and in CY 2018, 89% of the MDOT SHA and MDTA roadway network was in overall acceptable pavement condition.
- MDOT MTA will continue to purchase 70 new buses each year under a $211.0 million five-year contract to ensure fleet continuity through 2024.

GOAL: IMPROVE THE QUALITY AND EFFICIENCY OF THE TRANSPORTATION SYSTEM TO ENHANCE THE CUSTOMER EXPERIENCE

- MDOT MTA launched its CharmPass mobile ticketing app for all Local Bus, Metro SubwayLink, Light RailLink, MARC Train, and Commuter Bus services. The app was downloaded by more than 147,000 users, purchasing a total of more than one million trips in its first 10 months. Electronic and mobile fare payment allowed for the creation of a 90-minute free transfer policy and use of employer-sponsored transit benefits within the app. MDOT MTA continues to provide real-time tracking on the Transit mobile app.
- MDTA has implemented cashless tolling on both the Hatem Bridge and the Key Bridge; cashless tolling has been implemented during certain periods on the Bay Bridge as well, to help ease congestion.
- In 2020, MDOT MVA will launch Customer Connect, a program allowing MDOT to deliver more services and complete more online transactions safely, efficiently, and accurately.
- The new Checkpoint Wait Times system at BWI Marshall Airport uses sensors to calculate the number of passengers in line at each Transportation Security Administration (TSA) security checkpoint. Wait time durations are displayed on the digital signs at each checkpoint and on the BWI Marshall Airport website to assist customers in getting to gates as quickly as possible. MDOT MAA also installed a new comprehensive monitoring and reporting program for aircraft flight track data and aircraft noise event measurements at BWI Marshall Airport.
- MDOT MVA continues to improve customer service and wait times by extending Thursday hours until 6:30 p.m. at all locations and extending Saturday hours until 4:30 p.m. at nine locations.
- In June 2019, the Board of Public Works approved the designation of the I-495 and I-270 Public-Private Partnership (P3) Program as a public-private partnership. This designation is the first step in delivering the P3 Program and relieving the significant congestion in the National Capital Region.

GOAL: ENSURE ENVIRONMENTAL PROTECTION AND SENSITIVITY

- MDOT MTA published its first-ever Sustainability Plan in 2018 and continues to update the plan annually. A Total Maximum Daily Load (TMDL) Feasibility Study was also completed and a stormwater plan is under development. Bio-filters and stormwater collection ponds were installed, or are in design, for MDOT MTA's Monocacy, Dorsey, White Marsh, Severna Park, and Warren Road facilities.
- MDOT partnered with several regional organizations, such as the Metropolitan Washington Council of Governments (MWCOG) and the Baltimore Metropolitan Council (BMC), to update emission-reduction strategies.
- MDOT will contribute $4.0 million for installation of "smart pond" technology in 2020 at existing stormwater management sites on privately owned land as a part of a P3 benefiting the Chesapeake Bay.

GOAL: PROMOTE FISCAL RESPONSIBILITY

- The MDTA toll modernization plan will save Marylanders more than $28.0 million over five years and will be the third round of toll relief resulting in cumulative savings of $344.0 million.
- MDTA's third generation tolling system will upgrade toll-collection software and hardware with the latest technology and will modernize related customer service.
- MDOT MAA's new agreement with 15 signatory airlines will result in over $1.2 billion in revenues to the airport and nearly $800.0 million in capital projects; efforts to expand cargo operations resulted in growth of over 80% at BWI Marshall Airport over the past five years.
- MDOT SHA's Coordinated Highways Action Response Team (CHART) incident management program saved drivers $1.312 billion in delay costs in CY 2018.

GOAL: PROVIDE BETTER TRANSPORTATION CHOICES AND CONNECTIONS

- BaltimoreLink increased transit connectivity in the Baltimore region, allowing MDOT MTA to provide increased service to several centers of employment throughout the region including new bus routes to Port Covington and Trade Point Atlantic, connecting both centers of employment to the larger metropolitan area. The existing CityLink Yellow route was extended to Relay to accommodate shift workers commuting to new job opportunities in the region.
- MDOT MTA is leading development of a Regional Transit Plan for Central Maryland to develop a shared vision for transit in the region over the next 25 years.
- MDOT is working with local partners across the State to deliver bicycle and pedestrian projects using Transportation Alternatives, Recreation Trails, and Bikeways grant programs. In FY 2020 these grant programs funded $8.7 million in projects, which will improve safety and access for people walking and biking.
- The first section of the Purple Line rail has been laid. The Purple Line will connect New Carrollton to Bethesda with 16 miles of east-west rail and over 21 stations.

INTRODUCTION

Guiding Maryland's Transportation System

Planning, investing in, and evaluating the Maryland transportation system helps MDOT provide balanced, reliable, safe, and well-managed transportation options to connect customers to key destinations and facilitate continued economic growth. Maryland's strategic approach is presented through the State Report on Transportation (SRT), which is made up of three documents: (1) the Maryland Transportation Plan (MTP) sets a vision for the transportation system; (2) the annual Consolidated Transportation Program (CTP) presents the six-year budget for Maryland transportation projects; and (3) the Attainment Report on Transportation System Performance (AR), evaluates and annually reports on the performance of Maryland's transportation system, with a focus on the goals adopted in the MTP. MDOT also evaluates its performance quarterly through the MDOT Excellerator performance management system to ensure the Department is delivering on its commitments to its customers and adapting as needed throughout the year to improve decision-making and performance.

For more information in the FY 2020-FY 2025 CTP, please visit: **www.CTP.maryland.gov**.

Progress towards achieving MDOT's goals and objectives is assessed through the use of performance measures and data, corresponding to each of the seven goals of the MTP. The AR also provides an overview of the Maryland transportation system, system investment, mobility, and accessibility. Both the AR performance measures and the MTP were recently updated. The AR performance measures, updated every five years with an AR Advisory Committee, were updated in the spring of 2018. The MTP was updated in 2018 and reflects MDOT's 20-year horizon, mission, and goals.

Connecting You to Life's Opportunities

MTP GOALS

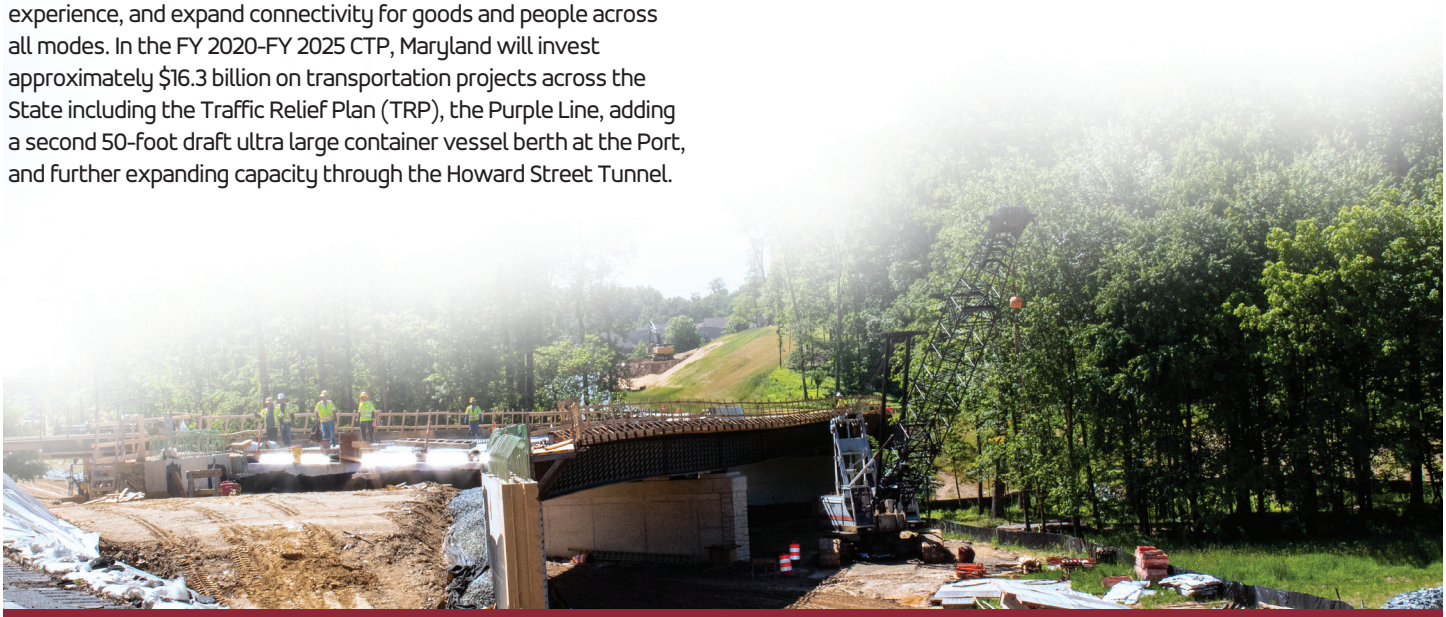
- Ensure a **safe, secure, and resilient** transportation system
- Facilitate **economic opportunity and reduce congestion** in Maryland through strategic system expansion
- Maintain a **high standard and modernize** Maryland's Multimodal Transportation System
- Improve the **quality and efficiency** of the transportation system to enhance the customer experience
- Ensure **environmental protection and sensitivity**
- Promote **fiscal responsibility**
- Provide better transportation **choices and connections**

MARYLAND'S INVESTMENT IN TRANSPORTATION

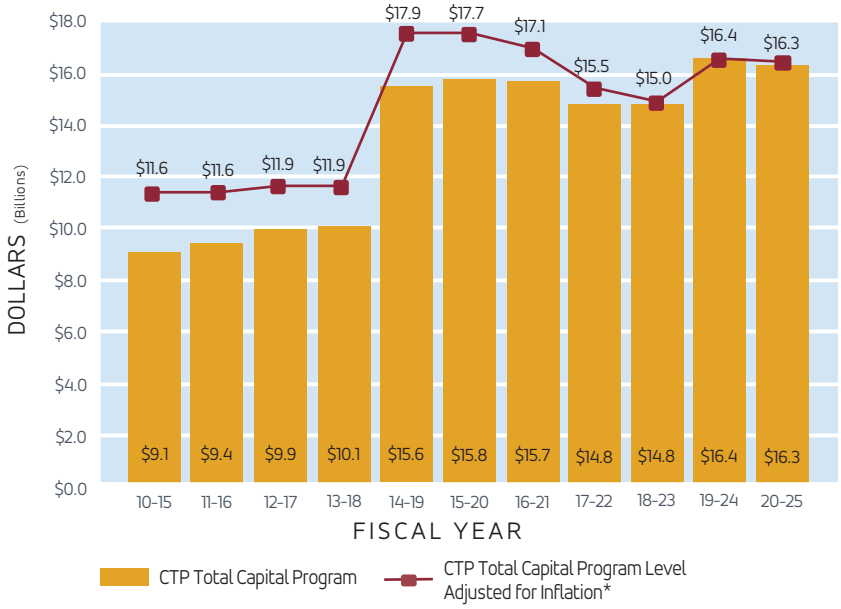
The Maryland Transportation Trust Fund (TTF), MDOT's non-lapsing dedicated fund, provides the majority of funding invested in the Maryland transportation system. Motor vehicle fuel taxes, vehicle titling taxes, motor vehicle fees, corporate income taxes, sales and use taxes, operating revenues, bond proceeds, federal sources, and minor sources filter funds into the TTF. MDOT seeks to offset funds when possible by pursuing Public-Private Partnerships (P3s) for major, innovative projects and minor projects alike. The $5.6 billion Purple Line, $9-11 billion I-495 and I-270 P3 Program, and the relationship between the Port of Baltimore and Ports America Chesapeake are three active P3s.

MDOT looks to reduce congestion, improve safety, provide more and improved non-motorized and transit options, improve customer experience, and expand connectivity for goods and people across all modes. In the FY 2020-FY 2025 CTP, Maryland will invest approximately $16.3 billion on transportation projects across the State including the Traffic Relief Plan (TRP), the Purple Line, adding a second 50-foot draft ultra large container vessel berth at the Port, and further expanding capacity through the Howard Street Tunnel.

In the FY 2020-FY 2025 CTP, MDOT also allocates $1,141.1 billion in system preservation projects for FY 2020, of which $708.6 million will go towards completing MDOT SHA safety, congestion relief, highway, and bridge projects, a slight increase compared with the FY 2019 $704.8 million program for these projects.



MDOT TOTAL CAPITAL PROGRAM LEVELS (BILLIONS)**



* The inflation adjusted amounts are calculated using the Construction Cost Index, which measures the average change in construction costs.

**Index numbers have changed to reflect use of the Construction Cost Index.

TRANSPORTATION MOBILITY AND ACCESSIBILITY

Maryland's transportation network must constantly adapt to a changing world and prepare itself for future demographic, technological, and climate shifts. The State currently has the second highest commuting times in the nation, and the National Capital Region is among the regions with the worst congestion in the country. Between 2010 and 2018, the State population grew by nearly 4.4%, and the U.S. Census estimates that the population will increase by 12.5% between 2018 and 2040. With this continued population growth comes more residents and visitors using the State's transportation network to travel to work, school, shopping, and recreation. Population growth means the State should anticipate more vehicles and Vehicle Miles Traveled (VMT). At current rates, VMT is estimated to grow by 0.8% in 2019, up to 60.1 billion annually. By planning for future growth, technological advances, and resiliency within the transportation network, MDOT can help create safe and accessible places for people to live, work, and play. In order to make these choices, they will consider mobility and accessibility within the transportation network. Mobility is defined by the ease of traveling along the transportation network, while accessibility describes the ease of reaching desired destinations or activities.

In order to address mobility and accessibility, MDOT preserves and modernizes the State's existing transportation network. As of 2019, only 2% of MDOT SHA maintained bridges were in poor condition, one of the lowest percentages in the region and below the 5% national average for bridges owned by state departments of transportation. MDOT SHA's Bridge System Preservation Program addresses over 300 bridges annually with an overall goal of bringing the State's structures to a state of good repair. This work includes structure replacements, major and minor rehabilitations, and preservation work to extend service life.

Other projects aim to increase the efficiency of MDOT's existing transportation system and services. These efforts include introducing new performance measures, for example by developing data that demonstrates Level of Traffic Stress (LTS) on the network. LTS is an approach to assessing roadway conditions for bicycle accommodation and will provide a better measure than Bicycle Level of Comfort (BLOC). MDOT will use this methodology to assess and inform potential improvements to all of Maryland's roads and other infrastructure. Project development for MDOT's TRP for I-495, I-270, MD 295/The Baltimore Washington Parkway, I-695, and I-95 continued in 2019. Once completed, the TRP will ease congestion, reduce travel times and improve the quality of life for the citizens of Maryland.

Investing in safe and accessible infrastructure to support active transportation for people of all ages and abilities is a growing priority across Maryland. Rapid expansion of bikeshare services, dockless bicycles, e-bikes, and electric scooters, along with emerging technologies for carsharing strategies and Connected and Automated Vehicles (CAVs), are changing the way people travel in Maryland. MDOT's embrace of these and other technologies, whether through testing or proactive regulatory policy-making, will ensure their integration into today's existing transportation network benefits all roadway users. Opportunities to incorporate innovative technologies abound across MDOT's multimodal system, ranging from electric vehicle (EV) charging devices at regional rail and Park-and-Rides to fleet incentives for fuel-efficient freight flows. Maryland's Vision for CAVs is to uphold and enhance a safe, efficient, and equitable transportation future by delivering collaborative and leading-edge CAV solutions. Maryland is open for business and eager to realize the life-saving and economic benefits of CAV technology, while ensuring safety for all. We are embracing CAV technology and innovation through continuing collaboration with partners interested in researching, testing, and implementing CAVs in Maryland.

The figure below illustrates Maryland's vision for Connected and Automated Vehicles.

BALANCING THE MULTIMODAL APPROACH AND PROVIDING TRANSPORTATION OPTIONS

MDOT continues to grow its multimodal transportation network of transit, highways, air travel, bicycling, walking, and ridesharing. This network is made possible through partnerships with local, non-profit, state, and federal entities, which help to create a safe travel environment throughout Maryland for users of all ages, abilities, and modes. Safe, plentiful, and comfortable options for people using alternative travel modes, like biking and walking, are vital to improve the overall mobility of the transportation network.

In 2019, MDOT moved forward with numerous projects that provide transportation alternatives to driving alone. MDOT reached 15% completion on the Purple Line, which now has a complete framework for its 170,000-square-foot Operations and Maintenance Facility. Riders on MDOT MTA's MARC Penn Line can now bring full-size bicycles on most rush hour weekday trains. MDOT MTA completed its $7.0 million Camden Station improvement project, which serves both MARC Camden Line trains and Light RailLink. The station now has an expanded seated waiting area, renovated restrooms, new ticket vending machines, and bicycle racks. In 2019, MDOT MTA also broke ground on North Avenue Rising, a project that includes over seven miles of dedicated bus lanes, transit signal priority, bike infrastructure, improvements to Metro SubwayLink and Light RailLink stations, and streetscaping improvements along a segment of Route 1 in Baltimore City. MDOT also completed an update to its 2040 Maryland Bicycle and Pedestrian Master Plan.

The 2040 Maryland Bicycle and Pedestrian Master Plan provided an opportunity to reassess priorities and strategies to increase bicycle and pedestrian access and safety for all of Maryland. It introduced several new initiatives to strengthen resources and partnerships towards achieving a new defined vision for the State: "Maryland will be a great place for biking and walking that safely connects people of all ages and abilities to life's opportunities." MDOT continues to market its IncenTrip app, which uses personalized incentives to encourage walking and bicycling in the Baltimore and Washington, D.C. metro regions. The app considers individual preferences and real-time multimodal transportation network conditions to inform travel decisions.

Federal and state grants provided more than $9.0 million to support funding of 37 bicycle and pedestrian projects throughout the State of Maryland for FY 2020.

Biking and Walking in Maryland

MDOT supports biking and walking through a series of policies, grants programs, event sponsorships, and strategic partnerships. These efforts encourage residents of Maryland to see biking, walking, and taking transit as viable and safe transportation options in our State. MDOT also identifies opportunities for bike and pedestrian projects as components of larger projects throughout the State, and MDOT SHA is releasing a draft Context Driven - Access and Mobility For All Users guide that enables flexibility in design solutions to address safety and accessibility issues for pedestrians and non-motorized users while still considering vehicle movement. Current MDOT biking and walking programs include:

- **Bicycle Pedestrian Priority Areas (BPPAs)**: The BPPA program focuses on planning bicycle and pedestrian facility improvements in areas with a high concentration of bicycling and walking, or areas identified for high-potential gains in alternative transportation mode share. State and local transportation agencies collaborate to align planning goals with innovative bicycle and pedestrian policies and treatments.
- **Bicycle Retrofit Program (Fund 88)**: This MDOT SHA system preservation program enhances increased bicycle connectivity and safety throughout the State Highway system by constructing bicycle facilities adjacent to State Highways or by retrofitting State roadways for on-road bicycle accommodation where no other projects are planned.
- **New Sidewalk Construction Program for Pedestrian Access (Fund 79)**: This MDOT SHA system preservation program works to construct new sidewalks along State Highways where no other projects are planned. Projects are prioritized to complete gaps in the sidewalk network, provide access to transit or other public services, and improve safety.
- **Sidewalk Reconstruction for Pedestrian Access (Fund 33)**: This MDOT SHA system preservation program works to upgrade existing pedestrian facilities adjacent to State Highways to ensure compliance with the Americans with Disabilities Act (ADA) Accessibility Guidelines and MDOT SHA's Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways.
- **Urban Reconstruction Program:** This program coordinates planning efforts between MDOT SHA and local stakeholders to promote safety and economic development on and around State roadways in urban areas.
- **The Recreational Trail Program:** This federal funding program supports community-based, motorized, and non-motorized recreational trail projects.
- **Maryland Bikeways**: This State-funded reimbursable grant program provides grant support for designing, constructing, and retrofitting elements of Maryland's bicycle network. Projects maximize bicycle access by focusing on improving the safety of roadway bicycle accommodation, improving last-mile connections to transit hubs, and expanding and closing key gaps of the statewide transportation trail network.
- **Transportation Alternatives (TA) Program**: This program is a reimbursable federal aid funding program for transportation-related community projects designed to strengthen an intermodal transportation system, including the Safe Routes to School (SRTS) program.
- **State Transit Innovation Grant (STIG)**: This competitive grant program was established in 2018 with the goal of supporting local efforts to improve transit reliability, improving access and connections to activity centers, and improving transit mobility options.

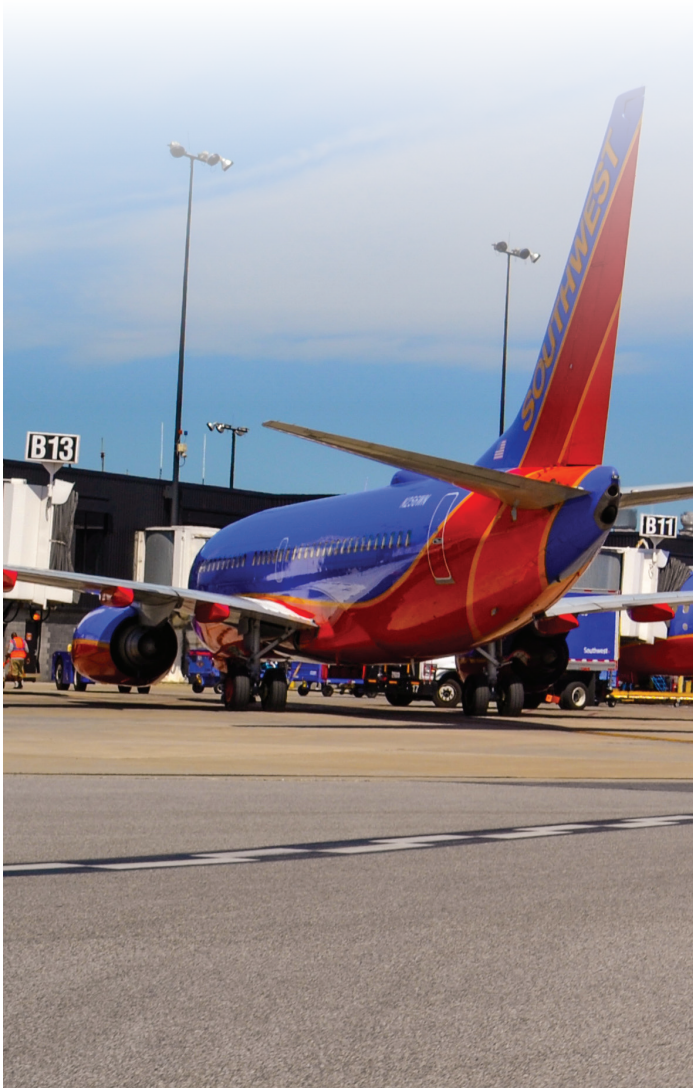
ECONOMIC DRIVERS IN MARYLAND

Air Travel in Maryland

Maryland is home to 35 public-use airports, the largest of those being BWI Marshall Airport, which provided almost 9,000 additional jobs since 2014, while supporting more than 106,000 jobs throughout Maryland and the region. In FY 2018, BWI Marshall Airport exceeded 27 million passengers and generated $9.3 billion in total economic activity. These numbers reflect the variety that BWI Marshall Airport offers: 36 airlines operate in BWI Marshall Airport, with seven of those providing international service. In total, the airport serves 92 nonstop air markets, 13 international and 79 domestic. To ensure the continued success of BWI Marshall Airport, MDOT MAA has funded over $277.4 million in major projects and $164.9 million in system preservation projects. Maryland airports received significant grant awards from the U.S. Department of Transportation (U.S. DOT) and Federal Aviation Administration (FAA) through the FAA's Airport Improvement Program (AIP). BWI Marshall Airport will receive $9.94 million to reconstruct a part of Taxiway Z. Four other airports in Maryland (Crisfield-Somerset County, Frederick Municipal, Salisbury-Ocean City Wicomico Regional, and Carroll County Regional/Jack B Poage Field) also received grants from the AIP for runway and drainage improvements.

The 34 other public airports in Maryland provide valuable connections to all parts of the State. To maintain these regional airports and the services they provide, MDOT MAA has funded over $33.0 million in projects (excluding federal and local funds), including an investment of $2.3 million in FY 2018. These investments support regional airports as additional transportation choices for passengers and cargo shippers who may seek access to specific markets. Ultimately, these regional airports connect people and goods to a global market and MDOT MAA seeks to facilitate access to that market through strategic investments. St. Mary's County Regional Airport is home to University of Maryland's Unmanned Aircraft Systems (UAS) test site. This site is an important part of the research and development needed for unmanned aircrafts to take flight and opening up potential UAS commercial and economic activity in Maryland.

Maryland's airports are constantly improving and offering more connections between the State and other locales. In 2019, BWI Marshall Airport added service to Denver, Colorado and Orlando, Florida via Frontier Airlines, a new carrier for the airport. Southwest Airlines, BWI Marshall Airport's largest carrier, is also considering expansion within the next 25 years and has continued to invest in infrastructure at BWI Marshall Airport in the interest of building its presence on the east coast. These new routes, and critical airline stakeholder engagement, will continue to support tourism and freight in Maryland while contributing directly to Maryland's economy.



Port of Baltimore

The Port of Baltimore is a crucial economic asset that directly generates jobs for over 15,000 people, with a total of more than 139,000 jobs linked to port activities. The Port provides close to $3.3 billion in personal wages and salaries, $2.6 billion in business revenues, and $395 million in State and local tax revenues. It is noteworthy that workers at the Port make, on average, 9.5% more than the average Maryland salary, according to the U.S. Bureau of Labor Statistics.

Investments at the Port have given it the distinction as one of the first U.S. East Coast ports capable of handling larger post-Panamax vessels. Because of this infrastructure, the Port was able to welcome the Evergreen Triton in May 2019, the largest container ship ever to arrive in Maryland. It carried over 14,000 TEUs and spanned the length of four football fields. A second 50-foot-deep berth will begin construction shortly with plans to be operational in 2021, this additional infrastructure is expected to further grow business at the Port.

Security is crucial for the Port of Baltimore and the Port has, for the past 10 consecutive years, received a top rating on an annual security assessment by the U.S. Coast Guard. Continuing to strengthen security at the Port is a top priority. MDOT MPA has been awarded $703,116 from the Federal Emergency Management Agency's (FEMA) Port Security Grant Program to strengthen access control points and cybersecurity efforts at the Port.

Cruises also contribute to the Port's success, with two cruise ships (from Carnival and Royal Caribbean) using it as their home port. In FY 2019, the Port welcomed 94 home port cruises carrying more than 218,000 passengers to destinations in the Bahamas, Caribbean, New England, and Canada. The Port also welcomed one international port call bringing over 1,990 passengers to Maryland. To continue meeting the needs of cruise customers, MDOT MPA completed improvements to the Cruise Maryland terminal, including a "VIP" lounge, public-address system, new signage, and increased comfort for passengers as they embark on their journey and return home.

In addition, the Port is also working with CSX and U.S. DOT to expand rail access to its facilities. In 2019, it was announced Maryland will receive $125 million in federal grant funding to reconstruct the Howard Street Tunnel. When completed, this project will allow the tunnel to accommodate double-stacked container trains and is expected to greatly increase the Port's container business.

The Port of Baltimore, in a joint effort with the U.S. Army Corps of Engineers, will restore two islands in the Chesapeake Bay: James and Barren Islands off the coast of Dorchester County. Clean sediment, gathered from dredging shipping channels to allow continued accommodation of large ships, will be used to rebuild the islands. This project will provide a total of 2,144 acres of remote island habitat and displays the Port's dedication to preserving the Bay.

GOAL: Ensure a Safe, Secure, and Resilient Transportation System

OBJECTIVES:

- **Reduce the number of lives lost and injuries sustained on Maryland's transportation system**
- **Provide for the secure movement of people, goods, and data**
- **Provide a resilient multimodal system by anticipating and planning for changing conditions and hazards whether natural or man-made**
- **Improve roadway clearance times and facilitate efficient and coordinated responses to emergency and disaster events throughout the transportation system**

Maryland is committed to Zero Fatalities on the transportation system. Every day, transportation and safety agencies throughout the State are enacting programs and projects, and leading communications efforts to ensure people arrive safely at their destinations. The combination of partnerships, dedicated resources, and an institutional commitment to positively impact the safety culture translated into downward trends in fatalities and serious injuries. The goal now is to keep momentum moving toward zero fatalities through a multidisciplinary approach.

Enforcement of safety laws is one of the most effective solutions to eliminating unsafe driving behaviors. MDOT, MDTA, the MDOT MVA Maryland Highway Safety Office (MHSO), and the Maryland State Police (MSP) continue to commit significant resources to reduce impaired, aggressive, unbelted, and distracted driving and keep vulnerable users safe, including bicyclists, pedestrians, and motorcyclists. The State Police Impaired Driving Effort (SPIDRE), now in its seventh year, uses crash data to target and remove impaired drivers. Since its inception, they have taken more than 3,000 drivers under the influence off the road. At the local level, officers utilize high visibility campaigns to target unsafe behaviors on higher risk corridors. Along I-83, aggressive and distracted driving enforcement resulted in over 130 citations. This systemic and targeted enforcement approach is being implemented statewide to improve safety trends.

Innovations in Maryland are being advanced to address safety. MDOT launched Driven to Protect, a pilot program to reduce drunk driving in Maryland using in-vehicle technology. The Driver Alcohol Detection System for Safety was installed in eight MDOT MVA fleet vehicles. The Driver Alcohol Detection System for Safety utilizes sensors to analyze breath molecules, preventing vehicles from starting when the driver is intoxicated. This technology, when implemented in all vehicles, has the potential to reduce drunk driving fatalities by up to 60%. Efforts like this demonstrate Maryland's commitment to zero fatalities through new approaches.

Proactive safety planning, furthered by the implementation of proven policies, programs, and infrastructure projects has also helped Maryland make progress toward its safety goals and commitment to Vision Zero. MDOT's 2016-2020 Strategic Highway Safety Plan (SHSP) continues to serve as the statewide framework for solutions to lower fatalities and serious injuries. However, crashes occur on all roads, in all parts of the State. Maryland's jurisdictions are developing local road safety plans or Vision Zero plans to understand local safety issues and address them in coordination with the SHSP. Harford County was the first to adopt a SHSP and Montgomery County has been a leader making safety its highest priority for all roadways. They have implemented a significant number of safety policies and improvements from their two-year Action Plan, targeting a 35% reduction in severe and fatal collisions by the end of 2019. Other jurisdictions, most recently Prince George's County, are working to develop similar plans that identify education, enforcement, and engineering solutions.

In addition to a safe system, Maryland is committed to achieving a secure and resilient system. In early 2019, the Port of Baltimore was awarded the U.S. Coast Guard's highest security ranking for the tenth consecutive year. In addition, they received close to a million dollars to strengthen access control points and cybersecurity efforts to protect inbound and outbound cargo. The safety of assets is also a priority. The Maryland Commission on Climate Change, Adaptation, and Resiliency Working Group, developed new priorities for their 2019 Work Plan to mitigate the causes of and prepare for the consequences of climate change on the transportation system. MDOT MVA's work with Real ID resulted in Maryland being the first state in the nation to be recertified by the Department of Homeland Security for REAL ID compliance. Since January 2019, 418,000 REAL ID customers have been served and more than half of Marylanders are REAL ID compliant.

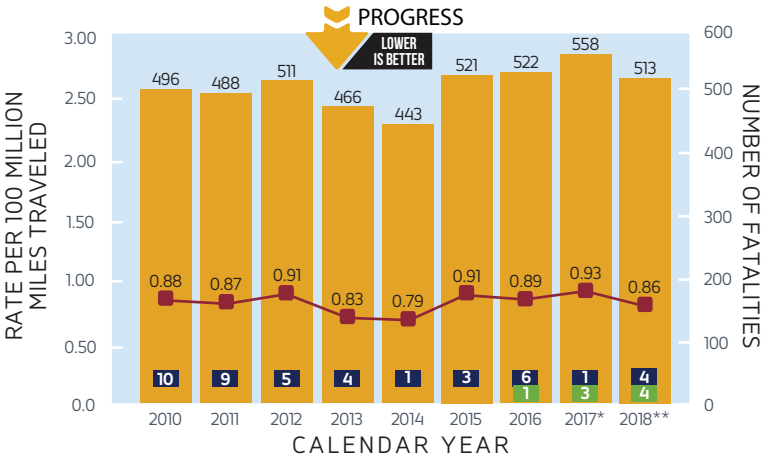
OBJECTIVE:

Reduce the number of lives lost and injuries sustained on Maryland's transportation system

ANNUAL NUMBER OF TRAFFIC FATALITIES AND INJURIES ON ALL ROADS IN MARYLAND AND ON TRANSIT FACILITIES

MAKING PROGRESS

ANNUAL NUMBER OF FATALITIES



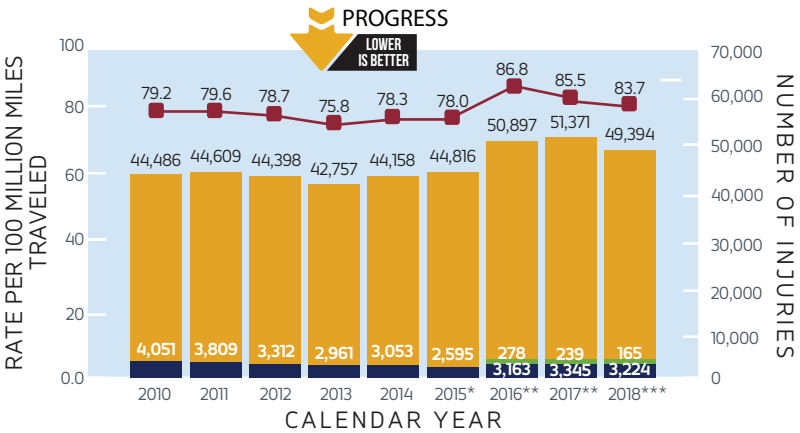
- Annual number of traffic fatalities on all roads in Maryland (including MDTA-owned roads)
- Traffic fatality rate per 100 million miles traveled on all roads in Maryland
- Annual number of traffic fatalities on all MDTA-owned roads, a subset of total annual number of traffic fatalities on all roads in Maryland
- Annual number of transit passenger fatalities

Target: ≤ 0.64 traffic fatality rate on all roads in Maryland by 12/31/2020, ≤ 4 transit fatalities per year by 12/31/2020, ≤ 391 fatalities on all state-owned roads per year by 12/31/2020

* 2017 data is revised from previous report.

**2018 data is preliminary and subject to change.

ANNUAL NUMBER OF PERSONAL INJURIES****



- Annual number of personal injuries on all roads in Maryland
- Personal injury rate per 100 million miles traveled on all roads in Maryland
- Annual number of serious personal injuries on all roads in Maryland
- Annual number of transit passenger personal injuries

Target: ≤ 5.23 serious personal injury rate on all roads in Maryland by 12/31/2020, ≤ 5.073 serious injury rate of transit passengers on all facilities in Maryland by 2020

* Changes to law enforcement crash data collection has affected serious injury statistical reporting, since the implementation of the Automated Crash Reporting System (ACRS) on January 1, 2015.

** 2016 and 2017 data has been revised from previous report.

*** 2018 data is preliminary and subject to change.

**** 2016 - 2018 transit passenger injuries data has changed from previous report; previous data represented injury claims, updated data represents confirmed injuries.

Transportation system users of all ages, abilities, and modes should be able to safely travel to and from every destination. Ultimately, Maryland's long-term goal is zero deaths on its transportation system, and measuring the trends in injuries and fatalities for traffic, bicycle, pedestrian, and transit passengers will help Maryland determine the best investments and strategies to move toward this long-term goal.

Why Did Performance Change?

- Continued to focus on behavioral programs and infrastructure projects outlined in the 2016-2020 SHSP to reach zero fatalities on Maryland's roadways, in accordance with MDOT's Toward Zero Deaths goal
- Focused on best practice approaches to maintaining safe roadways including implementing the 4Es of highway safety (Engineering, Enforcement, Education, and Emergency Medical Services)
- Continued to improve training for MDOT MTA operations staff to ensure safe driving practices and up-to-date training for drivers as well as awareness of where preventable accidents are most likely to occur

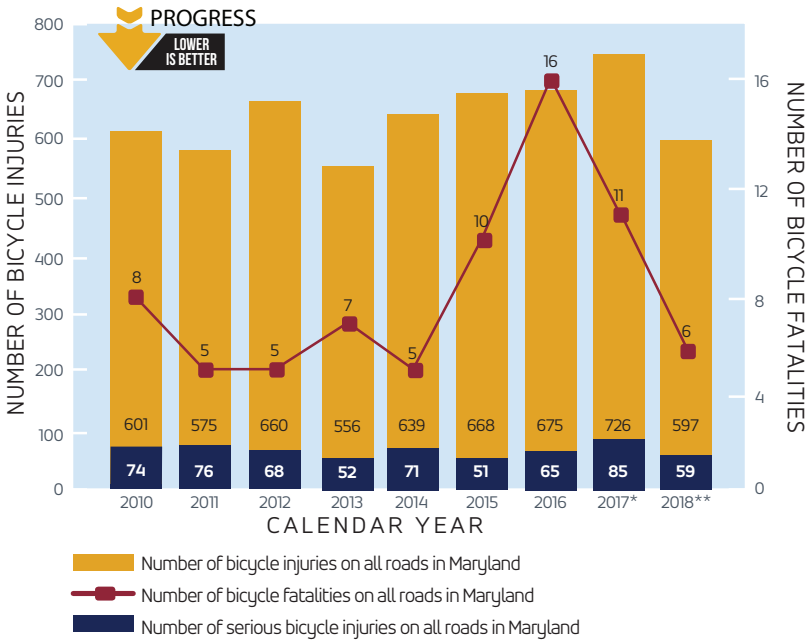
What Are Future Performance Strategies?

- MDOT is currently working with many jurisdictions to support the development of local strategic highway safety plans that are reflective of and contribute to the statewide SHSP; reductions in crashes and injuries and fatalities at the local level will improve the overall statewide outcomes
- Implement new Federal Transit Administration (FTA) Safety Management Systems (SMS) policies targeted towards reducing preventable accidents and implement new safety policies, procedures, and subsequent training
- Promote and support legislation and adjudication to reduce aggressive, distracted, and impaired driving
- Enhance and improve enforcement of adult and child occupant protection laws
- Identify intersections where the Crash Severity Index is high and implement safety improvements

NUMBER OF BICYCLE AND PEDESTRIAN FATALITIES AND INJURIES ON ALL MARYLAND ROADS

MAKING PROGRESS

NUMBER OF BICYCLE FATALITIES AND INJURIES

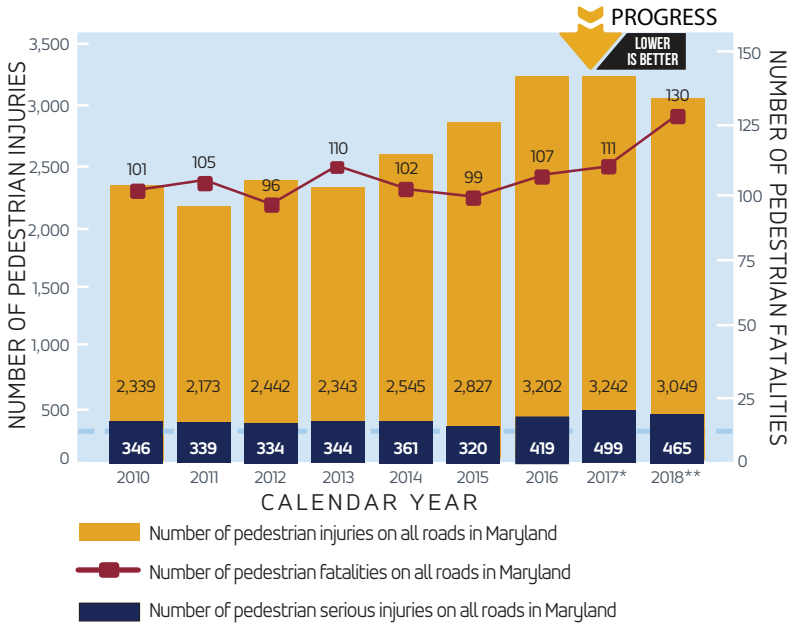


Target: ≤ 6 bicycle fatalities per year (based on a rolling five-year average) by 12/31/2020, ≤ 55 serious bicycle injuries per year by 12/31/2020 (2016-2020 average)

* 2017 data has been revised from previous report.

** 2018 data is preliminary and subject to change.

NUMBER OF PEDESTRIAN FATALITIES AND INJURIES



Target: ≤ 78 pedestrian fatalities per year by 12/31/2020 (2016-2020 average), ≤ 293 pedestrian serious injuries per year by 12/31/2020 (2016-2020 average)

* 2017 data has been revised from previous report.

** 2018 data is preliminary and subject to change.

Why Did Performance Change?

- Focused on strategies identified in the SHSP and continued to install bicycle improvements, such as marked bicycle lanes, where feasible
- Continued improving bicycle guidance and policies along MDOT SHA roadways with the MDOT SHA bicycle committee
- Continued to utilize MDOT SHA Pedestrian Road Safety Audits (PRSAs) to identify and implement engineering solutions that improve pedestrian safety in high-incident locations
- Invested in the new statewide education and outreach campaign, "Look Alive," which reminds drivers, pedestrians, and bicyclists to share the road and make safer decisions that could save lives
- MDOT SHA is releasing a draft Context Driven - Access and Mobility For All Users guide to address issues of safety and accessibility for pedestrians and non-motorized users while still considering vehicle movement

What Are Future Performance Strategies?

- Implement safety-related strategies identified in the 2040 Maryland Bicycle and Pedestrian Master Plan
- Focus on geospatial analysis of crash data to identify high-risk curves and screen candidate locations for high-friction surface treatments
- Coordinate with local governments to strengthen planning efforts and to identify locations for sidewalks, shared use paths, and innovative bicycle treatments approved by the Federal Highway Administration (FHWA) and MDOT SHA, such as green pavement, protected bicycle lanes, bicycle signal heads, and other bicycle treatments
- Identify and target pedestrian and bicycle safety issues, populations, and locations of concern through the collection, analysis, and evaluation of data and information; promote safe behaviors of all road users through education and enforcement initiatives
- Develop, apply, and promote technological approaches, including those in vehicles and emergency response equipment, to better prevent and reduce the severity of collisions involving pedestrians and bicyclists
- Improve the pedestrian and bicycle safety culture in Maryland, including the promotion and implementation of legislation and training of professionals and stakeholders about best safety practices
- Promote and improve roadway environments for safe walking and bicycling through implementation of engineering treatments, land use planning, and system-wide countermeasures
- Streamline the MDOT SHA PRSA reporting; develop a data management program to integrate seamlessly with GIS portal to develop recommendations that more readily integrate into existing MDOT SHA funding programs

OBJECTIVE:

Provide for the secure movement of people, goods, and data

With each new technology that Maryland enlists to help make processes and experiences more efficient in the long run for users, cybersecurity must also be prioritized to protect customers' data and privacy. In August 2019, the Department of Homeland Security recertified MDOT MVA for its compliance with federal REAL ID requirements, which made Maryland the first state to achieve that designation. The recertification affirms that Maryland has all documentation and security procedures in place that are required to make the State's REAL ID driver's licenses and identification cards compliant with Federal law. Information technology (IT) improvements are moving forward in Network Maryland and the Center for Internet Security Multistate Information Sharing and Analysis Center (MS-ISAC). IT will also continue to upgrade security infrastructure such as closed-circuit television (CCTV), security cameras, and other technology on the multimodal transportation system.

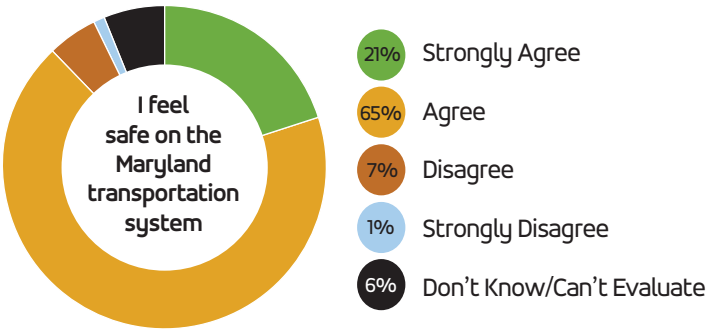
MDOT-WIDE OVERALL PERCEPTION OF SAFETY: CRIME AND SAFE MOVEMENT

MDOT regularly surveys its customers to measure how successful it is in making transportation system users feel safe. The sense of safety that users feel while driving, riding transit, flying into or out of BWI Marshall Airport, or utilizing any other part of the transportation system can indicate how likely they are to continue using the transportation system. The survey indicates the perception of safety and experience with crime for users of the Maryland transportation system.

PERCEPTION OF SAFETY ON THE MARYLAND TRANSPORTATION SYSTEM

(Including BWI Marshall Airport, Ports, Roads, Transit)

MDOT SURVEY QUESTION



Why Did Performance Change?

- MDOT SHA's Coordinated Highways Action Response Team (CHART) incident management program handled 151,955 events
- MDOT SHA and MDTA achieved bare pavement on primary and interstate highways during winter events in fewer than two hours, on average, for the past four winter seasons
- MDOT MTA began a drone program to monitor areas like tracks and parking lots, and utilized a Mobile Field Force Team (deployable team of offices with special crowd control equipment and training)
- MDOT MTA led an initiative to implement technological safety improvements, such as a bus turn alert system to reduce vehicle-pedestrian crashes and initiated the Light Rail Fare Evasion Prevention Program to reduce crime and fare evasion
- MDOT MVA's REAL ID process was recertified in August 2019 by the Department of Homeland Security. Maryland is the first state to achieve this designation

What Are Future Performance Strategies?

- MDOT has completed 1,069 construction projects totaling nearly $5.9 billion since 2015 and has 718 projects totaling $7.2 billion currently underway
- MDOT MVA is piloting the Driver Alcohol Detection System for Safety, making Maryland the first state in the nation to test new technology that automatically analyzes drivers breath for alcohol impairment
- MDOT SHA and MDOT MVA are working with local jurisdictions to support development of local road safety plans using the Maryland SHSP as a guide
- MDOT MAA will administer $2.48 million to public-use airports across the State to support infrastructure preservation, safety equipment acquisitions, and environmental compliance activities
- MDOT MPA will construct a second 50-foot-deep vessel berth that will be operational in 2021

PREVENTABLE CRASHES PER 100,000 VEHICLE MILES

FACING CHALLENGES

MDOT MTA has developed a baseline from which to target preventable crashes on transit to reduce fatalities and injuries, increase efficiency, and provide a safer ride to customers.

PROGRESS
LOWER IS BETTER

CALENDAR YEAR	2012	2013	2014	2015	2016	2017	2018	2019	TARGET
PREVENTABLE ACCIDENTS PER 100,000 VEHICLE MILES									
Core Bus	2.43	1.49	1.42	1.43	1.54	1.54	1.44	1.76	**1.50**
Light Rail	0.24	0.03	0.06	0.14	0.24	0.02	0.03	0.37	**0.25**
Baltimore Metro	0.06	0.00	0.00	0.00	0.06	0.06	0.02	0.01	**0.06**
Paratransit/Taxi Access	1.74	1.55	1.10	0.79	1.04	1.04	0.77	1.32	**1.00**

Why Did Performance Change?

- MDOT MTA purchases 70 new vehicles each year
- Replacement Metro SubwayLink railcars are in production and Light RailLink railcars are undergoing a comprehensive overhaul
- MobilityLink paratransit vehicles are continuously replaced and MARC Train began operating eight new locomotives in 2018

What Are Future Performance Strategies?

- Use efficient and effective training methodologies, including the bus simulator, operator recertification programs, and safe operation awards to give operators the skills they need to perform their duties safely
- MDOT MTA will continue to implement new FTA SMS policies that are targeted towards reducing preventable accidents
- Continue to improve training of MDOT MTA staff and to understand where preventable crashes are most likely to occur

OBJECTIVE:

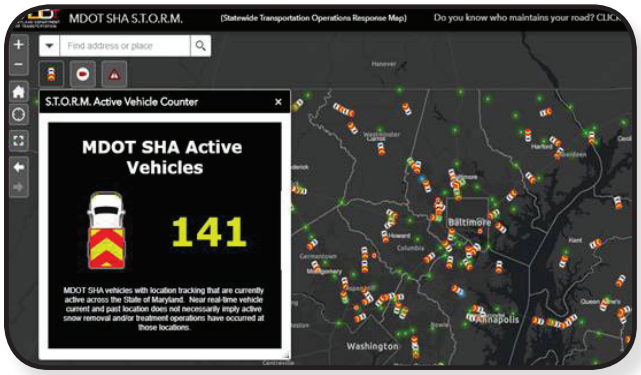
Provide a resilient multimodal system by anticipating and planning for changing conditions and hazards whether natural or man-made

MDOT's transportation network must be resilient and able to adapt to changing conditions, including both environmental and man-made threats, in order to accomplish its long-term goal of safety. Changes in conditions are often unpredictable, but the transportation system is critical to the continued economic vitality, safety, and livelihood of the region, so it must be kept as accessible and safe as possible no matter the disruption. Severe weather and other incidents are inevitable, but a prepared and well-trained transportation agency can ensure these incidents are resolved as quickly and smoothly as possible.

The familiarity of emergency personnel with the National Incident Management System (NIMS) and Incident Command System (ICS) is vital for emergency preparedness. NIMS is a consistent, nationwide approach for government agencies at all levels (along with non-government agencies) to work effectively and efficiently during all incidents. NIMS, combined with ICS, is an integrated comprehensive approach to domestic incident management, crisis management, and consequence management.

MDOT is developing vulnerability assessment data and resiliency plans to address the current and future impacts of climate change on the transportation network. Data from the vulnerability assessment is available for planning, programming, and project design to ensure that resilient and reliable transportation is available to be utilized by counties. A second pilot study was completed to establish processes that would integrate extreme weather and climate risk into asset management and planning. To prepare for future network disruptions, MDOT utilizes innovative design in new construction and maintenance, relocation, and other protective and adaptive measures.

MDOT has already begun and will continue to plan for resiliency on its highway network of 17,000 lane-miles of roadway and nearly 2,900 bridges. MDOT's Climate Change Vulnerability Viewer tool, developed in partnership with federal, university, and local partners, helps MDOT identify vulnerabilities, prioritize infrastructure assets, and determine solutions to respond to the changing climate. Since its release in 2018, it continues to be updated regularly. This tool allows MDOT to address the most vulnerable roadways and bridges before they become irreparable. It also allows MDOT to work in collaboration with local partners to develop new strategies or support local planning efforts.



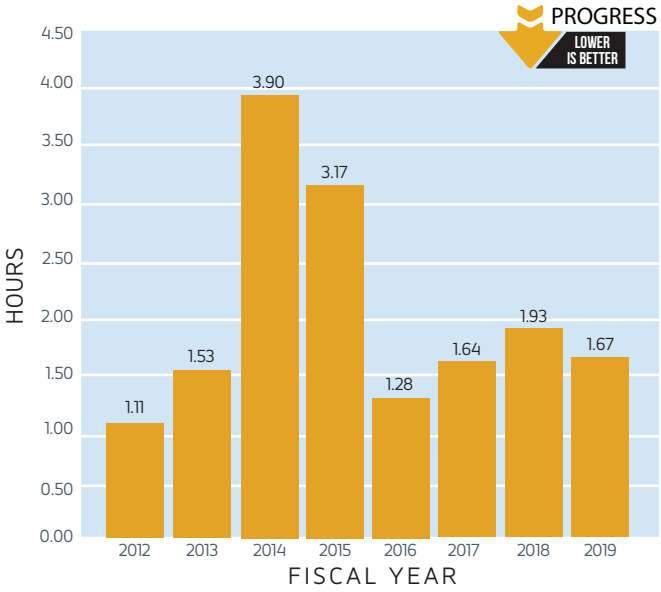
S.T.O.R.M. is MDOT SHA's new website where citizens can determine the real-time location of MDOT and contractor snow equipment in the field.

OBJECTIVE:

Improve roadway clearance times and facilitate efficient and coordinated responses to emergency and disaster events throughout the transportation system

RESTORING TRANSPORTATION SERVICES: AVERAGE TIME TO RESTORE NORMAL OPERATIONS AFTER A WEATHER EVENT

It is imperative that Maryland's transportation system be safe, reliable, and efficient for residents, businesses, and emergency services year-round. When inclement weather disruptions occur, the response by specialized operators to restore all modes of the transportation system should be quick and efficient while preserving safety for all users.



Target: 4 hours or fewer to regain bare pavement

Why Did Performance Change?

- Direct Liquid Application (DLA) operations can deplete brine resources quickly: over the past two seasons, MDOT SHA placed an additional 145,000 gallons of brine storage capacity strategically across the State
- MDOT SHA also expanded its DLA program and now has at least three routes in six of the seven district offices across the State
- MDOT SHA has 45 loader scales as of September 2019, and will continue to expand their use at salt storage facilities to achieve greater accuracy in salt inventory management

What Are Future Performance Strategies?

- Continue to train 20% of MDOT SHA maintenance personnel annually in the required Snow College so that 100% of employees are trained at least every five years
- Continue to ensure adequate supplies of brine storage tanks statewide for DLA operations and increase the number of routes using DLA
- Replace all brine makers with automated units that can produce up to 9,000 gallons of brine per hour, to quadruple the output of current units while producing a perfectly blended solution

GOAL: Facilitate Economic Opportunity and Reduce Congestion in Maryland through Strategic System Expansion

Invest in and pursue opportunities to promote system improvements that support economic development, reduce congestion, and improve the movement of people and goods

OBJECTIVES:

- **Pursue capital improvements to the transportation system that will improve access to jobs and tourism and leverage economic growth opportunities**
- **Improve the movement of goods within and through Maryland by investing in intermodal connections and improvements to reduce freight bottlenecks**
- **Strategically invest in expansion and operational improvements to reduce congestion along the multimodal transportation system**

Maryland's varied and extensive transportation system fosters economic growth across the State. Freight trains, cargo planes, trucks, and giant post-Panamax cargo ships transport goods throughout Maryland. Those who work in, live in, and visit Maryland use the passenger rail, buses, and highways to get to their destinations. These same highways, airports, railways, and port activities carry billions of dollars of goods and talent within Maryland.

As of 2018, $8.8 billion of motor vehicle, airport, highway, transit, bicycle, and port projects were underway. The FY 2020-FY 2025 CTP outlines $3.8 billion in funds set aside to improve the movement of goods. These funds address the rapid growth in freight activities from 2017 to 2018, such as the 51% increase in air cargo volume.

MDOT MPA continues to facilitate its record-breaking growth by investing in channel maintenance and berth rehabilitation. The Port of Baltimore handled a record 43.0 million tons of cargo in 2018 and nearly a million cars and light trucks. The FY 2020-FY 2025 CTP lists six major Port-related projects for a total of $281.1 million. Sixty-five million dollars alone is set aside for berth-specific improvements such as reconstruction and expansion. To address rapid growth in air cargo, MDOT MAA has set aside $177.0 million for concourse extensions and improvements.

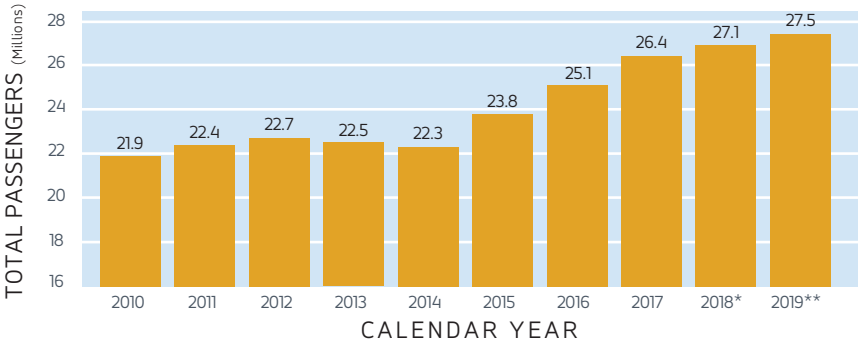
OBJECTIVE:

Pursue capital improvements to the transportation system that will improve access to jobs and tourism, and leverage economic growth opportunities

BWI MARSHALL AIRPORT TOTAL ANNUAL PASSENGERS

TARGET ACHIEVED

BWI Marshall Airport is a crucial point of entry and export for cargo and people. The following measure accounts for the number of annual passengers using the BWI Marshall Airport.



* 2018 data revised from previous report.
** 2019 data is preliminary and subject to change.

What Are Future Performance Strategies?

- BWI Marshall Airport continues to meet with both potential new entrants and current carriers to promote air service opportunities
- Promote BWI Marshall Airport advertising programs and awareness campaigns to passengers on the advantages and options the airport offers, such as air service, parking, and ground transportation services
- Continue to highlight BWI Marshall Airport as the "Easy Come, Easy Go," gateway to the Baltimore and Washington, D.C. region

Why Did Performance Change?

- In CY 2019, several airlines experienced strong passenger growth with international passenger traffic increasing 16% over the previous year and domestic passengers increasing 3%, supported in part by the addition of new non-stop service to destinations including Mexico, Canada, Cayman Islands, Florida, Texas, California, North Carolina, South Carolina, and Tennessee

INTERNATIONAL CRUISES USING THE PORT OF BALTIMORE

TARGET ACHIEVED

The Port of Baltimore is one of the busiest cruise ports on the eastern seaboard. This measure illustrates cruise-related business activity departing from the Port of Baltimore to foreign destinations.

FISCAL YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019*
Number of International Cruises using MDOT MPA's Terminal	96	111	100	93	99	75	94	86	94	95

Target: Maintain two year-round cruise line operations at the Port

*2019 data is preliminary and subject to change.

Why Did Performance Change?

- Carnival Cruise Lines and Royal Caribbean International Cruise Lines offer year-round service from the Port of Baltimore; Royal Caribbean had an annual count of 44 cruises, with 5-night, 7-night, 9-night, and 12-night voyages and Carnival offered 51 cruises with the majority of them being 7-night cruises
- Carnival and Royal have submitted long-term cruise schedules through 2021 and both cruise lines report that their ships are sailing at over 100% capacity (more than two people per cabin)

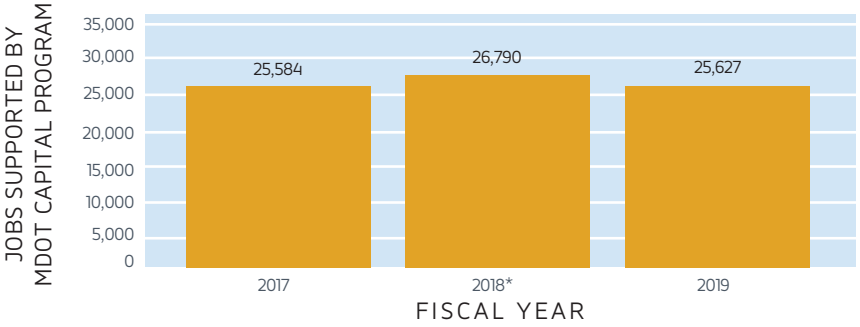
What Are Future Performance Strategies?

- Enhance consumer-side facility capacity and comfort such as improved vehicular circulation and exterior signage
- Continue pursuing opportunities to bring additional regularly scheduled cruise lines to the Port of Baltimore
- Continue promoting the Port as an accessible, comfortable hub of cruise activity for consumers

JOBS SUPPORTED BY MDOT CAPITAL PROGRAM

Annually, the CTP lists MDOT's planned investments by Transportation Business Unit (TBU). These investments drive the creation of direct construction jobs, bolster manufacturing jobs, and support businesses directly affected by the patronage of construction staff. Construction and maintenance projects support economic activity beyond the project location, and even beyond Maryland.

Economic return from transportation investment is based on the estimated number of jobs created as a result of MDOT investments in capital projects. The decrease in jobs from FY 2018 to FY 2019 is attributed to the increased cost of labor and a decrease in the capital program.



* FY 2018 data is updated from the previous report due to revised estimate using TREDIS 5 model.

OBJECTIVE:

Improve the movement of goods within and through Maryland by investing in intermodal connections and improvements to reduce freight bottlenecks

IMPROVING GOODS MOVEMENT: FREIGHT ORIGINATING AND TERMINATING IN MARYLAND

Maryland's position in the Mid-Atlantic makes it a crucial crossroad of goods, services, and people. Maryland is a gateway to the bustling Washington, D.C. region and the highly active northeast corridor. The State's main supply chains are comprised of mining, agriculture, pharmaceuticals, manufacturing, and retail travel. These industries rely on the safe operation and maintenance of Maryland's multimodal freight network. To keep up with demand while maintaining safety and efficiency, the State cooperates with select freight partners to inform its planning and strategic investment efforts.

FREIGHT ORIGINATING AND TERMINATING IN MARYLAND (2018)*

METHOD FOR MOVING FREIGHT	TOTAL VALUE (MILLIONS)	TOTAL TONNAGE (THOUSANDS) SATISFIED
Air	$6,393	88
Other	$1,589	65
Rail	$13,679	33,302
Truck	$298,185	198,361
Water	$59,300	42,993
All Freight	$385,451	265,782

* Source: U.S. Department of Transportation Freight Analysis Framework (FAF4) Version 4.4.5. that was refactored using 2017 data. To report 2018 data, a 3% annual growth rate was applied. FAF generates estimates based on a base year of data. Therefore, tonnage and values represented are estimates, not exact amounts. The water tonnage data based is for 2018, based on U.S. Army Corp of Engineers reporting.

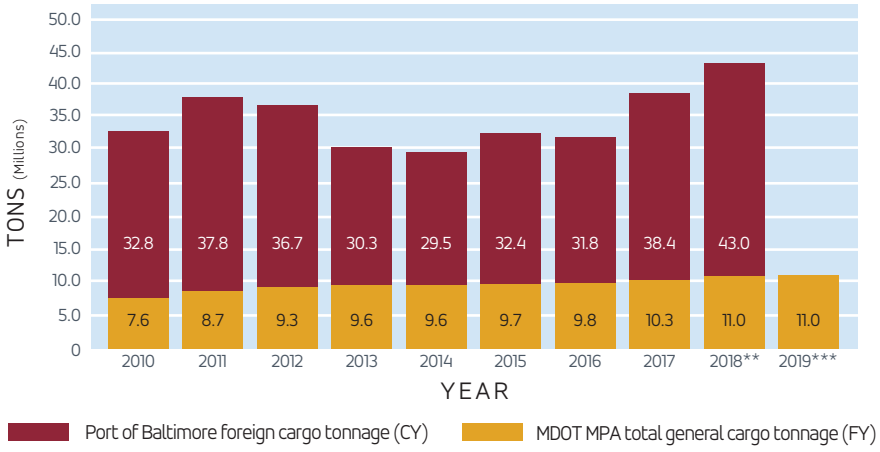
Facilitating efficent and safe freight movement is one of MDOT's focuses. As of the 2017 update of the Strategic Goods Movement Plan (SGMP), MDOT is in compliance with the requirements of the Fixing America's Surface Transportation (FAST) Act. This enables MDOT to apply for funding derived from the FAST Act, including Infrastructure for Rebuilding America (INFRA) and Better Utilizing Investments to Leverage Development (BUILD) grants. MDOT has sought and will continue to seek opportunities to apply for funding from these sources. So far, MDOT MPA has received a $6.6 million BUILD grant for a project related to the Seagirt Marine Terminal, and in March 2019 MDOT was awarded an $125 million INFRA grant to expand the Howard Street Tunnel, eliminating a critical bottleneck.

Freight in Maryland encompasses varied modes, including airports, railways, highways, and waterways. Goods movement in Maryland contributed $385.5 billion to economic development in 2018. $298.2 billion of that was contributed by the trucking industry via Maryland's highways and roadways, meaning that congestion mitigation remains a major focus in freight movement projects. By laying out funding for congestion reduction projects, MDOT is actively ensuring that freight providers are able to move their goods and people in a timely, efficient, and safe manner. Currently, active projects are long-term investments rather than short-term reactionary measures. This enables Maryland to remain competitive in freight movement, but also benefits non-freight roadway users. MDOT continues to collaborate with the State Freight Advisory Committee to communicate and understand where projects would be most useful along freight corridors.

PORT OF BALTIMORE FOREIGN CARGO AND MDOT MPA GENERAL CARGO TONNAGE*

TARGET ACHIEVED

Measures the amount of foreign and general cargo moving through the Port of Baltimore.*



* MDOT MPA cargo data is provided by fiscal year, but The Port information is reported using the latest full calendar year because The Port statistics combine data for public and private marine terminals that use different fiscal year reporting timeframes. Therefore, 2019 data cannot be reported until early 2020.

** 2018 data for The Port is revised from previous report.

*** MDOT MPA general cargo includes both foreign and domestic waterborne cargo, whereas, Port-wide data includes only foreign waterborne cargo. Port-wide data for calendar year 2019 is an estimate.

Why Did Performance Change?

- The Port of Baltimore's public and private marine terminals handled a record 43.0 million tons of international cargo, breaking the previous mark of 41.0 million tons set in 1974, and the Port also handled more containers and cars/light trucks in 2018 than any previous year in its history
- Liquified Natural Gas (LNG) exports through the Port of Baltimore started in March 2018 as Dominion Energy completed construction of its facility in Lusby, Maryland
- There were 2,058 ship calls at the Port in 2019, which is 86 more than 2018
- Ports America continues to invest in Seagirt with new capital investments in equipment, and is currently planning to deepen Berth Three to 50 feet by 2021; the MDOT MPA was awarded a BUILD grant for nearly $6.6 million towards this $32.8 million project
- For the first half of CY 2019, Baltimore's international cargo tonnage increased by 12.3% compared to the same period of the prior year; if this trend holds, it will be another new Port record

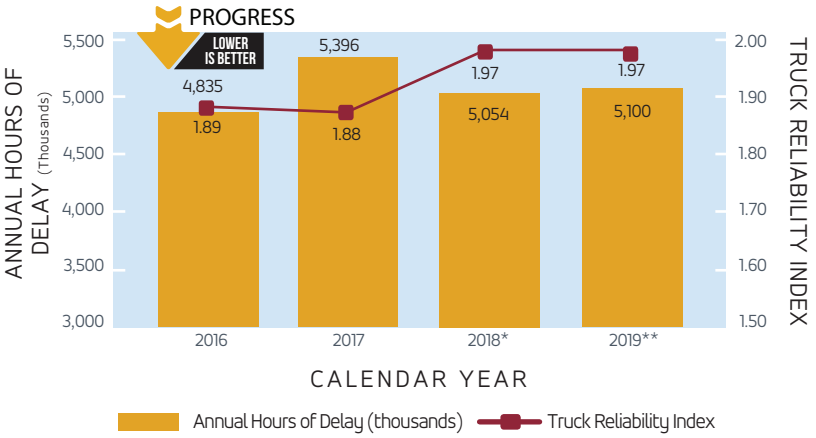
What Are Future Performance Strategies?

- Remain an active leader in the Baltimore Port Alliance and assist private port partners to increase waterborne commerce on behalf of the Port
- Work with the U.S. Army Corps of Engineers to ensure the Port's channels are adequately dredged
- Ensure adequate dredged material placement capacity is available at MDOT MPA's Dredged Material Containment Facility (DMCF) sites to handle future dredging needs
- Work with the City of Baltimore and Maryland counties to efficiently manage highway permits for over-sized loads coming to/from the Port
- Work with Trade Point Atlantic to ensure that the new automobile terminal will open as planned
- Work with Baltimore City to encourage land use practices and zoning efforts that preserve industrial land and freight routes leading to/from the private and State-owned terminals in the Port
- Construct terminal facilities to attract new cargo and maintain existing customers
- Negotiate with manufacturers and international logistics providers to obtain long term contracts

ANNUAL HOURS OF DELAY FOR TRUCKS AND TRUCK RELIABILITY INDEX

FACING CHALLENGES

Delay and reliability can affect many things in a supply chain beyond the truck transporting the goods. An efficient and reliable system translates to improved goods movement and can impact economic development. Federal regulations provide guidance on how to measure reliability by mandating tracking of the Truck Reliability Index as a measure of truck freight efficiency throughout Maryland.



Target: 5,300 ($5.3 million) Thousand Hours Of Truck Delay In 2023, Truck Reliability Index of 2.00 in 2023

*2018 data is revised from previous report.

**2019 data is preliminary and subject to change.

OBJECTIVE:

Strategically invest in expansion and operational improvements to reduce congestion along the multimodal transportation system

Why Did Performance Change?

- With the lowest unemployment rates in a decade, a steadily growing national and regional economy, and relatively low levels of gas prices, vehicle miles traveled (VMT) has continued to grow slightly, although VMT per capita has remained relatively steady since 2016
- MDOT SHA completed 108 projects (including 21 major projects) in 2019 and has 423 active projects, including a significant number of system preservation and capital projects. While construction led to additional delay in work zones, it will improve long-term performance

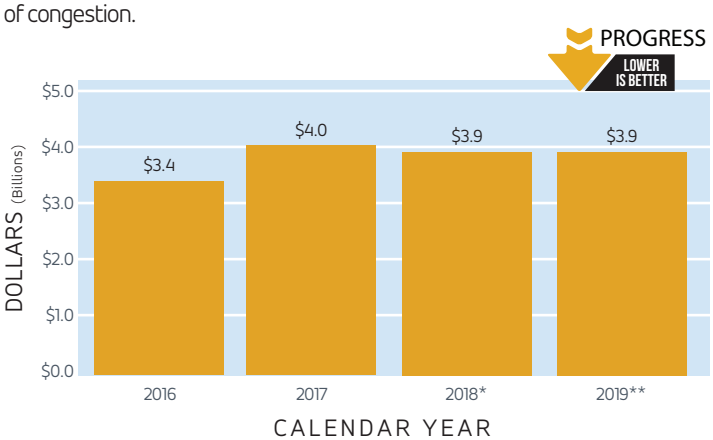
What Are Future Performance Strategies?

- $125 million in federal funds has been approved for the Howard Street Tunnel in Baltimore, which will ease truck traffic, boost the economy, and create jobs
- Continue to collaborate with metropolitan planning organizations (MPOs), local agencies, State entities, and the private sector to deliver projects that address reliability and efficiency
- Modernize transportation infrastructure by incorporating Intelligent Transportation System (ITS) technology
- In June 2019, the Board of Public Works voted to advance the I-495 and I-270 Public-Private Partnership (P3) Program, which will reduce traffic congestion for millions of travelers in Maryland

ANNUAL COST OF CONGESTION (BILLIONS) ON THE MDOT HIGHWAY NETWORK

MAKING PROGRESS

A reliable and efficient multimodal transportation system goes beyond convenience. Efficiency and reliability are important parts of economic growth, development and quality of life. Quantifying the cost of congestion helps MDOT measure the impact of congestion.



Target: $4.1 billion in 2023

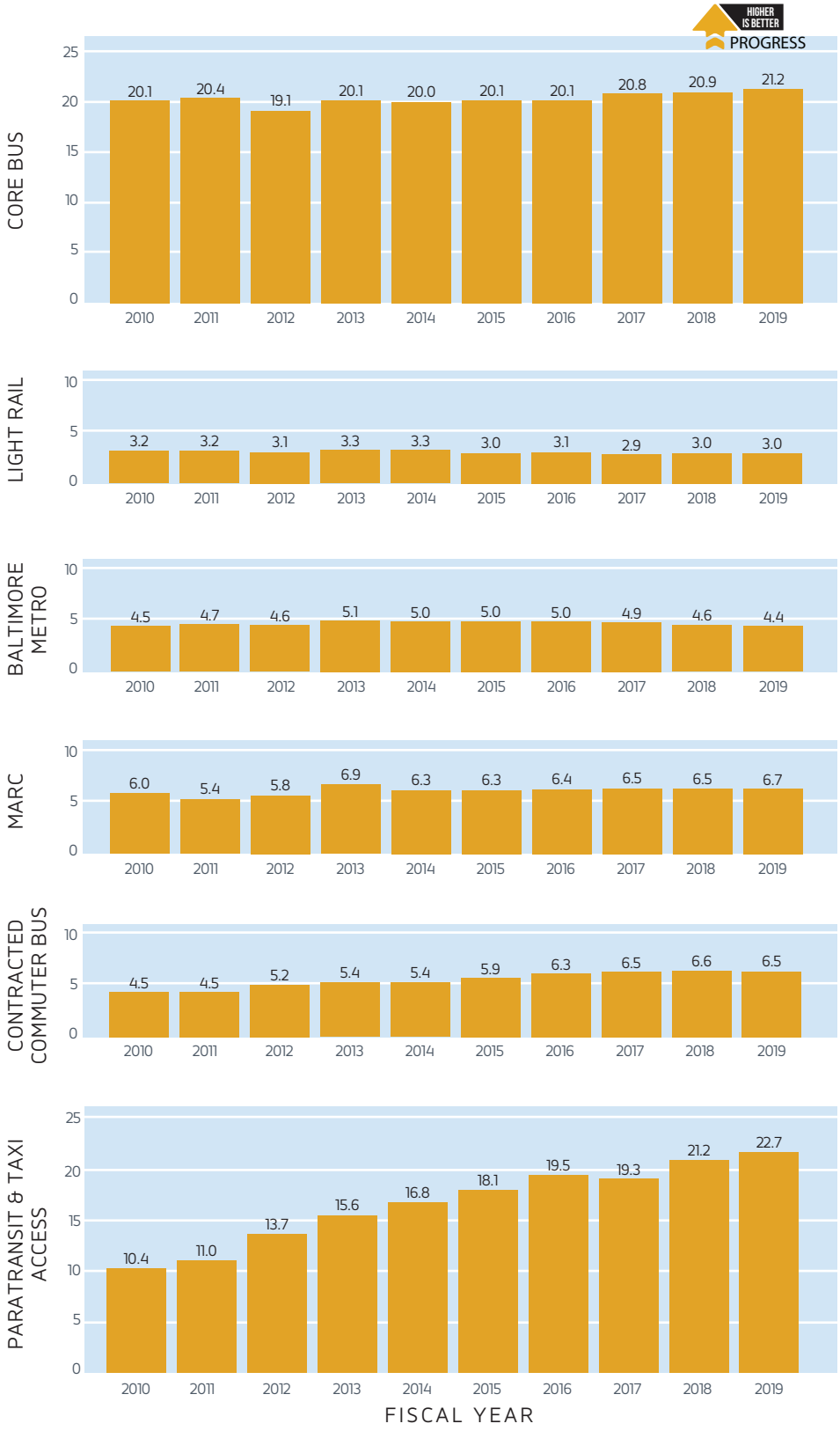
*2018 data is revised from previous report.

**2019 data is preliminary and subject to change.

ANNUAL REVENUE VEHICLE MILES OF TRANSIT SERVICE PROVIDED*

TARGET ACHIEVED

Revenue vehicle miles measure each mile for which a transit vehicle is in service and accepting customers. This measure indicates transit's level of service.



*All units are revenue miles (millions). Excludes Locally Operated Transit Systems (LOTS) and WMATA.

Why Did Performance Change?

- MDOT MTA expanded scheduled trips on BaltimoreLink, thereby increasing the vehicle revenue miles
- Supplemental bus service to select Baltimore City Public Schools was established, increasing service and vehicle revenue miles
- Since we have an aging population, more people are qualifying for and using MobilityLink (paratransit)
- Baltimore Metro SubwayLink continued to perform scheduled track repair and maintenance, having an impact on the revenue miles but little impact on the riding public

What Are Future Performance Strategies?

- MDOT MTA will continue renewing its rolling stock of transit vehicles to ensure future reliability
- The Purple Line, a 16-mile Light Rail line that will connect Bethesda to New Carrollton, will increase vehicle revenue miles via increased service
- MDOT MTA plans to increase MobilityLink paratransit service and thereby increase vehicle revenue miles

GOAL: Maintain a High Standard and Modernize Maryland's Multimodal Transportation System

Preserve, maintain, and modernize the State's existing transportation infrastructure and assets

OBJECTIVES:

- **Preserve and maintain State-owned or funded roadways, bridges, public transit, rail, bicycle and pedestrian facilities, ports, airports, and other facilities in a state of good repair**
- **Strategically modernize infrastructure through new and innovative technologies, enhanced partnerships, design standards, and practices to facilitate the movement of people and goods**
- **Use asset management to optimize public investment and ensure the sustainability of transportation infrastructure**

A well-maintained system ensures the safety of its users, efficient movement of goods, and timely delivery of services. MDOT is committed to maintaining the statewide transportation system in order to foster economic development and a high quality of life for residents. In the FY 2020-FY 2025 CTP, $2.315 billion is set aside for projects related to congestion reduction, safety, highways, and bridges.

Generally, $512.0 million of major system preservation projects were completed as of 2019. The FY 2020-FY 2025 CTP lays out $296.6 million in minor system preservation projects that address rehabilitation and resurfacing of highway and bridge segments throughout Maryland, safety and crash prevention, and 76 more general intermodal rehabilitation projects.

For MDOT SHA and MDTA in particular, $1.447 billion is allocated in the FY 2020-FY 2025 CTP for the resurfacing of roadways and construction and rehabilitation of bridges. As of 2018, 89% of Maryland roadways were up to acceptable overall pavement condition. In 2019, MDOT SHA and MDTA completed several signifigant maintenance and modernization projects. In FY 2019, MDOT SHA spent $165.1 million on construction to replace, rehabilitate, and preserve structures. MDOT SHA and MDTA continue to upgrade Maryland's roadways so that the State can remain competitive and connected.

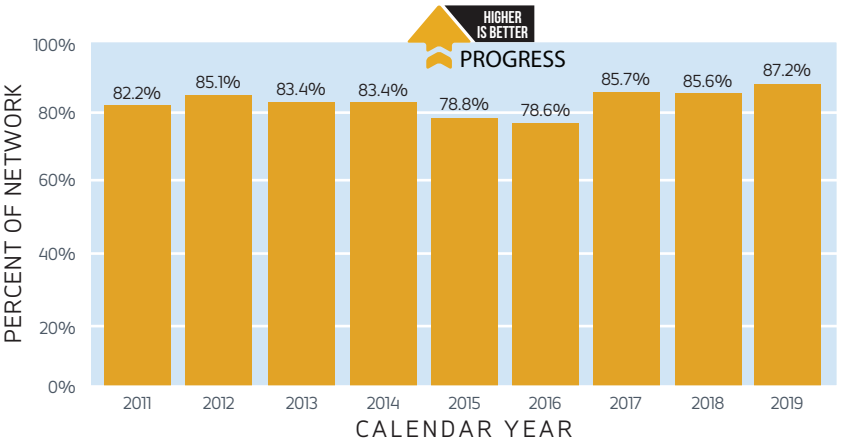
MDOT MTA continues to maintain and upgrade transit facilities throughout the State, particularly the Light RailLink system. MDOT MTA has set aside approximately $5.0 million for Light RailLink track emergency repairs, and continues to monitor transit infrastructure for assets that may be nearing a midpoint or end in their useful life. Beyond that the FY 2020-FY 2025 *draft* CTP sets aside funds for MDOT MTA to completely overhaul and replace at least 171 MARC coaches and at least 48 locomotives. Other MARC facility improvements are also outlined in the CTP, including station improvements, positive train control technology, and general improvements along three major lines.

OBJECTIVE:

Preserve and maintain State-owned or funded roadways, bridges, public transit, rail, bicycle, and pedestrian facilities, ports, airports, and other facilities in a state of good repair

PERCENTAGE OF THE MDOT SHA NETWORK IN OVERALL PREFERRED MAINTENANCE CONDITION

The overall condition of the network is indicative of the positive effect that asset management strategies have on existing highways. Effective asset management strategies ensure continued usability, quality, and safety along Maryland's roadways.



Target: 85% Annually

Why Did Performance Change?

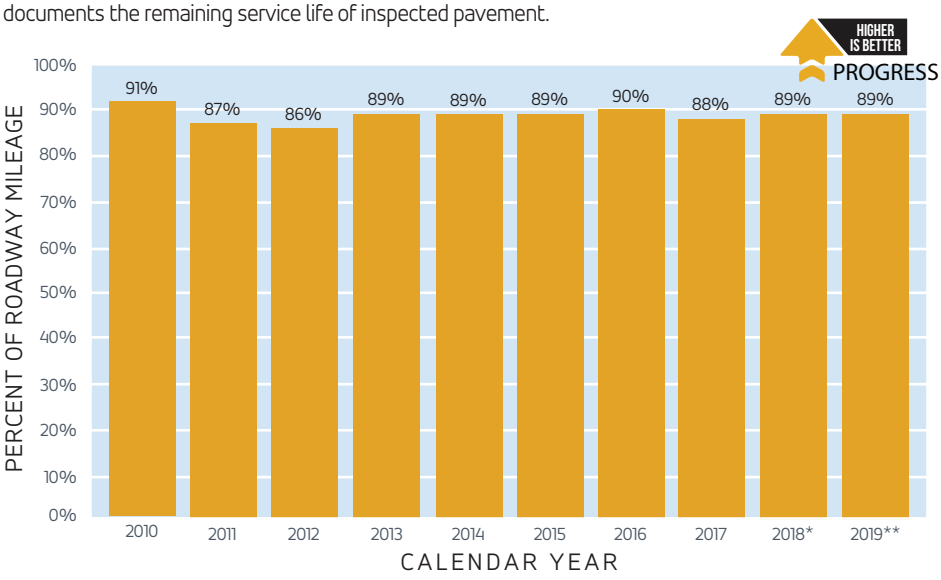
- Made small, incremental progress over the past three years to improve the level of service after a significant increase in the level of service from 2016-2017
- For a third straight year, the winter weather has been relatively light or average, which minimizes damage to assets and allows maintenance work crews to perform additional preventive maintenance work, such as line striping, pavement markings, delineator replacement, lighting maintenance, and drainage work

What Are Future Performance Strategies?

- Invest in road repair projects, such as sign modernization, lighting replacement, repaving, and foliage maintenance while ensuring adequate contract resources that support these activities
- Collaborate with finance and procurement and contract management offices within MDOT to secure funding for further system preservation and modernization
- Evaluate the efficiency and effectiveness of many of the maintenance programs and policies

OVERALL ACCEPTABLE PAVEMENT CONDITION

Overall pavement condition is based on remaining service life, measured on a scale of 0 to 50 years to describe pavement condition. Ride quality, functional cracking, structural cracking, and rutting data are collected utilizing Automated Road Analyzer (ARAN) vehicles; friction data is collected using skid trucks. Pavement condition can affect safety, efficiency, mobility, and accessibility to services and goods throughout Maryland. To assess pavement quality, MDOT inspects its roads annually and documents the remaining service life of inspected pavement.



Target: 90% Annually

*2018 data is revised from previous report
**2019 data is preliminary and subject to change.

Why Did Performance Change?

- MDOT SHA focused on preparing for future federal rulings on nationwide pavement performance measures introduced through the Moving Ahead for Progress in the 21st Century Act (MAP-21) legislation
- Continued increased use of non-traditional and innovative pavement preservation treatments, where appropriate, to extend the service life of MDOT SHA roadways at the lowest possible cost

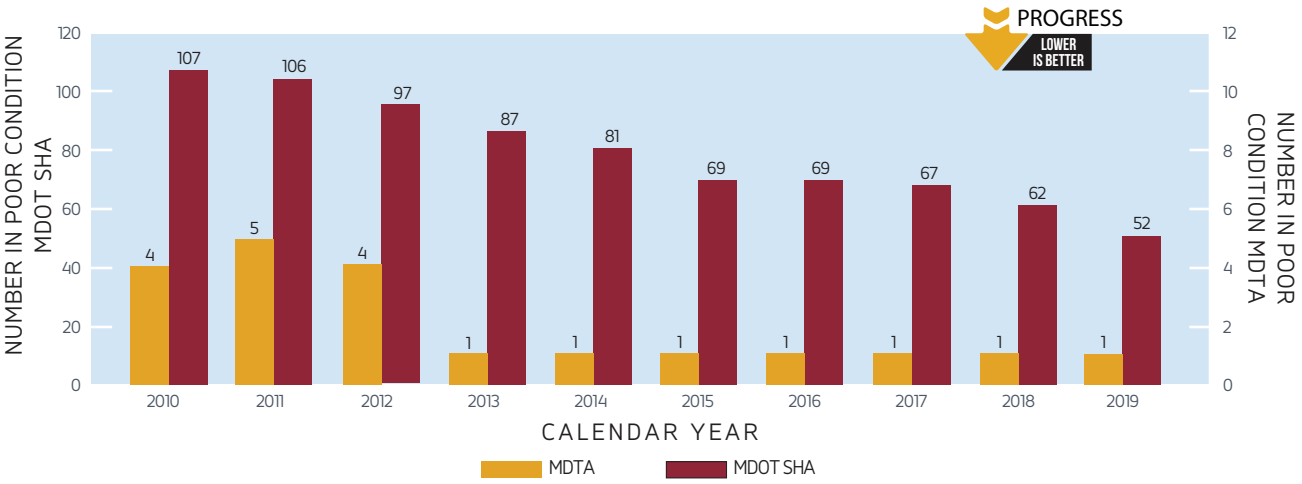
What Are Future Performance Strategies?

- Target low surface friction locations on MDOT SHA roadways and expand the use of recycled materials (e.g., concrete, asphalt) in MDOT SHA roadway projects in a responsible manner
- Continue to implement the Federal Highway Administration (FHWA) and MDOT SHA Pavement Preservation Program to strategically utilize system preservation activities
- Focus on higher-priority prevention and maintenance and monitor high demand roadway degradation

NUMBER OF BRIDGES AND PERCENT THAT ARE IN POOR CONDITION

ON TRACK

The poor condition rating (also referred to as structurally deficient) is an early warning sign for engineers to initiate the rehabilitation or replacement process and is used when prioritizing and recommending system preservation funding. Bridge condition rating is based on a federal scale. This scale ranges from 0 (closed to traffic) to 9 (relatively new), and applies to three key parts of a bridge. The bridge is made of a deck (riding surface), superstructure (main deck support), and substructure (support of the superstructure and deck). If any of these elements is rated as a four or less, the bridge is considered structurally deficient per federal standards. A bridge is not considered unsafe if it is structurally deficient; unsafe bridges are closed. Bridges not in good repair can restrict mobility, contributing to congestion and increased travel time, leading to increased wear on roadways.



Why Did Performance Change?

- MDOT SHA continued an aggressive bridge rehabilitation and preservation program, which has over 30 contractor construction crews working full time year-round, addressing bridges rated as poor, minimizing the number of bridges that would have deteriorated to a poor rating without rehabilitation, and creating plans to replace bridges rated as poor that cannot be repaired
- MDOT SHA efficiently and economically used all funding received; as a result, MDOT recorded 52 MDOT SHA bridges rated as poor condition (also known as structurally deficient), the lowest level since tracking began and one of the lowest percentages of any state DOT in the nation
- MDTA continued to utilize its overhauled and enhanced inspection program to better identify, report, and address inspection findings and moved toward a system-wide preventative maintenance and preservation focus; emphasis over the next few years will be an advanced response to needs identified in the annual inspection reports
- MDTA continued aggressive system preservation improvements to all facilities and assets in need of major rehabilitation or replacement before the conditions worsen. This program resulted in significant improvements to the MDTA infrastructure

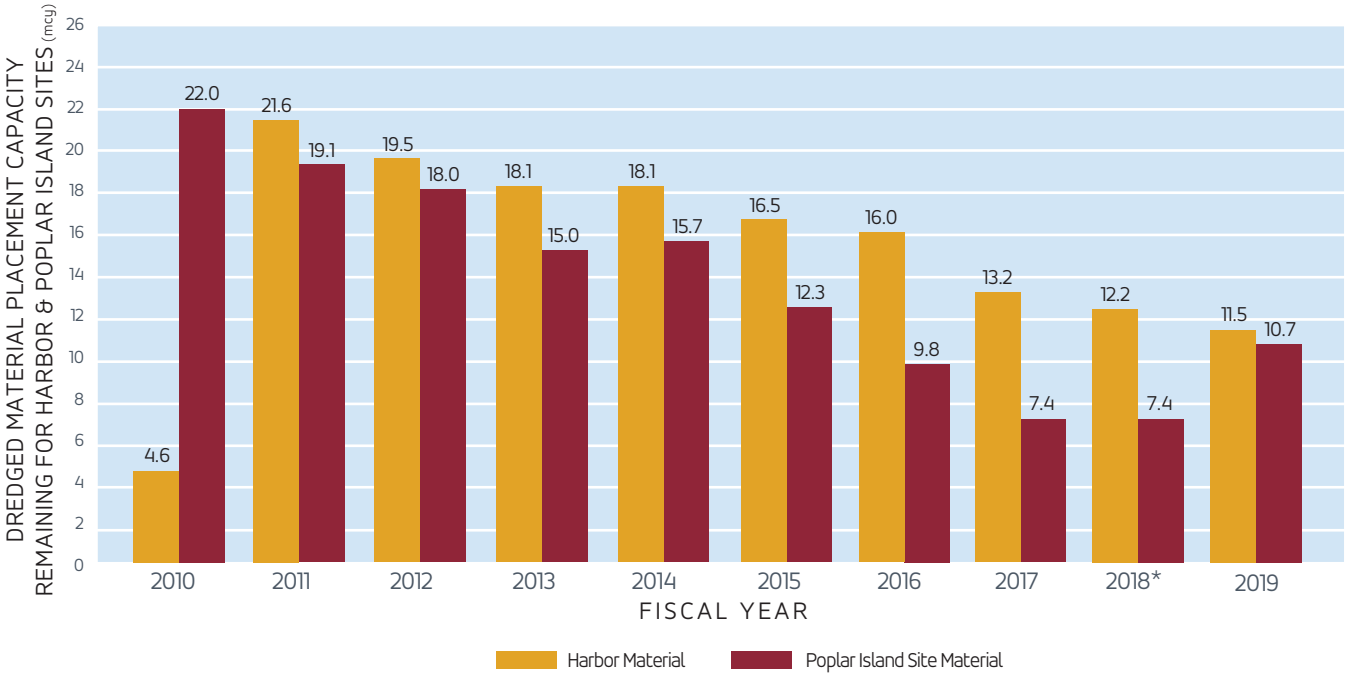
What Are Future Performance Strategies?

- Continue to perform immediate structural evaluations, including scour evaluations, on water crossings after local storm events in the area of the storm
- Continue to deliver high-priority projects, such as: multi-facility structural steel painting projects, deck, superstructure and substructure rehabilitation of various bridges, the I-895 Bridge replacement, deck rehabilitation of the Westbound Bay Bridge, cleaning and painting of structural steel of the Westbound Bay Bridge, suspension span rehabilitation on the Bay Bridge, replacement of deck and superstructure of Bridge over Patapsco Flats
- Continue to expand the current system preservation program to include preventative maintenance activities, which will prolong the life of the existing infrastructure such as newly-implemented facility-wide bridge deck washing and on-call painting and deck sealing programs
- Continue utilization of the design and construction contract schedule to perform structural repairs in the high-priority category of the annual inspection, existing preventative maintenance programs, implementation of standardized schedules, and MDTA-wide best practices
- Address over 300 bridges annually with MDOT SHA's Bridge Preservation Program with the goal of bringing the State's structures to a state of good repair

DREDGED MATERIAL PLACEMENT CAPACITY REMAINING FOR HARBOR SITES AND POPLAR ISLAND

ON TRACK

MDOT MPA maintains shipping channels by obtaining and managing dredged material placement sites. These sites ensure that the Port remains accessible and safe.



Harbor Target: Maintain a rolling 20-year plan for adequate dredged material placement capacity

Poplar Island Target: Maintain a rolling 20-year plan for adequate dredged material placement capacity

*2018 data is revised from pervious report

Why Did Performance Change?

- Initiated the permitting and design for a second 50-foot deep berth at Seagirt Marine Terminal due to increasing containerized cargo growth
- Continued to refine Harbor dredged material placement capacity and dredging needs
- FY 2018 Harbor dredged material capacity remaining was decreased by 0.7 mcy as a result of the removal of the Kurt Iron Slip, which will be developed for future terminal use
- Construction of the first lift of the base dike necessary for the Stage 1 expansion of the Cox Creek Dredged Material Containment Facility was initiated in FY 2019
- The State's Dredged Material Management Program (DMMP) continued to support the U.S. Army Corps' Federal DMMP, which was updated and approved in FY 2018
- Safety and mobility efforts to ensure unimpeded shipping access to the Port have been effective; the Port of Baltimore compares extremely well with the other fully functioning U.S. East Coast ports with 50-foot deep channels

What Are Future Performance Strategies?

- Continue construction of the base dike widening, complete construction of the Operations and Maintenance Complex, complete the remediation associated with demolition of Building 201, and advance the design and permitting for the dike raising to elevation +60 feet
- Continue to explore acquisition of the property adjacent to Cox Creek, now owned by Tronox
- MDOT MPA will continue construction of the next increment of dike raising for Masonville to reach its planned capacity and is scheduled for completion in FY 2020
- The FY 2020-FY 2025 CTP includes $432.1 million to implement the Governor's Strategic Plan for Dredged Material Management, which will help maintain shipping channels

TRANSIT ROLLING STOCK WITHIN USEFUL LIFE BENCHMARK

Useful life is a metric that gauges the condition of transit vehicles. Each asset type has a unique useful life. An asset reaching its useful life will need to be replaced or repaired. This measurement tells agencies when to expect repairs and replacement.

TRANSIT VEHICLES	2019 PERCENT OF VEHICLE STOCK WITHIN USEFUL LIFE	TARGETS
Baltimore Metro	0%*	**11%**
MARC	100%	**100%**
Light Rail	100%	**100%**
Paratransit	41%	**99%**
Core Bus	83%	**95%**

*78 new rail cars will be delivered between January 2021 and January 2023.

Why Did Performance Change?

- MDOT MTA has an approved agency-wide plan and a group plan for locally operated Tier II transit systems
- Completed pilot Asset Management Program at Eastern Bus garage including visually collecting inventory data and conducting condition assessments on sample inventory; this will ensure a proper asset hierarchy and a complete inventory
- Recently completed the update on inventory and TERM Analysis, reflecting changes in the asset base over the past year, and improving the asset details

What Are Future Performance Strategies?

- MDOT MTA is replacing 78 Baltimore Metro cars in the 2021-2023 time frame that will replace the original Metro cars purchased in the 1980s; although the cars exceed the Federal Transit Administration (FTA) definition of useful life, they have received overhauls and regular maintenance to extend their life and to operate safely and reliably
- Continue to purchase 70 new buses each year
- Continue overhauling 63 MARC Train passenger cars and Light RailLink railcars
- Continue replacement of Mobility Link paratransit vehicles

OBJECTIVE:

Strategically modernize infrastructure through new and innovative technology, enhanced partnerships, design standards, and practices to facilitate the movement of people and goods

AVERAGE TRUCK TURN TIME AT SEAGIRT MARINE TERMINAL

Truck turn times inform Port officials and logistics coordinators of Port efficiency and product availability. Turn times are a critical part of goods delivery not only within Maryland, but nationwide and globally as well. Shorter turn times translate to higher throughput capacity and environmental benefits in the long term.

Truck turn times are measured using a truck's radio-frequency identification (RFID) tag. When a truck enters Seagirt, the RFID is read by a scanner at the gate. Aside from providing additional security, this scanner measures the amount of time a truck spends in Seagirt and that final number is the turn time for the truck. In 2019, the average truck turn time was 78 minutes improved from 89 minutes in 2018.

Why Did Performance Change?

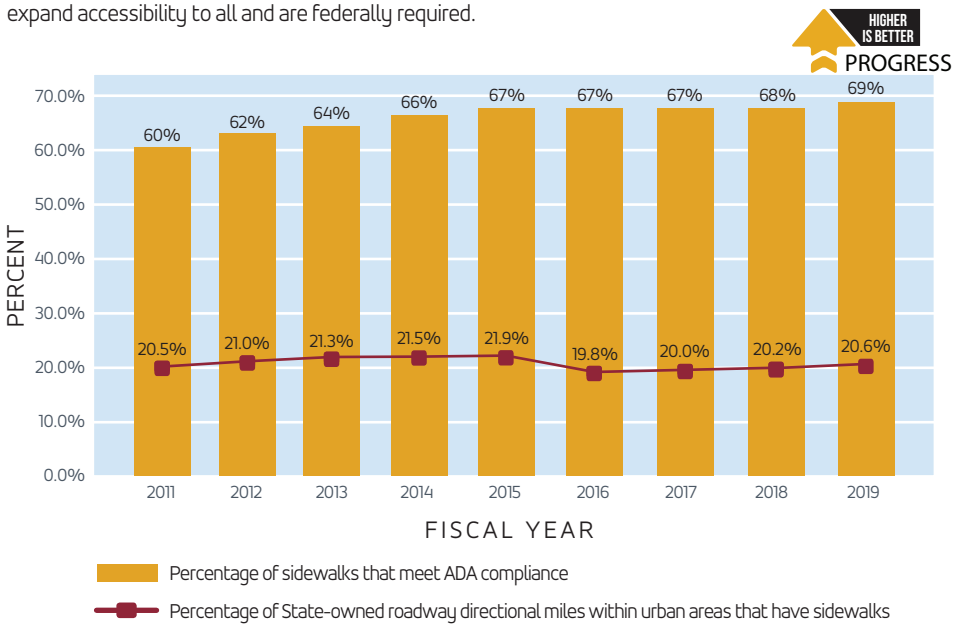
- Enhancements to the Terminal Operating System (TOS) have facilitated handling of larger volumes and minimized down time
- Improved terminal layout (e.g. reefer racks) expanded container storage areas
- Enhancements to truck drive lanes improved safety and efficiency
- Increased inbound truck gate lanes from 8 to 13 and utilized four additional rubber-tired gantry (RTG) cranes in the yard resulting in improved handling times for import loads to truckers
- Increased usage of website by truckers/Beneficial Cargo Owners (BCOs) for release information and reduced time in customer service
- Improved planning in order to maintain adequate staffing levels on heavy days
- Improvements to the Transportation Worker Identification Credential (TWIC) program facilitate a balance of security and commerce

What Are Future Performance Strategies?

- Continue implementing Phase Two of the Seagirt Marine Terminal Modernization project to provide a second 50-foot deep berth at Seagirt
- Widen and straighten the marine access channel to Seagirt Marine Terminal
- Continue the Quality Cargo Handling Team (Q-CHAT) to further improve containerized cargo handling
- Evaluate business processes to ensure gate and terminal processes are not adversely impacted by existing and proposed commercial improvements

PERCENTAGE OF STATE-OWNED ROADWAY DIRECTIONAL MILES WITHIN URBAN AREAS THAT HAVE SIDEWALKS AND PERCENT OF SIDEWALKS THAT MEET AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE

Sidewalks facilitate pedestrian movement and general accessibility. ADA-compliant sidewalks expand accessibility to all and are federally required.



Target: Increase sidewalks in urban areas by 0.5% and ADA compliance by 2% per year

Why Did Performance Change?

- Invested $3.6 million in FY 2019 to design and construct new sidewalks, including the construction of new directional miles of sidewalk in MD 424 in Anne Arundel County
- Invested $6.8 million in FY 2019 to design and construct sidewalk improvements to address ADA accessibility, including the reconstruction of sidewalk to ADA compliance along MD 27 in Carroll County and MD 331 and MD 334 in Caroline County
- Developed a programmatic objective statement to assist in identifying and prioritizing critical ADA compliance projects

What Are Future Performance Strategies?

- Collaborate with urban counties and local governments to identify new sidewalk and shared use path projects based on prioritized missing links, local requests, and identified needs for safety and access
- Support safe pedestrian access along State Highways for the New Sidewalk Construction for Pedestrian Access Program and the Sidewalk Reconstruction for Pedestrian Access Program (ADA Compliance) in the FY 2020-FY 2025 CTP

OBJECTIVE:

Use asset management to optimize public investment and ensure the sustainability of transportation infrastructure

MDOT continues to optimize asset management by gathering industry best practices and identifying opportunities to improve asset management policies, operation, and software. Sustaining the transportation infrastructure and assets also requires preventative maintenance. MDOT has implemented many new initiatives related to capturing better asset data to inform better data decision making. In addition it has developed a strategic asset management plan with five key goals and over a dozen stratagies that are underway to implement asset management practices.

GOAL: Improve the Quality and Efficiency of the Transportation System to Enhance the Customer Experience

Increase the use of technologies and operational improvements to enhance transportation services and communication to satisfy our customers

OBJECTIVES:

- **Increase the efficiency of transportation services through partnerships, advanced technologies, and operational enhancements to improve service delivery methods**
- **Enhance customer satisfaction with transportation services across all modes of transportation**
- **Minimize travel delays and improve predictability of travel times on Maryland's transportation system**
- **Apply enhanced technologies to improve communications with the transportation system users and to relay real-time travel information**

Every day, millions of people drive a vehicle, ride a bus or train, walk, bike, and use every aspect of Maryland's transportation system. It is vital for MDOT and its Transportation Business Units (TBUs) to ensure they are continually meeting the needs of all users and providing efficient, quality service. MDOT continues planning for the Maryland Traffic Relief Plan (TRP). The I-495 and I-270 Public-Private Partnership (P3), which aims to reduce congestion in the National Capital Region by partnering with the private sector on improvements on both I-495 and I-270, held twelve public workshops in 2019 to present information on National Environmental Policy Act (NEPA) study, and pre-NEPA activities covering the two corridors and seek the public's input. The TRP is a combination of P3 efforts on I-495, I-270, and other innovative projects such as Smart Signals, I-95 Express Toll Lanes℠ (ETL) and the I-695 Transportation Systems Management and Operations (TSMO) projects. Since May 2018, all Maryland residents are able to acquire an *E-ZPass*® transponder with no upfront cost. MDTA also unveiled its new *E-ZPass*® Maryland mobile-friendly website in 2018, making it easier for customers to access their accounts. MDOT MVA continues to improve customer service and customer wait times, as it has done for the past several years, in alignment with the Governor's Customer Service Plan. In 2019, the average customer wait time statewide was 25.1 minutes, up from the previous year but down from 28.1 minutes in 2014. This was achieved through the combination of increased appointments and the use of Alternative Service Delivery (ASD) systems that do not require face-to-face interactions. Customers can conduct many MDOT MVA-related tasks online, such as appointment scheduling, registration renewal, or use any one of the more than 50 self-serve kiosks at MDOT MVA locations across the State.

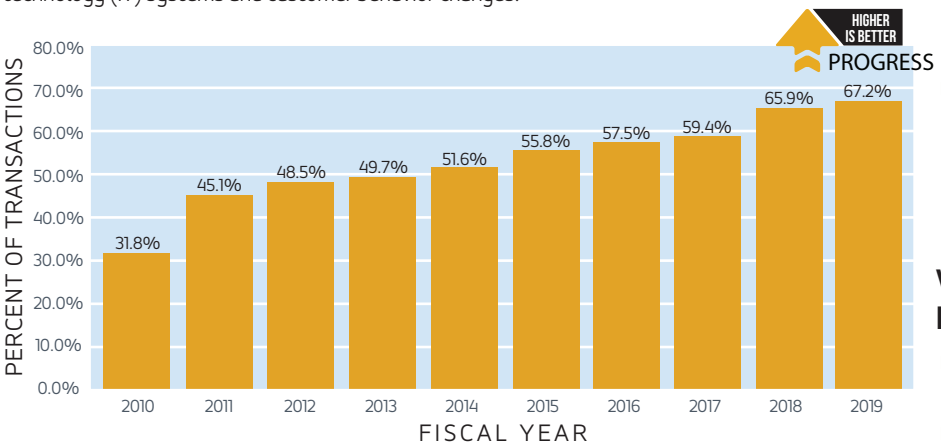
In order to continue to improve customer experience and efficiency, MDOT looks to utilize new tools and technologies. MDOT SHA is utilizing software that adjusts the timing of traffic signals to synchronize an entire corridor based on real-time traffic conditions using artificial intelligence to keep traffic moving. MDOT MVA created a REAL ID Lookup Tool that allows residents to check online to see if they are REAL ID ready, or if an action is needed, then links them to the appropriate information to schedule an appointment. MDOT MVA is participating in a Driver Alcohol Detection System for Safety pilot. As a part of the pilot program, several sensors have been installed on MDOT MVA fleet vehicles. The sensors automatically analyze the alcohol in a driver's breath and, if the driver is impaired with a breath alcohol concentration at or above the legal limit, the vehicle will not move. Maryland is the first state in the nation to test this technology.

OBJECTIVE:

Increase the efficiency of transportation services through partnerships, advanced technologies, and operational enhancements to improve service delivery methods

MDOT MVA ALTERNATIVE SERVICE DELIVERY (ASD) TRANSACTIONS AS PERCENT OF TOTAL TRANSACTIONS

Alternative services allow MDOT MVA to operate more efficiently by providing reliable and convenient service delivery to customers without requiring a transaction in-person. These services include web transactions, self-serve kiosks, mail-in options, and others. In order to be successful, alternative services must be adopted in conjunction with the development of new information technology (IT) systems and customer behavior changes.



Target: 72.4% by 2020

Why Did Performance Change?

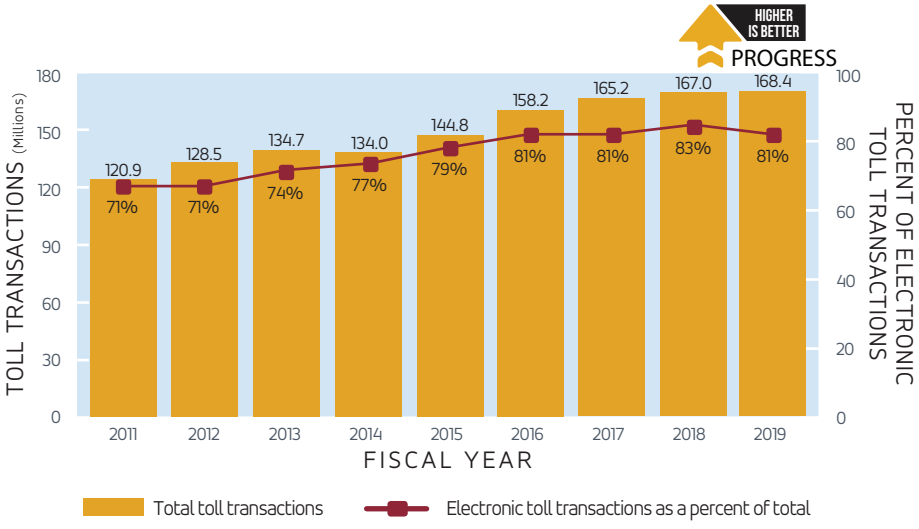
- ASD has continued to increase year over year and specifically has increased from FY 2018 to FY 2019, even with the increase in walk-in customers that were previously ASD eligible due to Real ID compliance regulations
- The increase in ASD has been sustained with technology enhancements and policy interventions on the vehicle side: vehicle tags are now eligible to be returned using branch office mobile tablets and disability placards are eligible for renewal using ASD

What Are Future Performance Strategies?

- Increase Real ID compliance for all customers and encourage the use of ASD eligible services
- Continue the use of email notifications of customer services and requests and encourage use of ASD-based transactions when eligible
- Periodically review the MDOT MVA website for customer content and ease of use
- Development and implementation of Customer Connect, an enterprise-wide software platform that provides a 360-degree view of customer vehicle and driver services

PERCENT OF TOLL TRANSACTIONS COLLECTED ELECTRONICALLY*

Electronic toll collection (ETC) systems expedite the toll collection process, reduce delays at toll plazas, decrease congestion and emissions, and are available at all nine toll facilities across the State.



Target: Short-Term Target: 82%, Long-Term Target: 85%

*Toll collections are paid as cash, ticket, or electronic transaction. ETC includes Transponder Tolls and Video Tolls which might be processed with or without an account (with an account Video Tolls are referred to as I-tolls).

Why Did Performance Change?

- The number of *E-ZPass*® accounts increased due to an increase in total traffic and a public outreach campaign to encourage *E-ZPass*® use

What Are Future Performance Strategies?

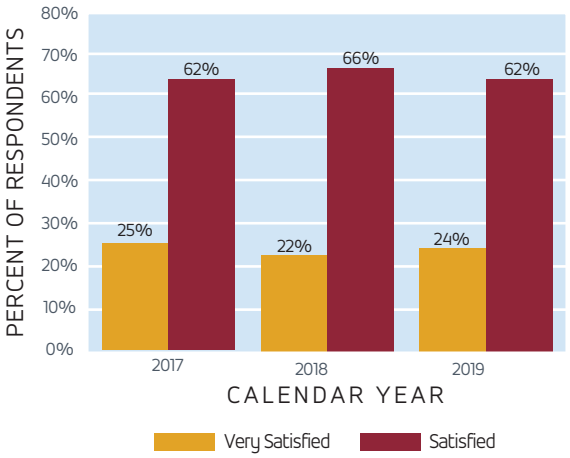
- The "Free Transponders" program is expected to continue to facilitate increased electronic toll collection
- MDTA is working with our new vendor to revamp the MD *E-ZPass*® website
- Cashless toll collection began in October 2019 at the Francis Scott Key Bridge (I-695) in Baltimore and the Thomas J. Hatem Memorial Bridge (US 40) in Harford and Cecil counties
- MDOT will implement new tolling options to save Marylanders more than $28.0 million over five years, the third round of toll relief in the State resulting in a cumulative savings of $344.0 million

OBJECTIVE:

Enhance customer satisfaction with transportation services across all modes of transportation

OVERALL SATISFACTION WITH MDOT

Customer satisfaction surveys provide MDOT with direct feedback from customers to help MDOT measure its success in providing exceptional customer service. With these surveys, MDOT and its TBUs can identify their major successes and challenges and develop new investment prioritizations to maintain and grow their customer bases.



Why Did Performance Change?

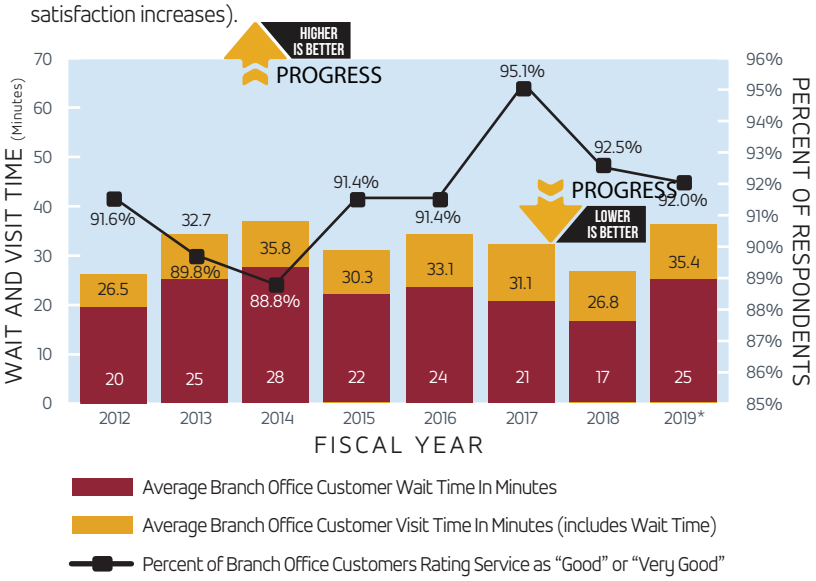
- MDOT MVA expanded hours of operation, opened additional offices in high-demand areas, and greatly increased ability for customers to schedule appointments
- Expanded Parkville and Columbia branch office services to meet the demands of customers requesting REAL ID services
- MDOT MPA added new check-in stations, carpeting, restrooms, a VIP lounge, traffic flow, and a public address system for customer comfort at the Cruise Maryland Terminal
- MDOT MTA began construction of the Purple Line, which runs through Montgomery and Prince George's Counties, and will better connect Marylanders to the Washington Metropolitan Area Transit Authority's (WMATA) Orange, Green and Red Metrorail lines, MARC Train's Brunswick, Camden and Penn lines, and Amtrak at New Carrollton
- An increased number of destinations served by nonstop flights, to more than 90 destinations from BWI Marshall Airport, further secured the Airport's majority market share in the Washington-Baltimore region

What Are Future Performance Strategies?

- MDOT SHA will install smart signals to improve traffic operation and ease congestion on 14 major corridors across the State and MDOT MTA will install transit signal priority (TSP) traffic signals along select corridors in Baltimore City which will enhance pedestrian, transit, and driving experiences while improving transit reliability
- MDOT MTA is leading development of a new Regional Transit Plan for Central Maryland that will provide a 25-year vision of mobility and define public transportation goals for Central Maryland
- MDOT MVA will continue to provide quick and efficient service to ensure all Marylanders have the information to become REAL ID compliant by the October 1, 2020 deadline
- MDOT MAA is embarking on terminal expansion projects to meet the growing customer demand, including expanding Concourse A, reconfiguration of the Concourse A/B Connector, design of a new C/D Connector and baggage handling systems, reconfiguration of the federal inspection services area, and renovated restrooms
- MDOT SHA will explore options to improve customer service training and will hold regular classes with their Customer Care Management System
- MDOT MAA will launch a new, robust Wi-Fi system to better enhance the customer experience and is developing a new Airport-wide customer service training program for all BWI Marshall Airport employees

MDOT MVA BRANCH OFFICE CUSTOMER WAIT AND VISIT TIME VERSUS CUSTOMER SATISFACTION RATING

Average customer wait and visit time is a key indicator of the quality and efficiency of service delivery to customers and is directly related to customer satisfaction (i.e., as MDOT MVA branch customer wait and visit time decreases, customer satisfaction increases).



Target: 93% Satisfaction Rating as "Good" or "Very Good" by 2018, Visit Target: 25.3 Min., Wait Time Target: 14.8 Min.

* 2019 data is preliminary and subject to change.

Why Did Performance Change?

- MDOT MVA implemented the Real ID LookUp Tool to help customers determine their Real ID compliance and added additional appointments to serve Real ID customers
- MDOT MVA has seen a significant increase in the number of customers that must visit a branch office to provide documentation and become Real ID compliant due to Real ID compliance requirements
- MDOT MVA has extended branch office hours on Thursdays and Saturdays and opened ancillary offices to meet the increased demand for branch services

What Are Future Performance Strategies?

- MDOT MVA will continue to offer extended branch office hours and increase capacity at branch offices with ancillary offices to process customers
- Continue to allow scheduling of branch office appointments to better serve customers in a pre-scheduled system
- Maintain additional staffing to accommodate the satellite areas to the branch office and reduce the down time for employees

OBJECTIVE:

Minimize travel delays and improve predictability of travel times in Maryland's transportation system

PERCENT OF TRANSIT SERVICE PROVIDED ON TIME*

On time performance (OTP) is an important indicator of service quality and efficiency and correlates highly with system usage and customer satisfaction.

MODE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Core Bus*	87%	85%	83%	82%	81%	81%	85%	77%	68%	69%
Light Rail	97%	98%	96%	97%	96%	97%	98%	96%	94%	95%
Baltimore Metro	95%	97%	96%	97%	96%	95%	96%	96%	94%	94%
MARC	89%	89%	93%	93%	92%	92%	94%	91%	91%	87%
Mobility Paratransit & Taxi Access	91%	89%	90%	89%	91%	88%	92%	93%	93%	86%

* The method of calculation for measuring Core Bus performace has been modified since the previous report; data prior to 2018 is not compareable.

Why Did Performance Change?

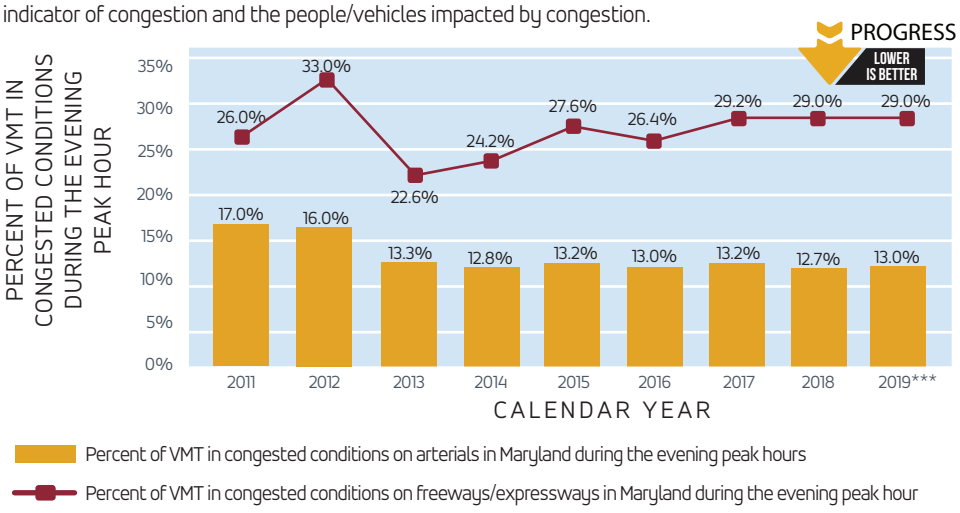
- MDOT MTA continued to advertise partnership with Transit app for accurate real-time arrival data of buses and trip planning
- Adjusted BaltimoreLink trips and schedules to improve reliability and continued to publicize and improve CharmPass, a mobile ticketing application released in 2018
- Moved the Commuter Bus and MARC Operations Control Center (OCC) to new facility and changed the methodology for measuring Commuter Bus OTP using an intelligent transportation management platform (Saucon)

What Are Future Performance Strategies?

- Implement new technology to allow for better service reliability through understanding vehicle and operator behaviors
- Increase technology to allow for faster ticketing transactions through the use of mobile ticketing
- MDOT MTA will use new data to maximize schedule performance and reliability
- Continue to schedule major track maintenance activities during periods of low ridership, minimizing the effect of this work on riders

PERCENT OF VEHICLE MILES TRAVELED (VMT) IN CONGESTED CONDITIONS ON FREEWAYS/EXPRESSWAYS AND ARTERIALS* IN MARYLAND DURING EVENING PEAK HOUR (5-6PM)**

This measure tracks MDOT performance in reducing congestion on the State Highway system. This is an indicator of congestion and the people/vehicles impacted by congestion.



Target: Freeway Target: 30.0% by 2023, Arterial Target: 13.5% by 2023

*In 2017, MDOT SHA moved to ESRI Roads and Highways System; this caused a system-wide shift in the numbers, which are now reported with one decimal to more clearly indicate system performance.

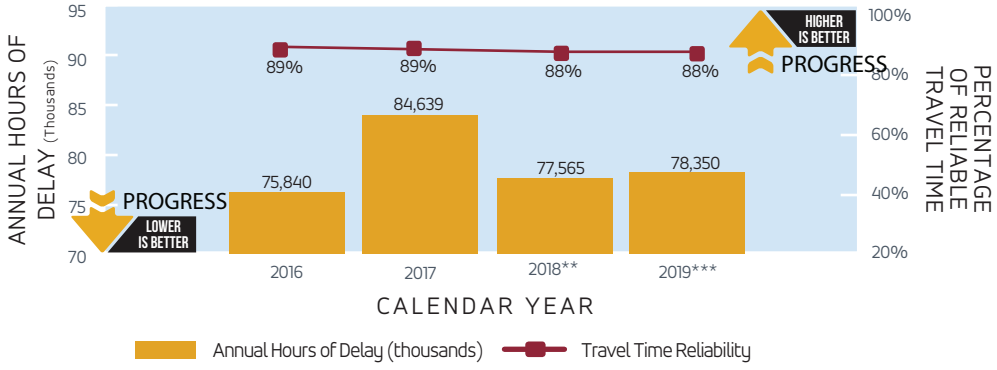
** 2013 through 2018 data changed from previous report.

*** 2019 data is preliminary and subject to change.

ANNUAL HOURS (THOUSANDS) OF DELAY AND TRAVEL TIME RELIABILITY ON THE MDOT HIGHWAY NETWORK*

As the Baltimore and Washington regions continue to grow in population and jobs, more customers will continue to add demand and congestion on much of the transportation system that already operates at or over capacity at peak hours. This measure is an indicator of overall congestion and the number of people/vehicles affected by delay on the Maryland highway network.

As MDOT improves travel time reliability, customers are able to utilize more realistic expectations of their total trip time. MDOT uses a planning time index (PTI) to measure reliability. Any roadway segment that has a PTI less than 1.5 is defined as reliable, and MDOT uses the PTI threshold to determine the percentage of travel time reliability. This understanding allows MDOT to determine if and when system changes need to be made.



Target: 81,450 hours of delay in 2023; 87% travel time reliability in 2023

*Beginning in 2016, the network definition changed to cover the entire MDOT Highway Network (freeways and major arterials). Performance data prior to 2016 pertains to a different network definition and is no longer presented with the MDOT Highway Network (freeways and major arterials) performance.

**2018 is revised from previous report.

***2019 data is preliminary and subject to change.

Why Did Performance Change?

- A steadily growing economy and low unemployment rates has resulted in a slightly increasing VMT, but any increases in usage of major corridors at peak hours have been proportional to VMT increases
- The additional demand during peak hours has a non-linear effect on congestion statistics like annual hours of delay for autos and trucks (i.e., even though peak hour demand grew by a smaller percentage, the congestion impacts were disproportionately higher)
- MDOT SHA's Coordinated Highways Action Response Team (CHART) handled 151,955 events, including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events, and coordinated 56 Strategic Highway Research Program (SHRP2) Traffic Incident Management (TIM) Responder training sessions statewide, of which CHART directly facilitated 21 with 827 responders trained in these sessions

What Are Future Performance Strategies?

- Draft and collaborate on legislation to limit liability for tow companies to clear disabled vehicles and cargo from the travel lanes
- Complete development and engineering design of the US 1 Innovative Technology Corridor Pilot Project and advertise a contract for its construction and implementation
- Major projects developed through the Governor's TRP will significantly reduce congestion on Maryland's highways and provide roadway users with travel options
- MDOT SHA is preparing TSMO solutions for active traffic management and integrated corridor management capabilities
- Modernize transportation infrastructure by incorporating Intelligent Transportation System (ITS) technology
- Evaluate the CHART patrol program to determine continuing improvements in reduction in roadway delays and user cost savings and develop a common operating platform for MDOT operations as part of the One MDOT Multimodal Incident Management effort

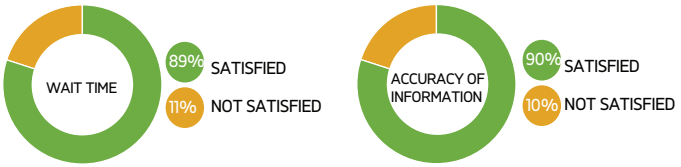
OBJECTIVE:

Apply enhanced technologies to improve communications with the transportation system users and to relay real-time travel information

CUSTOMER SATISFACTION WITH THE ACCURACY OF REAL-TIME INFORMATION SYSTEMS PROVIDED

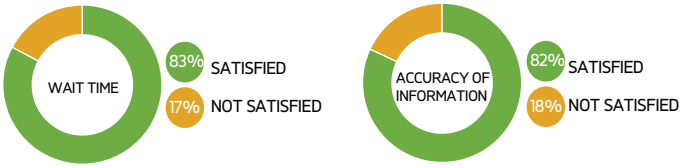
MDOT CUSTOMER SATISFACTION WITH HELPFULNESS AND ACCURACY OF INFORMATION (for CY 2018 or CY 2019)*

MDOT MAA NEXT VEHICLE ARRIVAL SYSTEM CY 2018



Core Bus Tracker System CY 2018

Light Rail Next Train Arrival System CY 2018



MARC Next Train Arrival System CY 2018

Commuter Bus Tracker System CY 2018

CHART (MDOT SHA and MDTA), DMS CY 2019**

MDOT MVA Wait Time Webste 02 CY 2019

*CY 2019 data was not collected for the MDOT MAA Next Vehicle Arrival System, Core Bus Tracker System, Light Rail Next Train Arrival System, MARC Next Train Arrival System, MARC Next Train Arrival System, or Commuter Bus Tracker System. CY 2018 data is shown for these systems.

**It is possible that an increasing number of drivers are obtaining motorist information from other sources (such as cell phones), and thus don't depend on Dynamic Message Signs (DMS) to the extent they once did

Real-time information systems, installed throughout the transportation network and available via web interfaces and mobile devices, provide the most accurate information for customer trip planning and time-management. By surveying customer satisfaction for each real-time information system, MDOT TBUs can observe which systems are utilized most successfully and which systems require improvements.

Why Did Performance Change?

- In summer 2019, MTA launched Realtime OTP for Commuter Bus
- MDOT MAA installed wait time display screens at all four of the security checkpoints to inform customers of the current wait times at each and to provide alternate checkpoint options when available
- CHART, a joint program of MDOT SHA, Maryland State Police (MSP), and MDTA, assists motorists 24 hours a day, 7 days a week, in the Baltimore, Washington, D.C., and Frederick metropolitan areas; CHART saved drivers $1.312 billion in delay costs and reduced travel delay by 32.8 million vehicle-hours
- MDOT MAA completed installation of a new Airport Noise and Operations Management System, which includes 24 new noise monitors throughout local communicates and online WebTrak system to provide the public with historic and real-time flight tracking and noise level data
- CHART provides real-time traffic images and conditions on CHART's website through camera feeds from cameras located throughout the State
- Customer satisfaction with the accuracy of the travel time information provided via Dynamic Message Signs (DMS) by CHART increased to 97% in 2019

What Are Future Performance Strategies?

- MTA is working to launch real-time feeds for all modes in 2020
- MDOT MAA is installing interactive wayfinding kiosks in the BWI Marshall Airport terminal to replace the static light box maps
- CHART will continue to expand DMS, web and telecommunications infrastructure efforts to operate the existing transportation system more efficiently
- MDOT MAA will be replacing the current Red Light Green Light system in the garages to continue providing quick access to available parking spaces
- Biometric entry and exit system will be installed at BWI Marshall Airport to speed international flight processing for U.S. Customs and Border Protection

GOAL: Ensure Environmental Protection and Sensitivity

Deliver sustainable transportation infrastructure improvements that protect and reduce impacts to Maryland's natural, historic, and cultural resources

OBJECTIVES:

- **Protect and enhance the natural, historic, and cultural environment through avoidance, minimization, and mitigation of adverse impacts related to transportation infrastructure, including support for broader efforts to improve the health of the Chesapeake Bay**
- **Employ resource protection and conservation practices in project development, construction, operations, and maintenance of transportation assets**
- **Implement initiatives to reduce fossil fuel consumption, mitigate Greenhouse Gas (GHG), and improve air quality**

MDOT has demonstrated its continued commitment to minimizing adverse impacts on the environment, conserving natural resources, and integrating sustainability into various aspects of transportation systems at the policy, program, and project levels of implementation. MDOT and each Transportation Business Unit (TBU) recognize that the protection of natural resources and conducting business in an environmentally responsible manner are among the core elements of their overall mission. They continue to reduce effects of transportation and built-environment by way of effective planning, interdisciplinary approach to project development, sustainable operations, and maintenance procedures.

MDOT's commitment to environmental protection influences a wide variety of plans, projects, and initiatives and is present in the day-to-day operations of the TBUs. Examples of the far-reaching environmental initiatives of the department include the MDOT MPA Innovative and Beneficial Reuse of Dredged Material Initiative, the Port of Baltimore Dray Truck Replacement Program, and MDOT SHA's Bay restoration projects, implemented to meet regulatory requirements. MDOT MPA was honored for its continued commitment and stewardship of wildlife habitat through outreach and educational programming. The American Association of Port Authorities (AAPA) has honored MDOT MPA for its 10-year stewardship of community education and outreach programs at Masonville Cove, an urban wildlife habitat area along the Patapsco River.

All MDOT TBUs incorporate environmental Best Management Practices (BMPs) as part of the Chesapeake Bay Restoration efforts. To effectively reduce pollution in stormwater runoff from highway projects, MDOT SHA developed a Bay Restoration viewer that allows the public to view completed and proposed highway projects implementing BMPs such as tree planting, removing impervious areas, stream restoration, etc.

Interagency coordination efforts including Maryland's Green Infrastructure Plan and Chesapeake Bay Restoration priorities have facilitated better alignment between transportation, land use, and natural features to minimize or mitigate impacts to the environment. MDOT continues to collaborate with other regional, State, and local agency partners in exploring regional policies to reduce carbon emissions and other pollutants from the transportation sector and improve transportation systems as part of their ongoing participation in the Transportation and Climate Initiative (TCI).

MDOT continues to lead the way in renewable energy by demonstrating leadership and vision in implementing the installation of solar photovoltaic systems on sites owned by MDOT's TBUs to be considered for development. It has become the first State DOT to generate jobs in the process of adding solar power to MDOT's facilities.

MDOT makes a continued commitment to environmental compliance, enhances improvement of its environmental performance through established and innovative processes and adherence to sustainable practices, while maintaining outreach and communication about its environmental activities with the project stakeholders and the general public.

MDOT ENVIRONMENTAL INITIATIVES

MDOT MAA: MDOT MAA has ordered an additional 20 clean diesel heavy-duty transit shuttle buses (15 40-foot and five 60-foot buses) to be used at the BWI Marshall Airport to replace older vehicles on shuttle routes between terminals, airport parking facilities, and the BWI Marshall Airport Rail Station.

MDOT TSO: MDOT issued Master Services Agreements (MSAs) to six qualified contractors to design, construct, commission, finance, operate and maintain photovoltaic (PV) energy facilities at MDOT locations throughout Maryland generating 1.8 megawatts. The MSAs provide MDOT with the flexibility of developing PV energy systems quickly and efficiently. The GHG benefit has increased by 10% over the last year and resulted in 15 metric tons of reductions.

MDOTs leadership of the Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC) continues to build opportunities, financial incentives, and promotion of the purchase of electric vehicles (EVs) and the installation of electric vehicle supply equipment (EVSE) to support the State's EV goals. As of July 31, 2019, there are a total of 21,359 EVs registered in Maryland, of which 11,492 are Battery Electric Vehicles (BEVs) and 9,867 are Plug-in Hybrid Electric Vehicles (PHEVs).

MDOT MTA: As part of the MDOT MTA bus replacement program, 140 buses were delivered in FY 2018 and FY 2019, with 350 additional clean diesel buses expected for delivery in the FY 2019–FY 2024 period.

MDTA: MDTA continues to implement an active environmental management program through the deployment of EV charging stations. In 2019 MDTA initiated construction of EV charging stations at the Baltimore Harbor Tunnel and Fort McHenry Tunnel customer service centers and initiated a feasibility study for EV charging stations at MDTA facilities.

MDOT MPA: MDOT MPA has replaced 173 Drayage Trucks with an ongoing goal to replace 50 trucks per year. They continue to progressively pursue Diesel Emission Reduction Act (DERA) grants to replace or repower diesel engines, marine vessels, and cargo handling equipment, thereby reducing emissions from transportation used at and around the port. It also helped the Canton Railroad install idle-reduction technology in six switcher locomotives that operate at the Port.

MDOT MVA: MDOT MVA continues its energy conservation efforts including management of its carbon footprint, mitigation of emissions, and reducing facility energy consumption by 20% by FY 2020, while providing comfortable cooling and heating temperatures aligned with Maryland's Energy Code. MDOT MVA has conducted an energy audit at Beltsville, Glen Burnie, Easton, Hagerstown, Largo, and Westminster sites and expects temperature adjustments and new conservation devices will reduce MDOT MVA's carbon footprint.

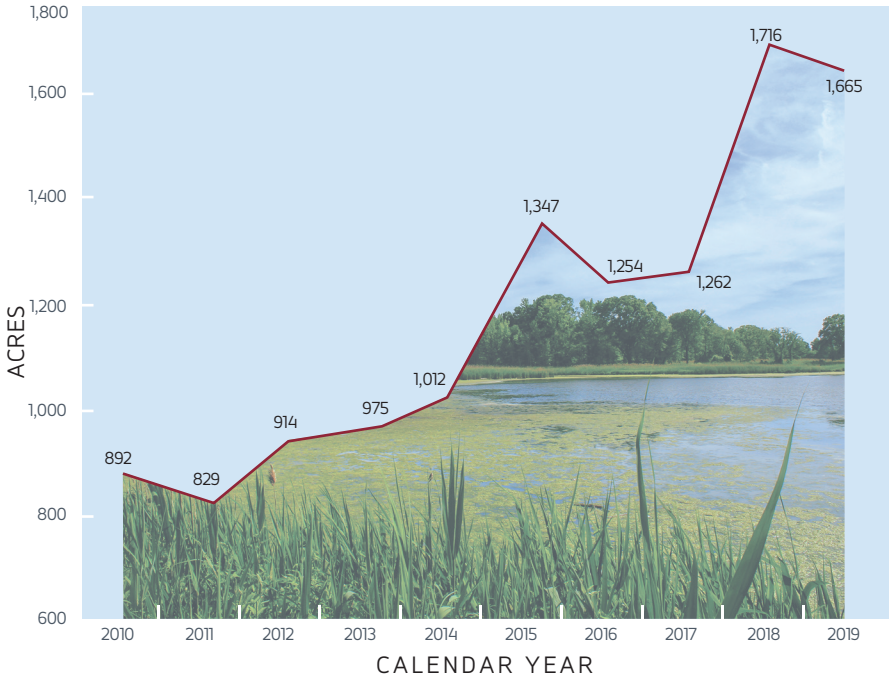
MDOT SHA: MDOT SHA implemented new water quality improvement projects that treated 265 acres of previously untreated impervious surfaces. MDOT SHA continued progress toward its FY 2020 restoration goal of treating 20% of its impervious surface not previously treated by stormwater management controls, reporting 15% treated in its FY 2019 National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) annual report to the Maryland Department of the Environment (MDE).

OBJECTIVE:

Protect and enhance the natural, historic, and cultural environment through avoidance, minimization, and mitigation of adverse impacts related to transportation infrastructure, including support for broader efforts to improve the health of the Chesapeake Bay

ACRES OF WETLANDS OR WILDLIFE HABITAT CREATED, RESTORED, OR IMPROVED*

MDOT agencies are in compliance with the various permits that are granted to construct projects needed to improve the transportation system on land and offshore.



*This measure now includes data provided by MDOT MPA, MDOT SHA, and MDTA cumulatively.

Why Did Performance Change?

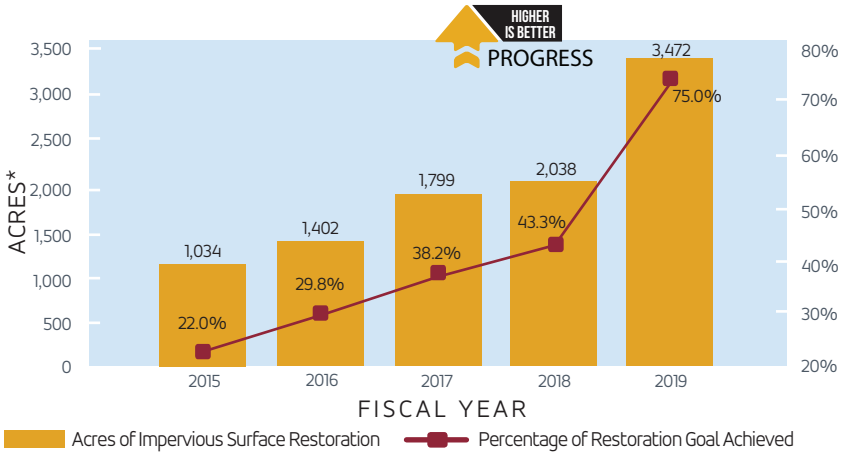
- Installed a trash interceptor at the Dundalk Marine Terminal to prevent trash from entering via the storm drain system into the Patapsco River
- Partnered with Blue Water Baltimore to plant 1,000 trees in Baltimore City and received credits for Total Maximum Daily Load (TMDL) reduction/restoration

What Are Future Performance Strategies?

- Develop a clean air and water strategy for the terminal based on emerging technologies and programs
- Implement a "trash-free Port" pilot program with a tenant at the Port
- Initiate a study to determine carbon sequestration in the created wetland/coastal ecosystems at Hart Miller Island; a Storm Water Improvements contract will be awarded to remove a variety of stormwater pollutants at four terminals: ICTF, Masonville, Fairfield, and South Locust Point Marine Terminal
- The MDOT MPA is planning two projects to reduce the TMDL of pollutants going into the Bay; one is Mercedes pond at Masonville and the other is in partnership with the Maryland Zoo

WATER QUALITY TREATMENT TO PROTECT AND RESTORE THE CHESAPEAKE BAY

This measure tracks MDOT SHA compliance with achieving impervious surface restoration as required by the NPDES MS4 permit. This measure reports the acres of impervious surface treatment associated with Bay restoration projects to determine overall progress toward the 20% restoration goal during the current five-year permit term.



Target: 4,621 Acres by October 2020

* Number of Acres each year are rounded.

Why Did Performance Change?

- MDOT SHA continued implementation of stormwater management and TMDL improvements to reduce pollution entering local waterways and ultimately, the Chesapeake Bay
- MDOT SHA has restored 3,471.6 acres as of FY 2019, which is nearly 75% of its goal of restoring 4,621 acres by October 2020

What Are Future Performance Strategies?

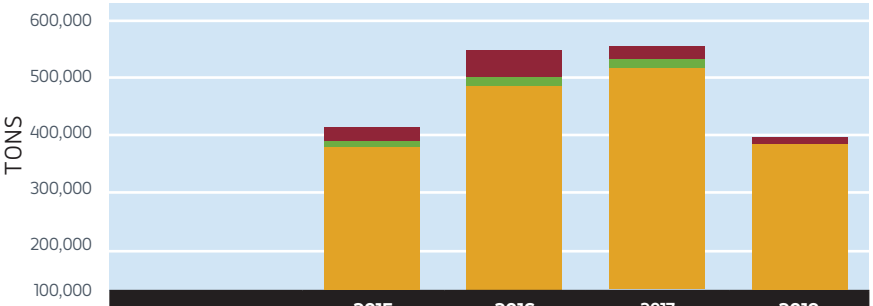
- MDOT SHA is piloting new technology/applications to better track and coordinate inlet cleaning to improve efficiency of those maintenance operations and ultimately increase the amount of pollutants removed before they enter natural systems
- MDOT SHA is investigating and developing approaches to empower local citizen stewardship groups to increase the reach of MDOT watershed restoration resources

OBJECTIVE:

Employ resource protection and conservation practices in project development, construction, operations, and maintenance of transportation assets

RECYCLED/REUSED MATERIALS FROM MAINTENANCE ACTIVITIES AND CONSTRUCTION/DEMOLITION PROJECTS*

MDE has established a "Zero Waste" Action Plan. This measure tracks the reduction of the TBU's impact on solid waste landfill through recycling/reuse of metal, asphalt and concrete. Due to the number and type of construction/demolition activities and projects, we recognize that there may be variability among reporting periods and TBUs.



	2015	2016	2017	2018
Concrete	28,508	59,901	25,454	10,180
Metals	5,382	18,662	16,679	0
Asphalt	370.590	479,089	505,456	382,838

CALENDAR YEAR

*Due to the number and type of construction/demolition activities and projects, there is variability among reporting periods and TBUs.

Why Did Performance Change?

- The use of recycled asphalt materials in Hot Mix Asphalt (HMA) in CY 2018 was 23%, which is consistent with usage in previous years (20%-22%); the variations in the tonnages per year reflect the changes in the yearly tonnage of asphalt mix placed
- The tonnage of recycled concrete-graded aggregate base (RC-GAB) used in CY 2018 (10,180 tons) was greater than the average for the period 2012-2018 (8,997 tons); this may be attributed to having two qualified plants producing RC-GAB (instead of only one in 2018)

What Are Future Performance Strategies?

- MDOT SHA specification encourages the use of recycled concrete and asphalt in construction and will continue to partner with the industry to identify areas where improvements can be made to increase the use of recycled materials to construct roads that meet the safety, system preservation, and environmental needs of Maryland's communities
- Coordinate with pavement and highway design group to recommend placing more recycling road projects where applicable and explore the possibility of using more RC-GAB in road maintenance projects

UTILITY ELECTRICITY USE AND RENEWABLE ENERGY GENERATION

MDOT has prioritized improving air quality, increasing the usage of renewable energy sources, and improving water quality for all current infrastructure and future projects. With these initiatives, MDOT can reduce electricity consumption, supporting Maryland as it moves toward its clean energy and GHG reduction goals. Reducing energy consumption and generating renewable energy benefits all Maryland residents, saving taxpayers money, generating economic revenue, and decreasing air pollutants. MDOT measures the consumption of utility energy, as well as the amount of renewable energy generated by MDOT.

MEGAWATT HOURS IN THOUSANDS (FY)	2014	2015	2016	2017	2018
Electricity Use	393	383	384	364	379
Renewable Energy Generation	1.525	1.759	1.998	1.629	1.431

Why Did Performance Change?

- MDOT issued MSAs to six qualified contractors to design, construct, commission, finance, operate, and maintain PV energy facilities at MDOT locations throughout Maryland; the MSAs provide MDOT with the flexibility of developing PV energy systems quickly and efficiently
- MDOT MAA is replacing outdated HVAC units and converting airfield lighting to LED where appropriate and is in the process of incorporating energy saving and sustainability considerations into development and tenant design standards

What Are Future Performance Strategies?

- MDOT continues to expand its Renewable Energy Program and has installed solar, wind, and geothermal energy systems at a number of MDOT facilities
- MDOT's Solar Program has recently established a Renewable Energy Development Contract, which will allow a number of PV systems to be installed on MDOT properties and many of these facilities will run on solar power; this contract can be used by Maryland State agencies, counties, municipalities, and non-profits to install PV systems on their own properties

OBJECTIVE:

Implement initiatives to reduce fossil fuel consumption, mitigate greenhouse gases, and improve air quality

TRANSPORTATION-RELATED EMISSIONS BY REGION*

MDOT plans, programs, and projects continue to meet federal and State requirements for air quality by reducing vehicle emissions, improving air quality for Maryland residents. MDOT programs encourage more participation in the shared mobility economy, more usage of transit and EVs, and more safety and support for people riding bikes and walking.

		CALENDAR YEAR				
PERFORMANCE MEASURE	REGION	2008	2011	2014	2017	% CHANGE 2005-2014
Volatile Organic Compound (VOC) Tons per Day	Baltimore	52.8	45.5	41.3	25.9	-51%
	Washington**	44.2	39.2	35.4	23.9	-46%
	Other	25.8	20.7	21.1	13.4	-48%
Nitrogen Oxide (NOx) Tons per Day	Baltimore	107.8	89.5	79.5	53.7	-50%
	Washington**	84.0	74.4	63.3	45.3	-46%
	Other	52.7	44.4	44.2	32.8	-38%
Carbon Monoxide (CO) Tons per Day	Baltimore	541.9	445.1	431.8	365.0	-33%
	Washington**	433.4	363.6	352.6	335.5	-23%
	Other	273.2	202.4	229.1	180.1	-34%
Particulate Matter (PM2.5) Tons per Day	Baltimore	4.6	3.5	3.4	2.2	-52%
	Washington**	3.6	2.9	2.7	1.9	-48%
	Other	1.9	1.4	1.5	1.1	-44%

* All emission estimates developed as part of the USEPAs National Emissions Inventory (NEI). The NEI is published every three years.

** All Washington data represents Maryland's share of emissions in the Washington region non-attainment areas, including Charles, Frederick, Montgomery, and Prince George's counties.

Why Did Performance Change?

- MDOT continues to implement emission-reduction strategies in non-attainment areas to foster transportation alternatives to single occupancy vehicles, including bicycle and pedestrian projects, transit improvements, and travel demand management strategies, such as telecommuting, alternative work schedules, and carpooling, promoted through our Commuter Choice Maryland Program
- Motor vehicle emissions continue to decrease through the U.S. Environmental Protection Agency (EPA) Tier 3 Motor Vehicle Emission and Fuel Standards Program; the standards began in 2017 and will reduce ozone pollutants (NOx and VOC) by 80%, fine particulates (PM2.5) by 70%, and sulfur in gasoline by 60%
- Through the Congestion Mitigation and Air Quality (CMAQ) program, MDOT invested $48.1 million in FY 2018 on 22 projects including smart signal systemization, guaranteed ride home programs, transit improvements, and bicycle and pedestrian projects that all have emissions reductions benefits
- MDOT MPA continues to coordinate with MDE on the acquisition and implementation of GRANTS to replace drayage truck engines and cargo handling equipment at the Port of Baltimore

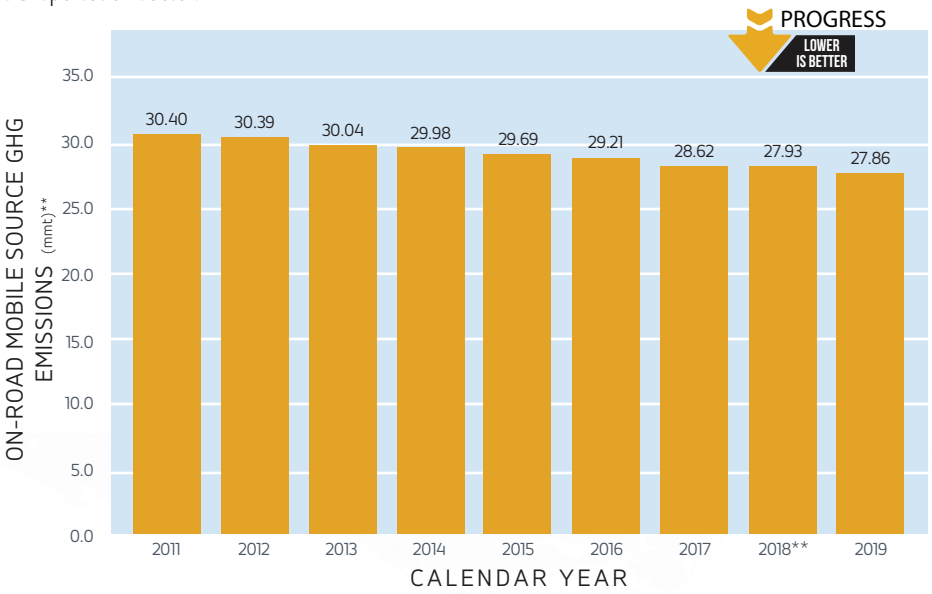
What Are Future Performance Strategies?

- MDOT MTA will continue to administer the Statewide Transit Innovation Grant (STIG) aimed at incorporating innovative transit-related investments to modernize Maryland's transit options
- MDTA will continue to update its toll facilities to be all-electronic and reduce the amount of time spent idling in payment lines
- Maryland will invest more than $9.0 million in FY 2020 grants to support 37 bicycle and pedestrian safety and connectivity across the State
- Through the Volkswagon settlement opportunity, MDOT will coordinate with MDE to implement diesel emission reduction measures, including an MDOT MAA investment in electric shuttle buses

TRANSPORTATION-RELATED GREENHOUSE GAS (GHG) EMISSIONS

MAKING PROGRESS

Many of MDOT's programs, policies, and investments support short- and long-term GHG reduction goals. MDOT is an active participant in the Maryland Commission on Climate Change and is working closely with the MDE, as well as other stakeholders, on mitigating GHG emissions from the transportation sector.



Target: 25% below 2006 emissions by 2020. For on-road transportation, the goal equals 23.5 mmt CO2e in 2020 and 40% below 2006 emissions by 2030*

* The MDOT selected GHG emission reduction goal is consistent with the statewide target set in the 2009 Greenhouse Gas Reduction Act and the subsequent 2016 Greenhouse Gas Reduction Act reauthorization.

** MMT CO2e stands for million metric tons of carbon dioxide equivalents, the standard unit of measurement for GHG emissions. Emissions are calculated using the most recent data and version of EPAs MOVES model available at time of analysis. MOVES2014a is used for analysis year 2016, 2017, 2018 and 2019. 2018 annual VMT revised to reflect actual MDOT SHA reported 2018 HPMS VMT.

Why Did Performance Change?

- MDOT MTA continues to work with Maryland's metropolitan planning organizations (MPOs), major employers and universities to expand transportation emission reduction and monitoring (TERM) programs, aimed at providing commuters and students access to financial incentives and information to support ridesharing and transit use
- On-road transportation GHG emissions continue to decrease in Maryland as the efficiency of the on-road vehicle fleet improves, even as vehicle miles traveled (VMT) growth continues
- MDOT SHA's Coordinated Highways Action Response Team (CHART) program utilizes Intelligent Transportation System (ITS) technologies to enhance travel, reduce traffic congestion, and address capacity inefficiencies that contribute to GHG reductions; this includes the deployment of cameras, traffic detectors, weather sensors, dynamic message signs, traffic websites, and telecommunications infrastructure networks
- MDOT's leadership of the ZEEVIC continues to build opportunities, financial incentives, and promotion of the purchase of EVs and the installation of EVSE to support the State's EV goals

What Are Future Performance Strategies?

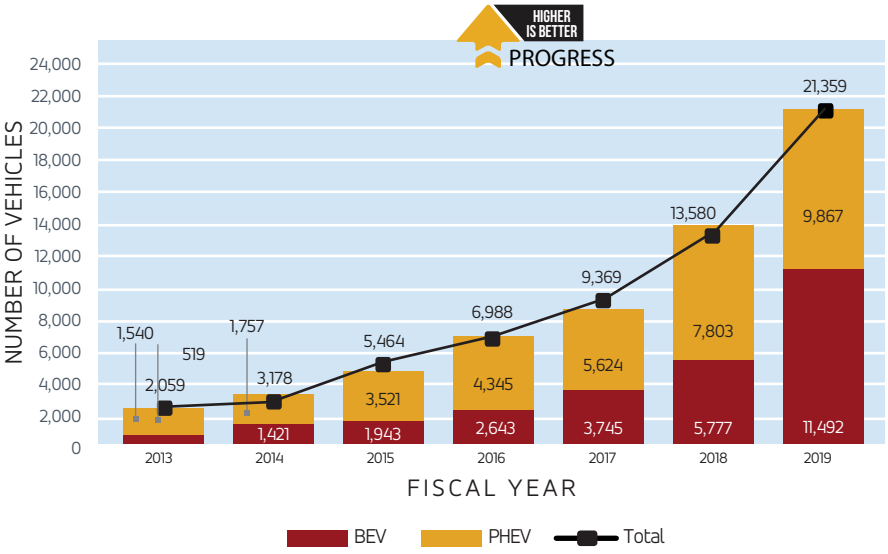
- Within the FY 2020–FY 2025 CTP, MDOT estimates that 63% (approximately $7.077 billion) of Maryland's $11.293 billion six-year capital program (excluding MDTA, capital salaries, wages, and other costs) is associated with investments that could reduce GHG emissions by 2020 and beyond
- MDOT is leading implementation of the bicycle and pedestrian priority area (BPPA) program, supporting localities in designating areas and developing plans leading toward implementation of network improvements in these areas
- MDOT SHA's investment in a progressive, design-build approach to improve reliability and reduce congestion in the I-270 corridor is an example of a project that will utilize innovative and technology focused approaches to manage congestion

TOTAL ELECTRIC VEHICLES (EVS) REGISTERED IN MARYLAND AND TOTAL PUBLICLY AVAILABLE EV CHARGING INFRASTRUCTURE

ON TRACK

Maryland has a goal of 60,000 EV registrations in the State by 2020 and 300,000 by 2025. These goals represent a key component of ensuring that Maryland meets our GHG emission reduction goal of 40% from 2006 levels by 2030.

Drivers in Maryland are encouraged to buy EVs through educational efforts, tax benefits, and rebates, leading to an increase in EVs registered across the State. The installation of EVSE will continue to be critical in addressing range-anxiety and ensuring that adequate EV charging infrastructure is in place as EV adoption accelerates.

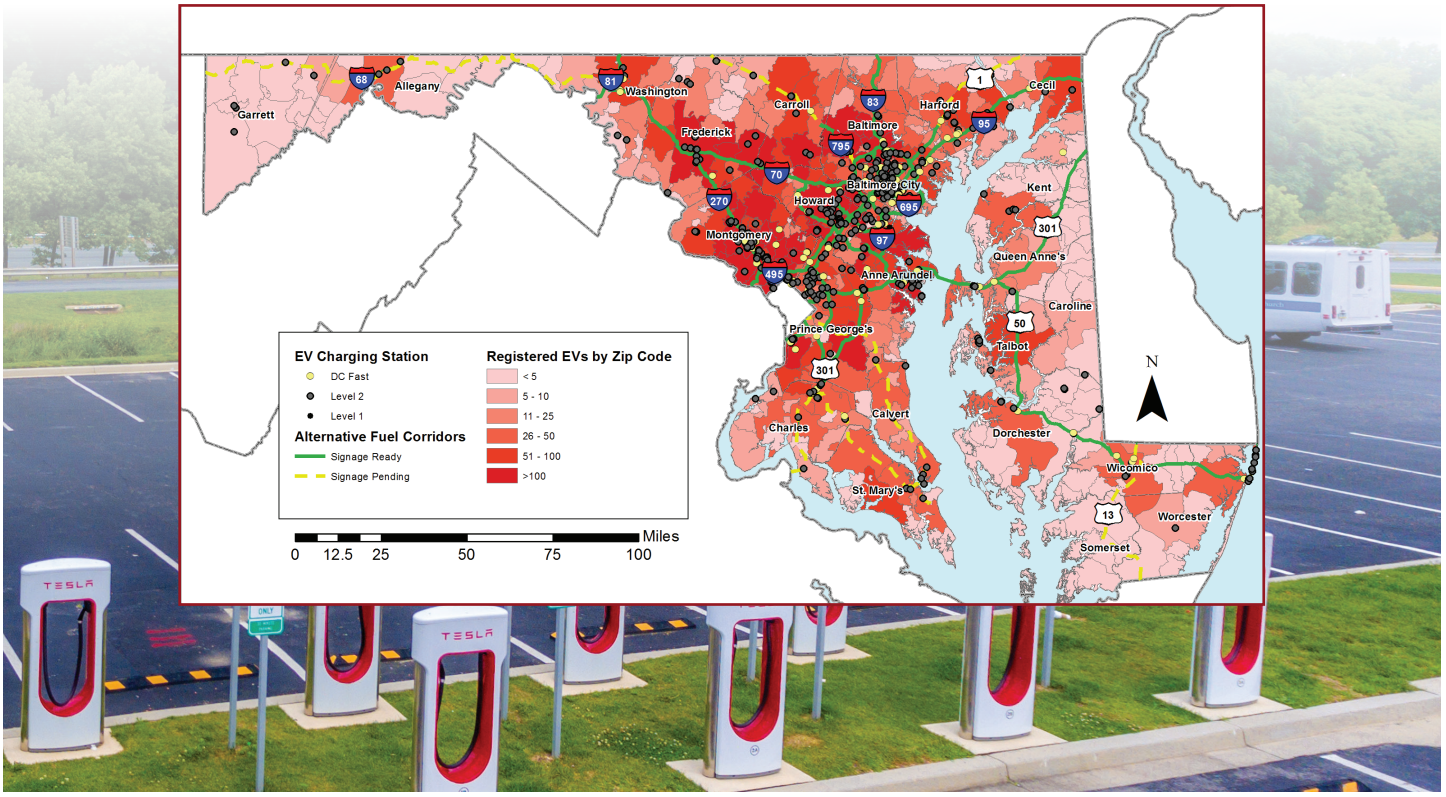


Why Did Performance Change?

- MDOT continued a direct outreach campaign throughout 2019 and has engaged over 6,700 Marylanders across 12 Counties and Baltimore City; the outreach campaign is designed to educate Marylanders on the availability and benefits of EVs
- Maryland now has 20 alternative fuel/EV corridors designated as signage ready or signage pending throughout the State
- In addition to EV excise tax incentive and the funding available for the installation of EVSE, Maryland's public utilities have entered the EVSE space under the direction of the Public Service Commission (PSC); under this order, more than 5,000 new chargers will be installed across Maryland

What Are Future Performance Strategies?

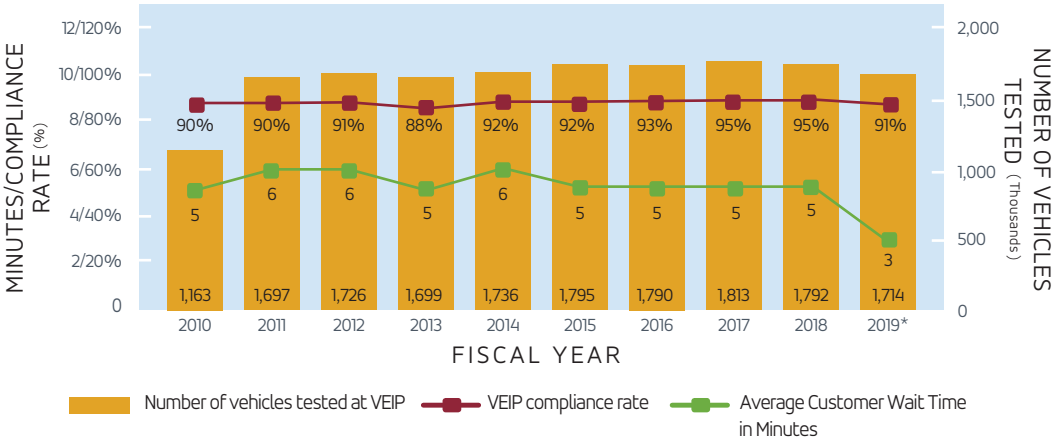
- MDOT will continue to lead the ZEEVIC to promote and incentivize zero emission vehicle (ZEV) adoption, including the promotion of EV adoption and EVSE installation
- Maryland will continue to participate in State and region-wide efforts to install signage along our EV charging corridors
- Maryland will continue to provide educational materials through the **MarylandEV.org** and #MarylandEV platforms



COMPLIANCE RATE AND NUMBER OF VEHICLES TESTED FOR VEHICLE EMISSIONS INSPECTION PROGRAM (VEIP) VERSUS CUSTOMER WAIT TIME

MAKING PROGRESS

Monitoring the VEIP testing compliance rate ensures system effectiveness and identifies vehicles exceeding allowable standards. Tracking the average wait time at VEIP stations ensures that the 15-minute average wait time requirement is met. Timely and efficient customer service helps the State meet federal clean air standards by identifying polluting vehicles and encouraging regular vehicle maintenance.



* 2019 data is preliminary and subject to change. 14 counties offer VEIP tests: Anne Arundel, Baltimore, Baltimore City, Carroll, Harford, Howard, Queen Anne's, Cecil, Washington, Calvert, Charles, Frederick, Montgomery, and Prince George's.

Why Did Performance Change?

- In FY 2019, MDOT MVA saw an overall decrease in number of VEIP-eligible vehicles being tested due to regulations which extended VEIP compliance for new cars and exempted pre 1995 vehicles
- There were slight changes in the compliance rate due to an increase in VEIP extensions which are excluded from the compliance rate until their vehicles are tested
- The VEIP self-serve kiosks are available twenty four hours a day, seven days a week (24/7) in a total of nine locations and provide a $4 cost savings to the customer; the same On Board Diagnostics (OBD) test that a station inspector would do in the lanes is performed by the customer, but at their convenience since the kiosk is open 24/7

What Are Future Performance Strategies?

- MDOT MVA will track and monitor the recently installed VEIP self-serve testing kiosks
- MDE and MDOT MVA continue to look at new technologies for testing such as mobile units, telematics and remote testing for future enhancements to our centralized program

GOAL: Promote Fiscal Responsibility

Ensure responsible investment and management of taxpayer resources to add value and deliver quality transportation improvements through performance-based decision making and innovative funding mechanisms and partnerships

OBJECTIVES:

- **Accelerate project completion through improved and efficient use of alternative project delivery methods and strategic partnerships**
- **Provide transportation services and solutions that maximize value**
- **Ensure a consistent revenue stream and ample financing opportunities**

As financial stewards of the taxes and user fees that fund Maryland's transportation system, MDOT must maximize the value of its transportation investments while addressing the needs of all users. Fiscal responsibility is realized through effective project management tactics, innovative project delivery methods, active funding management and reallocation, and customer service improvement. To this end, MDOT is constantly seeking ways to modernize the project delivery process and fund projects that are determined to be cost effective and of highest value to the public. MDOT MVA is one example of this charge. With the updated Vehicle Emissions Inspection Program (VEIP) test regulations, new vehicles have a deferred inspection date while pre-1996 light-duty vehicles will not have to be tested again. Beyond that, MDOT MVA has been heavily marketing its Alternative Service Delivery (ASD) methods such as kiosks and online services. Allowing customers to conduct MDOT MVA business via alternative methods not only improves customer perception, but it saves costs for MDOT in the long run.

Within MDOT, MDOT SHA pioneered a cost plus time approach to project procurement and delivery. This A+B bidding process is utilized to minimize travel disruptions, a key aspect of MDOT SHA's mission, and emphasizes faster completion of projects than by the traditional low-bid method. Projects selected for A+B bidding have been identified as projects that can benefit in schedule through innovation by the contracting industry but also not place MDOT SHA at undue risk of claims due to uncontrollable or unforeseen circumstances.

Public-Private Partnerships (P3s) are an innovative way that MDOT maintains its fiscal responsibility charge to taxpayers. P3s are formed between a public agency and a private entity (or group of private entities), and certain project-related costs are shared between the partners.

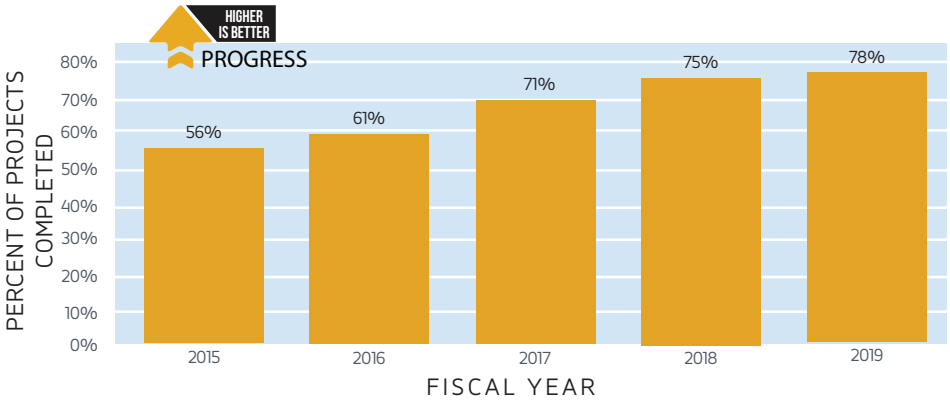
Federal agencies also offer competitive discretionary grants to supplement its guaranteed funding. These grants require that applicants meet certain eligibility criteria and are generally open to state agencies at the highest level. Many grants are also open to regional and local agencies, thus MDOT often collaborates with these agencies to construct competitive grant application packages. As of 2019, some examples of this include MDOT MAA's Taxiway Improvement Grant for BWI Marshall Airport and MDOT MPA's Berth Improvement Grant for Seagirt Marine Terminal.

OBJECTIVE:

Accelerate project completion through improved and efficient use of alternative project delivery methods and strategic partnerships

PERCENT OF PROJECTS COMPLETED BY ORIGINAL CONTRACT DATE

This measure illustrates MDOT's efficiency in managing and delivering contracts and services. It is calculated by assessing contracts completed by their established commitment date or slated project completion date. Project completion is based on when stakeholders are able to receive benefit from the project, such as when a new pedestrian path is opened to the public.



Target: 87% of contracts MDOT-wide are completed on a timely basis

Why Did Performance Change?

- Increased coordination with contractors and utilities
- Encouraging contractors to develop detailed plans prior to construction
- Adopting strategies such as A+B Bidding, which factor completion time as well as price in evaluating bids
- Utilizing Time of Year Letting strategies, which foster economies of scale
- Review active projects on an ongoing basis for adherence to completion schedule

What Are Future Performance Strategies?

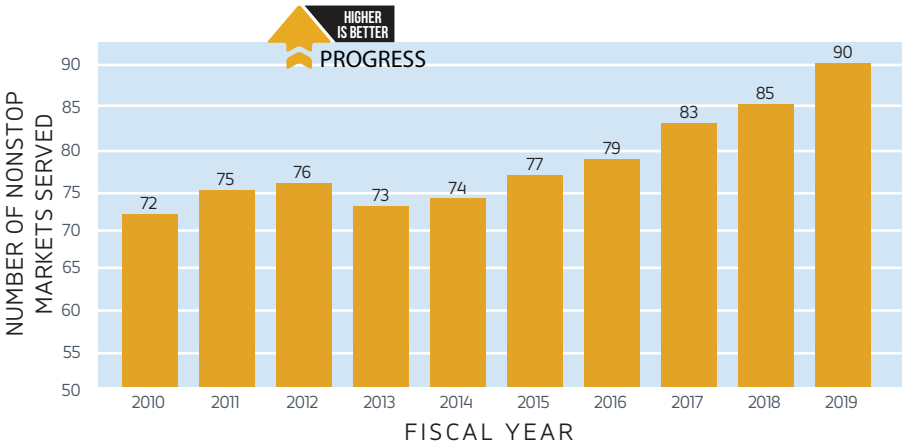
- Continue to conduct a post-completion "lessons learned" process
- Continue to monitor the design process to account for potential challenges and define the project scope
- Continue to ensure that prior contract obligations are completed, such as coordinating with affected communities and utility companies

OBJECTIVE:

Provide transportation services and solutions that maximize value

NUMBER OF NONSTOP AIRLINE MARKETS SERVED

The number of nonstop airline markets served is an example of Maryland's reach regionally, nationwide, and globally. Growth in the number of nonstop destinations served opens up markets to the State's businesses and residents. As more entities fly through BWI Marshall Airport, it becomes a more attractive option in the mid-Atlantic and reflects the success of MDOT MAA's marketing efforts to make it a more competitive airport.



Target: 73 nonstop markets served

Why Did Performance Change?

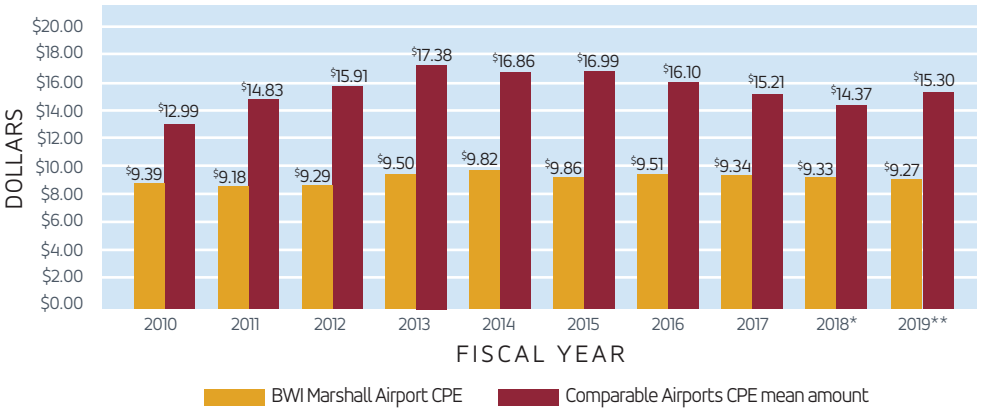
- The number of nonstop markets served from BWI Marshall Airport increased in FY 2019 as several airlines added routes to domestic and international destinations in Mexico, Canada, Cayman Islands, Florida, Texas, California, North Carolina, South Carolina, and Tennessee

What Are Future Performance Strategies?

- Promote BWI Marshall Airport advertising programs and awareness campaigns to passengers on the advantages and options the airport offers, such as air service, parking, and ground transportation services
- Continue to highlight BWI Marshall Airport as the "Easy Come, Easy Go," gateway to the Baltimore and Washington, D.C. region
- Continue coordinating with existing carriers and potential new entrants to expand service and expand access

AIRLINE COST PER ENPLANED PASSENGER (CPE)

Airline operation costs such as landing fees, fuel flowage fees, and terminal rents, support BWI Marshall Airport's competitiveness in a highly competitive region. BWI Marshall Airport is in a region with Ronald Reagan Washington National, Washington Dulles International, and Philadelphia International. The cost per enplaned passenger (CPE) at BWI Marshall Airport continues to be the lowest in the mid-Atlantic and is below the mean of comparable airports.



Target: BWI Marshall Airport CPE below the mean CPE of comparable airports***

*2018 CPE mean amount is revised from previous report.

**2019 data is preliminary and subject to change.

***Comparable airports are defined as Washington Reagan National, Washington Dulles International and Philadelphia International.

Why Did Performance Change?

- Revenues increased due to negotiated terms, implemented facility improvement projects, and reviewed operational cost allocation to airline cost centers

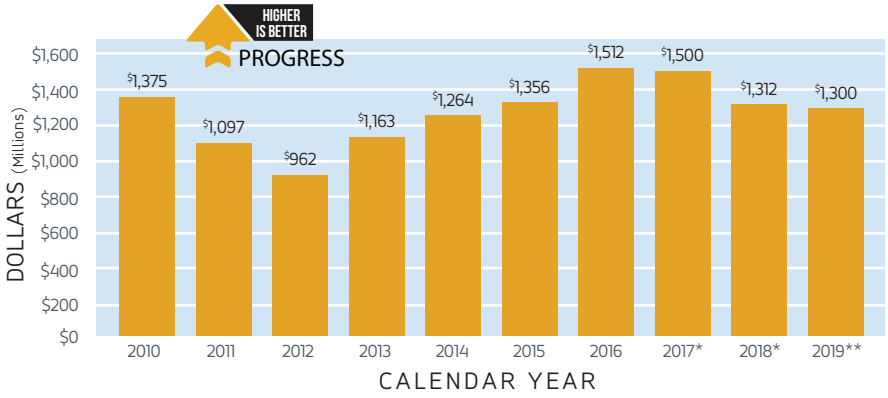
What Are Future Performance Strategies?

- Continue to review the cost effectiveness of capital projects before moving forward with design and construction and strategically implement capital projects that will continue making BWI Marshall Airport an attractive option for airline carriers
- Maintain collaborative relationships with airlines and continue to seek additional airline service/routes and regional market share

USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT

TARGET ACHIEVED

Reduced delay on Maryland roadways reflects the tangible effects and benefits of the Coordinated Highways Action Response Team (CHART) incident management program. This in turn saves money for motorists and commercial carriers such as passenger coach buses and freight trucks.



Target: $1,300 ($1.3 billion) million annually

*2017 and 2018 data is revised from previous report.

** 2019 data is preliminary and subject to change.

Why Did Performance Change?

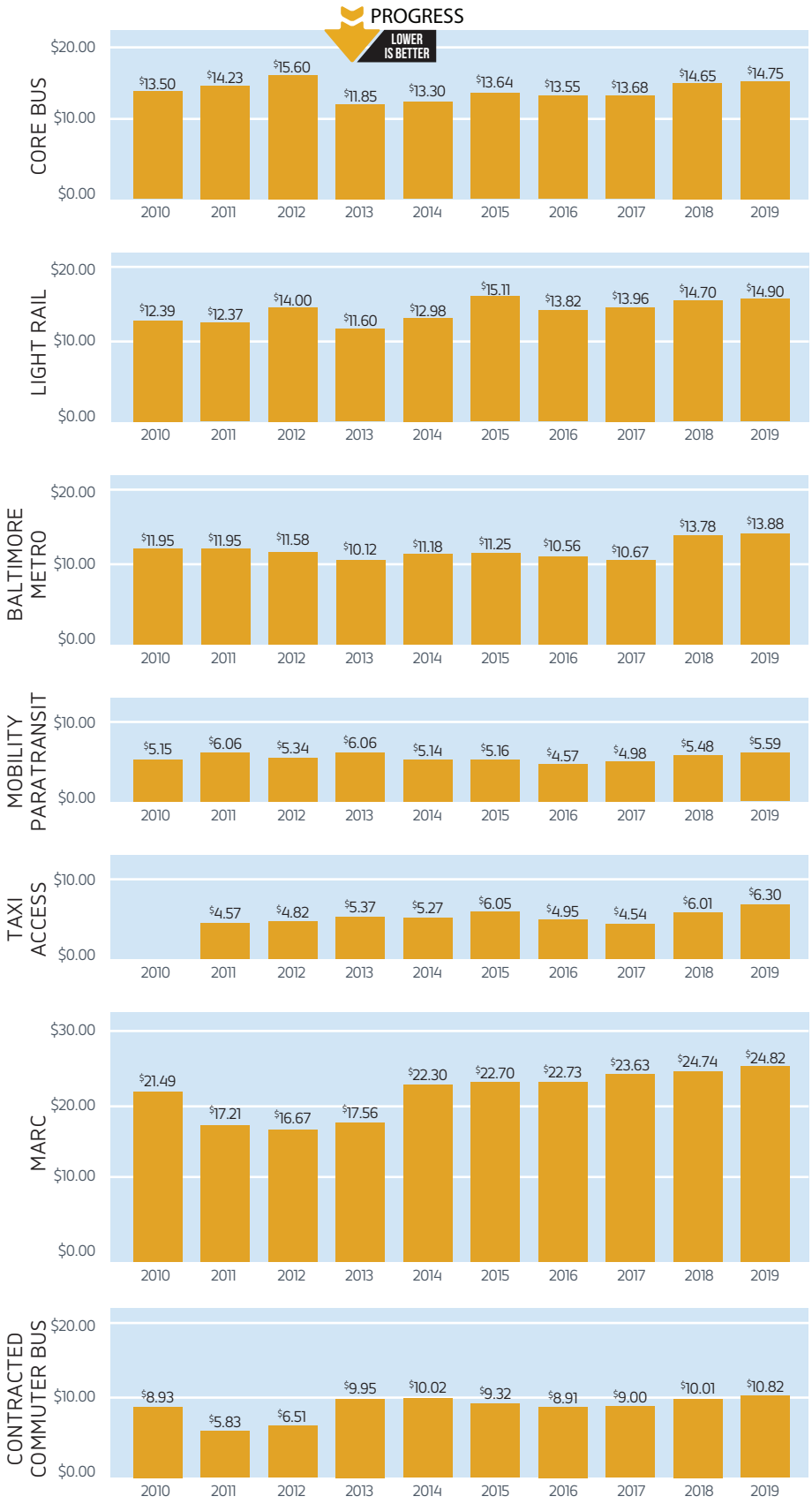
- Saved roadway users $1,300 million and managed 151,955 events, including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events
- Collaborated with the Office of Maintenance and the Office of Planning and Preliminary Engineering (OPPE) Data Governance Division to provide a public information source for winter operations, called Statewide Transportation Operations Response Map (S.T.O.R.M.)
- Coordinated 56 Strategic Highway Research Program (SHRP2) Traffic Incident Management (TIM) Responder training sessions statewide, of which CHART directly facilitated 21, training 827 responders; CHART conducted one Train-the-Trainer session, certifying 13 new instructors, resulting in a grand total of 7,542 Maryland responders trained since the program began
- Collaborated and supported the Maryland State Police (MSP) to develop and implement an Unmanned Aerial System (UAS) Program for Crash Reconstruction
- Began coordination with the Office of Highway Development (OHD) and provided operations support on the I-270 Innovative Congestion Management (ICM) project
- Began deployment of a pilot consisting of 52 Mobile Road Weather Information Sensors (MARWIS) on MDOT SHA's vehicle fleet

What Are Future Performance Strategies?

- Develop a common operating platform for MDOT operations as part of the One MDOT Multimodal Incident Management effort
- Continue to coordinate with OHD and provide operations support on the I-270 ICM project
- Provide SHRP2 TIM training to partner organizations in Maryland
- Draft and collaborate on legislation to limit liability for tow companies to clear disabled vehicles and cargo from the travel lanes
- Complete development and engineering design of the US 1 Innovative Technology Corridor Pilot Project and advertise a contract for its construction and implementation
- Continue supporting the CHART patrol program and analyzing its process to provide improvements in reduction in roadway delays and user cost savings

OPERATING COST PER REVENUE VEHICLE MILE

MAKING PROGRESS



Why Did Performance Change?

- The cost to operate transit services was comparable to the year before, increasing only slightly from 2018
- Cost per trip displayed the most significant increase (8%) for contracted commuter buses from FY 2018 to FY 2019
- An increase in overtime hours drove up the operating cost
- Across all modes the costs per revenue vehicle mile increased by 2% or less

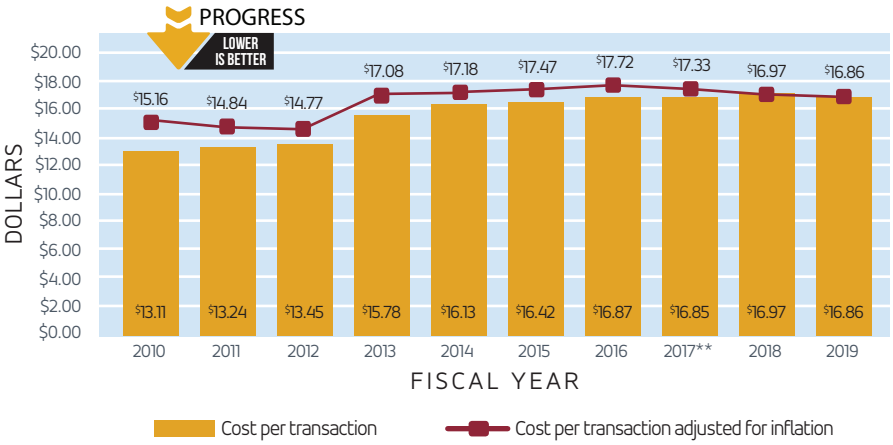
What Are Future Performance Strategies?

- Strive to implement cost savings strategies while maximizing existing services and equipment
- Invest in increasing system reliability to improve on time performance (OTP)
- Implement more efficient ticketing, such as mobile ticketing
- Improve the accuracy of the real-time passenger information on MDOT MTA's transit services to improve customer experience
- Use Rate-Your-Ride app data to identify areas of improvement and use customer input to make relevant improvements

MDOT MVA COST PER TRANSACTION*

ON TRACK

This measure indicates whether MDOT MVA's business practices and programs are cost effective. Cost effectiveness is realized through improved technology and operational practices.



*Includes all transactions (e.g. licensing, registration, titling).

** 2017 data is revised from previous report.

Why Did Performance Change?

- The increase in transactions due to cyclical renewals and Real ID compliance has been a minimal contributing factor to the increase in cost per transaction
- MDOT MVA continues to partner with other agencies and develop the infrastructure to communicate with these agencies; as MDOT MVA is better able to coordinate with our government partners, we can offer more services to customers

What Are Future Performance Strategies?

- Review and revise budget to reflect shared resources with other State agencies where appropriate
- Promote the use of ASD methods such as self-serve kiosks at MDOT MVA locations and online services
- Continue improving the information sent to the customers via mail and email, and information available on the MDOT MVA website to more effectively serve and inform customers prior to a branch visit
- Modernize technology and resources available to MDOT MVA employees to improve the customer experience and increase efficiency

OBJECTIVE:

Ensure a consistent revenue stream and ample financing opportunities

Part of MDOT's charge is to raise funds in tandem with applying for funds from various sources. As such, MDOT actively seeks out discretionary grants to bolster guaranteed funding. These grants are competitive and require applicants meet specific eligibility criteria, and are sometimes limited to state agencies. Other grants are open to local and regional agencies as well, so MDOT will often coordinate with these smaller agencies to make their applications as competitive as possible.

MDOT MAA has received a $13.2 million Federal Aviation Administration (FAA) grant to reconstruct taxiway pavement at BWI Marshall Airport. MDOT MPA has received a $32.8 million Better Utilizing Investments to Leverage Development (BUILD) grant to modernize Seagirt Marine Terminal. As of December 2018, the City of Baltimore and MDOT MTA secured a $678,000 Transportation Investment Generating Economic Recovery (TIGER) grant to improve the North Avenue transitway. MDOT MPA also secured a $125 million grant through the Infrastructure For Rebuilding America (INFRA) Grant Program to facilitate double-stack container movement in the Howard Street Tunnel in Baltimore.

P3s are another funding method MDOT actively pursues. The innovative Purple Line being one example of this. MDOT is collaborating with private developers to improve the efficiency of project delivery, while making the whole project more cost effective. These types of partnerships allow for more funding flexibility than traditional methods, translating to overall user savings.

GOAL: Provide Better Transportation Choices and Connections

Improve transportation connections to support alternative transportation options for the movement of people and goods

OBJECTIVES:

- **Enhance, through statewide, regional, and local coordination, transportation networks to improve mobility and accessibility**
- **Increase and enhance multimodal connections to improve movement of people and goods within and between activity centers**
- **Inform and educate customers on transportation options and benefits**

Each year, MDOT invests in projects and programs that encourage Maryland residents and visitors to engage in more multimodal travel. By making key destinations more accessible for users of all ages, abilities, incomes, and modes, MDOT is creating a more inclusive transportation system and reducing the time spent in congestion by shifting users away from congested roadways. Providing safe and comfortable travel options for people walking, bicycling, and riding transit supports MDOT's goals of improving safety, reducing congestion, and improving air quality. By continuing to support Transit-Oriented Development (TOD) and the growth of communities with reliable access to transit, jobs, housing, and amenities, MDOT can further enhance mobility for all users.

On a statewide level, MDOT has supported multimodal programs by providing construction funding, coordination, and planning resources through a variety of programs. MDOT MTA is leading the development of a new Regional Transit Plan for Central Maryland that will provide a 25-year vision of mobility. The planning process began in early 2019 and will be completed in late 2020. The Central Maryland Regional Transit Plan Commission, a legislatively-mandated 11-member advisory group, was created to develop the goals for the plan and the strategy for public involvement. In 2019, MDOT released an update to its 2040 Maryland Bicycle and Pedestrian Master Plan. MDOT's Bicycle and Pedestrian Priority Areas (BPPAs) facilitate the planning of bicycle and pedestrian facilities in areas with a high potential for bicycling and walking. MDOT's System Preservation Programs include sidewalk reconstruction, new sidewalk construction, and bicycle retrofit.

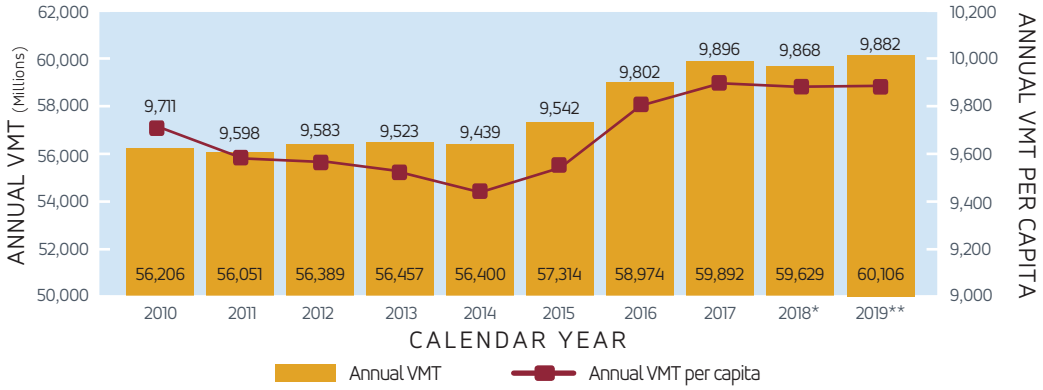
MDOT also works with other state agencies, local jurisdictions, and metropolitan planning organizations (MPOs) to support planning and infrastructure projects that promote trail connectivity, roadway retrofits, bicycle lanes, and land use planning/projects that support walkability and a variety of transportation alternatives. Discretionary grant programs to support local jurisdictions that are supported by MDOT include: the Bikeways Program, Transportation Alternatives, Safe Routes to School, and the National Recreational Trails Program, which combined funded over $9.0 million in grants for FY 2020.

OBJECTIVE:

Enhance, through statewide, regional, and local coordination, transportation networks to improve mobility and accessibility

TOTAL VEHICLE MILES TRAVELED (VMT) AND VMT PER CAPITA

Many State roadways are regularly at or beyond capacity at peak hours. Population continues to grow, further stretching the demand on MDOT's roads, facilities, and services. As this demand continues to increase, VMT will likely also increase, as past trends have shown. MDOT prioritizes its investments, projects, and programs in order to respond to this demand and prepare for its projected growth by making alternatives to driving alone viable and comfortable. By growing the overall multimodal transportation network for people walking, bicycling, riding transit, and carpooling, MDOT can invest in projects that improve overall access to destinations without increasing VMT or roadway congestion. MDOT also supports programs that make it possible to telework and have flexible work hours to commute outside of regular peak hours.



* 2018 data revised from previous report.
** 2019 data is preliminary and subject to change.

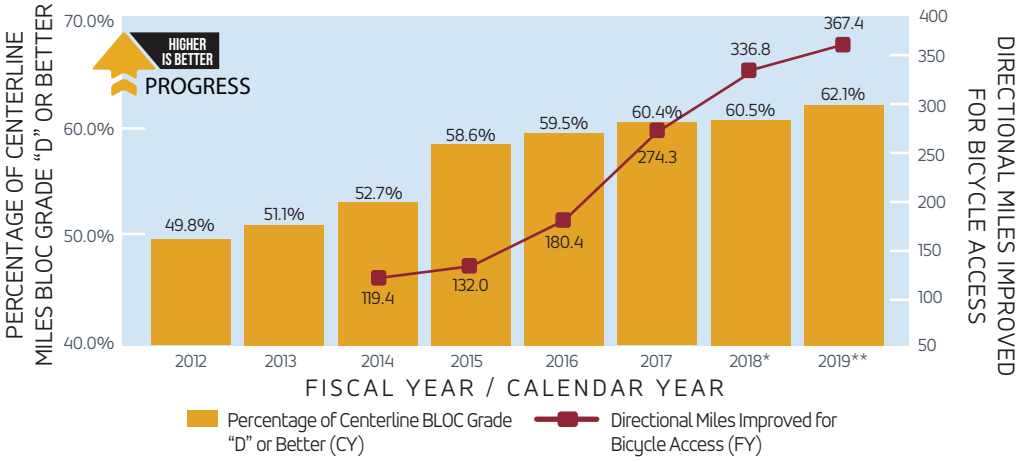
Why Did Performance Change?

- Revitalized the Commuter Choice Maryland program
- Designed BaltimoreLink transit system to provide more people with services

What Are Future Performance Strategies?

- MDOT committed $177.0 million to improving bicycle and pedestrian safety and access across the State
- Implement bicycle and pedestrian strategies as identified in the 2019 Maryland Bicycle and Pedestrian Master Plan Update

NUMBER OF DIRECTIONAL MILES IMPROVED FOR BICYCLE ACCESS/ PERCENTAGE OF STATE-OWNED ROADWAY CENTERLANE MILES WITH A BICYCLE LEVEL OF COMFORT (BLOC) GRADE "D" OR BETTER***



Target: 59% BLOC Grade "D" or Better, 2% Directional Mile Improved per Year

* 2018 BLOC data revised from previous report.
** 2019 BLOC data is preliminary and subject to change.
*** This measure will be replaced by a new measure based on traffic level of stress metrics.

Why Did Performance Change?

- Coordinated with bicycle and pedestrian groups to review and recommend approaches and strategies to statewide bicycle safety education and outreach
- Significantly increased the number of directional miles improved for bicycle access, due to evaluation and inclusion of bicycle improvements in all projects
- MDOT SHA increased the number of miles with marked bicycle facilities, including bicycle lanes and shared lanes, by 30.5 miles in FY 2019

What Are Future Performance Strategies?

- Retire Bicycle Level of Comfort (BLOC) and implement a bicycle Level of Traffic Stress (LTS) measure quantifying accessibility to jobs on low and medium stress bicycle networks. University of Minnesota Accessibility Observatory and the National Accessibility Evaluation pooled-fund study will be providing the data and analysis for the updated measure
- In FY 2020, MDOT will continue to develop and analyze LTS data with other data sources, and to develop and evaluate land use context classifications to define effective performance metrics, and to support the identification of appropriate treatments in the project development process
- Begin construction of the link of the Westminster Community Trail along MD 27 in FY 2020

MDOT MTA AND WMATA RIDERSHIP

MAKING PROGRESS

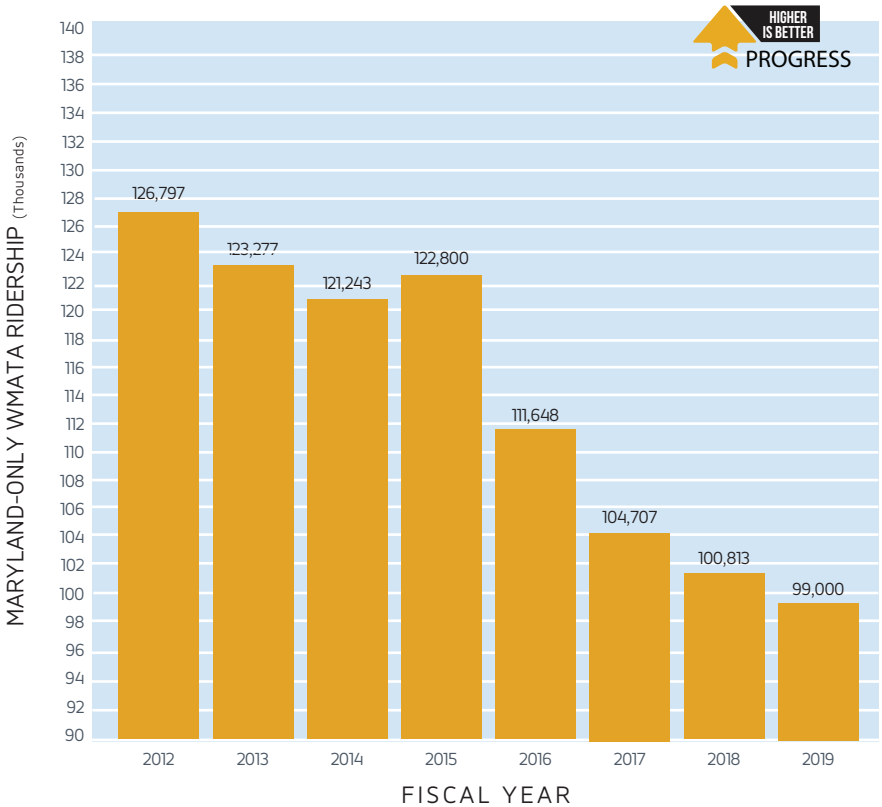
MDOT MTA and local transit partners provide transit options for residents and visitors in urban and rural parts of the State. MDOT continues to strategically invest in its transportation infrastructure as shown in the FY 2020–FY 2025 CTP. Construction crews continue to move forward on the Purple Line, beginning to construct tunnels and laying the first tracks in September 2019. Construction for the North Avenue Rising project began in August 2019 and is expected to be completed in 2021. The project, in partnership with the City of Baltimore, includes dedicated bus lanes, enhanced bus stops, accessibility improvements to the Penn-North Metro Subway station, improved bicycle and pedestrian infrastructure, intersection improvements, and roadway repaving throughout the North Avenue corridor.

MDOT is a key partner, along with neighboring jurisdictions, in providing funding for the Washington Metropolitan Area Transit Authority (WMATA), supporting an extensive transit network that spans the National Capital Region. Residents and visitors depend on WMATA to provide key connections to regionally significant activity centers and many local and regional transit modes throughout Maryland, including MARC, Commuter Bus, Amtrak, Montgomery County Ride On, and Prince George's County's TheBus. More than 100 million passengers used the WMATA Metrorail, Metrobus, and MetroAccess system in Maryland in 2019.

FISCAL YEAR	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019*
TRANSIT RIDERSHIP–MDOT MTA DIRECT-OPERATED SERVICES (THOUSANDS)										
CORE BUS	74,926	78,390	79,535	80,071	75,780	78,697	75,619	69,587	63,730	63,989
BALTIMORE METRO	13,364	14,588	15,364	15,208	14,632	13,901	12,222	10,960	8,738	7,275
LIGHT RAIL	8,158	8,655	8,540	8,647	8,106	7,657	7,431	7,414	7,401	6,966
TRANSIT RIDERSHIP–CONTRACTED SERVICES AND LOTS (THOUSANDS)										
MARC	8,096	8,233	8,452	9,062	9,168	9,246	8,962	9,185	9,322	9,191
CONTRACTED COMMUTER BUS	3,859	4,097	4,290	4,187	4,017	4,034	3,928	3,866	3,841	3,623
MOBILITY PARATRANSIT & TAXI ACCESS	1,481	1,660	1,900	2,084	2,289	2,495	2,556	2,746	2,941	2,974
LOTS	45,700	40,243	40,908	40,281	42,500	39,441	38,476	39,818	41,096	32,866

* 2019 data is preliminary and subject to change.

MARYLAND-ONLY WMATA ANNUAL RIDERSHIP (THOUSANDS)

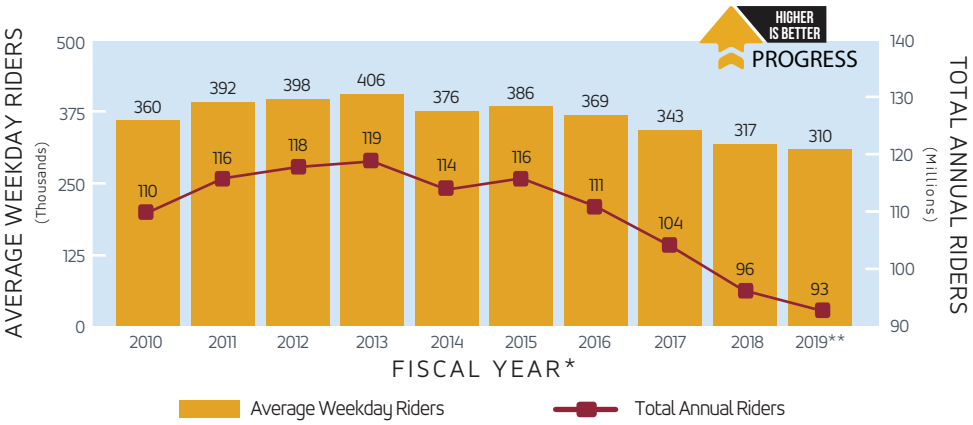


MDOT MTA TRANSIT RIDERSHIP

MAKING PROGRESS

Weekday transit usage demonstrates progress toward better mobility for our customers and contributes to statewide goals.

MDOT MTA AVERAGE WEEKDAY TRANSIT RIDERS (THOUSANDS) AND TOTAL ANNUAL TRANSIT RIDERS (MILLIONS)



* To maintain the integrity of historical comparisons of bus ridership, MDOT MTA used ridership estimate differences between the new Automated Passenger Counter (APC) system and previous systems to adjust previous bus ridership estimates and allow for comparable data for fiscal years.

** 2019 data is preliminary and subject to change.

Why Did Performance Change?

- Ridesharing services like Lyft and Uber combined with the low costs of fuel has contributed to a decrease in ridership with potential riders opting to use rideshare or drive themselves
- On time performance has improved and continues to be a prime focus for MDOT MTA, as do investments in technology that enhance riders' transit experience including: the mobile transit pass app, CharmPass, and a partnership with Transit App to provide real-time bus arrival information to riders

What Are Future Performance Strategies?

- MDOT MTA continues to invest in new vehicles, replacing 70 buses each year through 2024
- MDOT MTA continues to partner with local jurisdictions to facilitate TOD projects such as the Laurel Park MARC Station
- MDOT MTA is overhauling the entire MARC III passenger coach fleet, this project is estimated to be complete in 2021

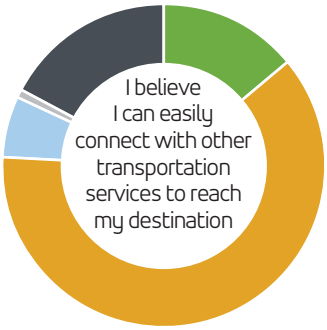
OBJECTIVE:

Increase and enhance multimodal connections to improve movement of people and goods within and between activity centers

MDOT SURVEY – PERCEPTIONS OF MULTIMODAL CONNECTIVITY

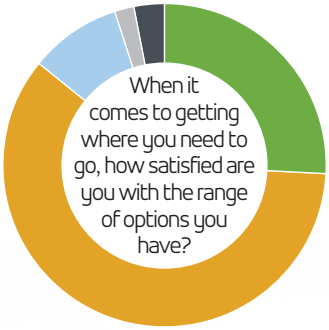
MDOT and its Transportation Business Units (TBUs) continue to provide safe, reliable options for residents and visitors to travel via foot, bicycle, transit, carpool, and other modes of transportation. This survey measures the public's perception of connectivity, highlighting where MDOT and the TBUs have succeeded and where improvements are needed either in infrastructure or outreach. MDOT Customers are surveyed annually, by the University of Baltimore, to rate their satisfaction with the range of options they have such as roads, buses, trains, and other facilities and services. 84% of respondents were either satisfied or very satisfied with the transportation options.

MDOT SURVEY QUESTION:



- 16% Strongly Agree
- 62% Agree
- 8% Disagree
- 1% Strongly Disagree
- 14% Don't Know/Can't Evaluate

MDOT SURVEY QUESTION:



- 26% Very Satisfied
- 58% Satisfied
- 11% Not Very Satisfied
- 2% Not Satisfied At All
- 3% Don't Know/Can't Evaluate

Why Did Performance Change?

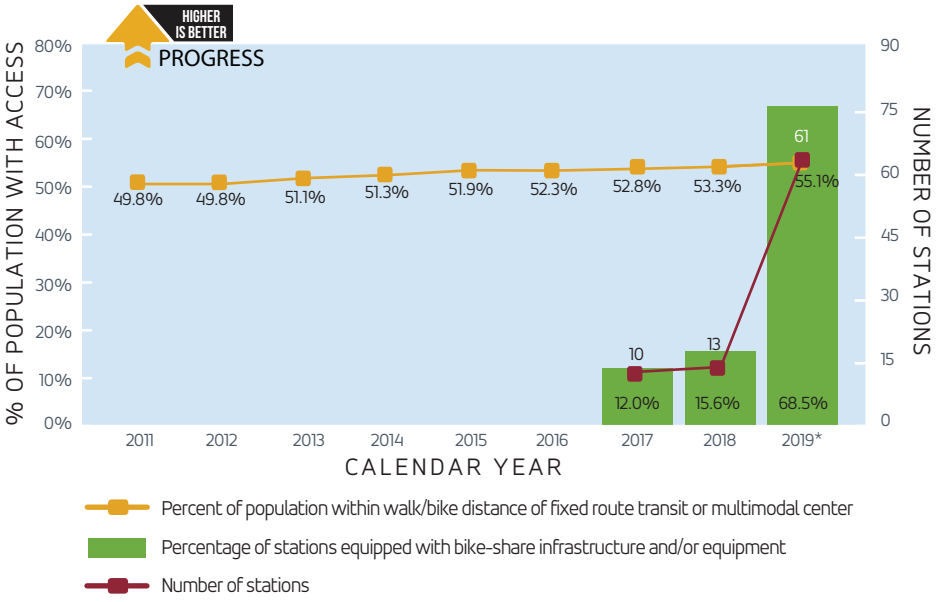
- MDOT SHA introduced a pedestrian safety program that installed traffic calming measures and speed limit reductions in select business districts
- MDOT MTA introduced the CharmPass Mobile Ticketing app in 2018 and launched a partnership with Transit app, which provides real-time bus arrival information
- MDOT MTA renovated and reopened both the Camden and BWI MARC stations in 2019, with new information displays and expanded bike storage

What Are Future Performance Strategies?

- MDOT MTA is developing a Regional Transit Plan for Central Maryland
- MDOT will work to implement the strategies identified in the 2019 Maryland Bicycle and Pedestrian Master Plan Update

ACCESS TO TRANSIT AND BICYCLE ACCESS TO TRANSIT

Access to transit measures how many Maryland customers are within a quarter mile of a fixed-route transit station, which is an estimate of how many people can walk or bike to a fixed-route transit or multimodal transit center. Bicycle access to transit measures how many Maryland customers can bike to a fixed-route transit (such as Light Rail or MARC) or a multimodal transit center.



* Methodology for this measure changed in 2019 to include any stations with bike racks, bike storage, and other bike sharing facilities.

Why Did Performance Change?

- MDOT MTA expanded bike racks in MARC cars from 17 cars to a total of 39 cars in 2019
- MDOT MTA initiated new bus routes to Port Covington and Trade Point Atlantic, connecting both centers of employment to the larger metropolitan area
- Significantly increased the number of directional miles improved for bicycle access, due to evaluation and inclusion of bicycle improvements in all projects to the maximum extent practical
- Improved 62.5 directional miles for bicycle access in FY 2018 and another 30.5 miles in FY 2019

What Are Future Performance Strategies?

- MDOT MTA is currently constructing the Purple Line, a 16-mile light rail line that will extend from Bethesda in Montgomery County to New Carrollton in Prince George's County and will provide a direct connection to Metrorail, MARC, Amtrak, and local bus services, as well as several major economic centers

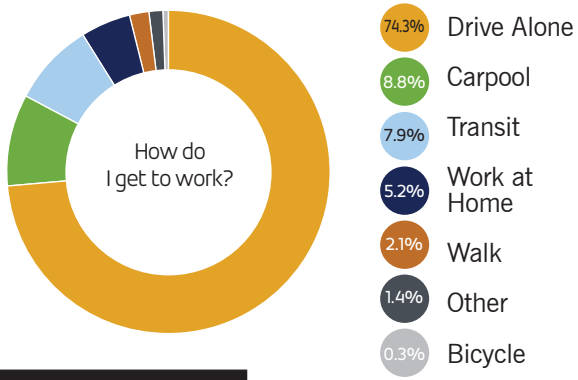
OBJECTIVE:

Inform and educate customers on transportation options and benefits

TRANSPORTATION DEMAND MANAGEMENT (TDM) AND COMMUTE MODE SHARE*

Commuter Choice Maryland is the MDOT Travel Demand Management (TDM) Program. TDM offsets vehicle congestion by promoting alternatives to driving alone, such as taking transit, carpool, vanpool, walking, biking, teleworking, Maryland Commuter Tax Credit, and Guaranteed Ride Home. In line with national trends, VMT continues to increase in Maryland. Commuter Choice Maryland provides options to maximize travel choices and deliver solutions that can reduce congestion, conserve energy, facilitate economic opportunity, and enhance the life of all Marylanders. **www.commuterchoicemaryland.com**

Also, in the Washington, D.C., Metropolitan Region, Commuter Connections is a regional network of transportation organizations that offer a host of free services and programs to assist employers and commuters with making smart choices about their commuting needs. For more information, visit: **www.commuterconnections.org**.



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
DRIVE ALONE	73.4%	73.0%	73.3%	73.4%	73.9%	73.9%	73.8%	73.8%	73.7%	74.3%
CARPOOL	10.0%	10.7%	10.1%	9.8%	9.0%	9.3%	8.9%	9.0%	9.1%	8.8%
TRANSIT	8.8%	8.6%	9.2%	8.9%	9.2%	9.0%	9.0%	8.5%	8.5%	7.9%
WORK AT HOME	4.1%	4.3%	4.1%	4.2%	4.2%	4.1%	4.4%	4.7%	4.9%	5.2%
WALK	2.6%	2.3%	2.3%	2.5%	2.4%	2.3%	2.6%	2.5%	2.1%	2.1%
OTHER	0.7%	0.7%	0.9%	0.9%	0.9%	1.1%	0.3%	1.2%	1.3%	1.4%
BICYCLE	0.4%	0.2%	0.3%	0.4%	0.4%	0.3%	1.0%	0.3%	0.4%	0.3%

* Commute mode share is based on data from the American Communities Survey (U.S. Census).

ESTIMATED ANNUAL REGIONAL VMT REDUCTION THROUGH TERMS***

PROGRAM	PROGRAM DESCRIPTION	DAILY REDUCTION IN VEHICLE TRIPS*	DAILY REDUCTION IN VMT*
COMMUTER CONNECTIONS TRANSPORTATION EMISSIONS REDUCTION MEASURES**			
Guaranteed Ride Home	Provides transit users or carpoolers up to four rides home per year in a taxi or rental car in the event of an unexpected personal or family emergency	6,398	181,335
Employer Outreach	Supports marketing efforts to increase employee awareness and use of alternatives to driving alone to work every day	102,625	1,841,429
Integrated Rideshare	Promotes other alternative transportation services to employers and to the general public. Commuter information system documentation is provided with comprehensive commute information, to include regional TDM software updates, transit, telework, Park-and-Ride, and interactive mapping	1,779	51,340
Commuter Operations and Ridesharing Center	Updates and maintains the Commuter Connections database for ride-matching services and provides information on carpooling, vanpooling, telecommuting, bicycling, and walking for the Washington-Baltimore metropolitan region	19,949	401,327
Telework Assistance	Provides information to employers in Maryland on the benefits of telecommuting and assists in setting up new or expanded telework programs for employers	14,839	361,204
Mass Marketing	Promotes and communicates the benefits of alternative commute methods to single-occupant vehicle commuters through the media and other wide-reach communications	10,295	163,250
MDOT MTA TRANSPORTATION EMISSION REDUCTION MEASURES			
MDOT MTA College Pass	Offers a subsidized monthly transit pass to full- or part-time students enrolled in greater Baltimore metropolitan area colleges or universities	1,247	9,847
Transit Store in Baltimore	Provides customer access to transit information and for purchases of transit passes. Some 15-20% of total transit pass sales occur through this outlet	3,376	56,959
MDOT MTA and SHA Park-and-Ride*	Supports carpooling and transit ridership by providing commuter parking lots as alternatives to driving alone to daily destinations.	51,845	874,629

* The impacts shown reflect the current definitions and most recent data available for each of the measures. Data are estimated.

** The Commuter Connections program is run through the Metropolitan Washington Council of Governments. The reduction in trips and VMT for Commuter Connections reflect reductions for all of the Metro Washington region, including Maryland, District of Columbia and Virginia. Data is reported once every three years and reflects 2017 to 2019.

*** MDOT MTA data is collected every five years.

Why Did Performance Change?

- Commuter Choice Maryland expanded and enhanced delivery of commuter benefits including a new website, webinars, and updated resources and tools
- New marketing strategies were developed to promote transit ridesharing (vanpooling & carpooling), telework, biking, walking, and alternative flexible work schedules
- Commuter Choice Maryland continues to promote the Maryland Commuter Tax Credit, providing incentive for employers to provide commuter benefits
- MDOT SHA implemented a new parking Lot Demand Model to ensure new lots are designed to meet purpose and need

What Are Future Performance Strategies?

- Commuter Choice Maryland will develop performance measures that demonstrate TDM Program impacts and outcomes and the effectiveness of individual TDM activities that support program goals
- Finalize design of 47 additional spaces (total 393 spaces) at the MD 32/Broken Land Parkway Park-and-Ride West lot in Howard County, a new 189-space lot at US 15 along Elmer Derr/Mt. Zion Road (replacing two existing lots offering 89 spaces), and a new lot offering 50 spaces in Frederick County along US 15 at MD 140
- Construct a new 200-space lot at MD 5/MD 373 interchange in Prince George's County and a new 42-space lot in Friendsville and complete construction of the US 15/Monocacy Blvd Park-and-Ride lot, adding 400 spaces

GLOSSARY

GLOSSARY TERM	DEFINITION
Annual Attainment Report on Transportation System Performance (AR)	Pursuant to Transportation Article Section 2-103.1 of the Annotated Code of Maryland, the State is required to develop or update an annual performance report on the attainment of transportation goals and benchmarks in the Maryland Transportation Plan (MTP) and Consolidated Transportation Program (CTP). The Attainment Report must be presented annually to the Governor and General Assembly before they may consider the MTP and CTP.
Automated Vehicles (AV)	AV have numerous driving automation features, these features allow the vehicle to operate at different levels of automation depending upon the feature(s) that are in place.
Calendar Year (CY)	The period of 12 months beginning January 1 and ending December 31 of each reporting year.
Commuter Choice Maryland	An incentive program designed primarily to encourage Maryland employees who drive to work to switch to transit or vanpools.
Connected Vehicles	Connected vehicles use technologies that will enable cars, buses, trucks, trains, roads, and other infrastructure, and our smartphones and other devices to "talk" to one another.
Coordinated Highways Action Response Team (CHART)	CHART is an incident management system aimed at improving real-time travel conditions on Maryland's highway system. CHART is a joint effort of MDOT SHA, MDTA, and the Maryland State Police (MSP), in cooperation with other federal, state, and local agencies.
Cost Per Enplaned Passenger	Cost per enplaned passenger is defined as all landing fees, airside usage charges, fuel flowage fees, terminal rents, and other airline payments to airports divided by enplaned passengers.
Consolidated Transportation Program (CTP)	A six-year program of capital projects, which is updated annually to add new projects and reflect changes in financial commitments.
Electric Vehicle (EV)	Cars that are capable of traveling only on electric power supplied by a battery.
E-ZPass®	An electronic toll collection system utilized to provide a more efficient flow of traffic through MDTA toll facilities. *E-ZPass®* toll collection is available at all eight MDTA toll facilities. The benefits of *E-ZPass®* membership allow travel from Virginia to Maine and as far west as Illinois, with tolls paid from a Maryland *E-ZPass®* account.
Fiscal Year (FY)	A yearly accounting period covering the period between July 1 and June 30 of each reporting year.
Fixing America's Surface Transportation Act or "FAST Act"	On December 4, 2015, the FAST Act was signed into law—to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over FY 2016—FY 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs.
Intercounty Connector (ICC)/MD 200	All electronic toll-road from I-270 in Montgomery County to US 1.
Locally Operated Transit Systems (LOTS)	Transit systems that provide primarily bus service and demand response within the local areas in which they operate. They are funded through a combination of federal, state, and local money. MDOT provides financial, technical, and operating support for these services.
Maryland Transportation Plan (MTP)	The MTP is MDOT's long-range transportation policy plan and includes the vision, goals, and objectives that provide the policy framework and context for Maryland's transportation programs and investments. The MTP sets Department policy for the 20-year period and is updated every five years.
MDOT MPA General Cargo	Foreign and domestic waterborne general cargo handled at the public (MDOT MPA) terminals.
Moving Ahead for Progress in the 21st Century Act (MAP-21)	MAP-21 is a funding and authorization bill to govern U.S. federal surface transportation spending. It was passed by Congress on June 29, 2012 and signed into law on July 6.
Mode	Form of transportation used to move people or cargo (e.g., truck, rail, air).
Port of Baltimore Foreign Cargo	International (foreign) cargo handled at public and private terminals within the Baltimore Port District. This includes bulk cargo (e.g., coal, sugar, petroleum, ore, etc. shipped in bulk) and all general cargo (e.g., miscellaneous goods shipped in various packaging).
Public-Private Partnerships (P3s)	A method for delivering public infrastructure assets using a long-term, performance-based agreement between a Reporting Agency and Private Entity. Using P3, appropriate risks and benefits can be allocated in a cost-effective manner between the contractual partners; the private entity performs functions normally undertaken by the government though the State may retain ownership and ultimately remains accountable for the public infrastructure asset and its public function.
Shared Mobility	Shared mobility refers to a transportation strategy by which users can access various types of services or products, including bicycles, scooters, or ride-sharing on-demand. These offerings provide flexibly in transportation choice.
State Report on Transportation (SRT)	The SRT is prepared annually and distributed to the General Assembly, local elected officials, and interested citizens. It consists of two documents, the MTP, and the CTP.
Traffic Relief Plan (TRP)	The TRP is a P3 effort on I-495, I-270 and other innovative projects, such as Smart Signals, I-95 Express Toll Lanes℠ (ETL), and the I-695 Transportation Systems Management and Operations (TSMO) projects. These major projects will reduce congestion on Maryland highways and provide roadway users with travel options.
Transit-Oriented Development (TOD)	TOD is a land use strategy intended to promote efficient use of land and transportation infrastructure. TODs are planned to include relatively dense and walkable developments with a mix of land uses and infrastructure designed to promote transit ridership.
Transportation Business Unit (TBU)	MDOT's TBUs include Maryland Aviation Administration (MDOT MAA); Maryland Port Administration (MDOT MPA); Maryland Transit Administration (MDOT MTA); Motor Vehicle Administration (MDOT MVA); State Highway Administration (MDOT SHA), and The MDOT Secretary also serves as Chairman of the Maryland Transportation Authority (MDTA).
Transportation Infrastructure Investment Act (Transportation Act)	Signed into law on May 16, 2013, the Transportation Act - new legislation that will support thousands of jobs and invests an average of $800 million a year at full implementation and a total of $4.4 billion over the next six years (FY 2014-FY 2019).
Transportation Network Company (TNC)	A TNC, also known as mobility service providers (MSP) or on demand transportation, such as Uber or Lyft, allow potential passengers to use websites and mobile apps to pair with drivers who provide passengers with rides using the driver's non-commercial vehicle.
Travel Demand Management (TDM)	TDM strategies support the use of alternatives to the traditional single-occupant vehicle through a variety of programs and incentives (e.g., carpooling, car sharing, transit, Park-and-Ride facilities, teleworking, and flexible work hours).
Vehicle Miles of Travel (VMT)	A measurement of the total miles traveled by all vehicles.

APPENDIX: LIST OF PERFORMANCE MEASURES BY GOAL

PERFORMANCE MEASURE	DEFINITION	TBUS	PAGE NUMBER
ENSURE A SAFE, SECURE, AND RESILIENT TRANSPORTATION SYSTEM			
OBJECTIVE: REDUCE THE NUMBER OF LIVES LOST AND INJURIES SUSTAINED ON MARYLAND'S TRANSPORTATION SYSTEM			
Annual Number of Traffic Fatalities and Injuries on All Roads in Maryland and on Transit Facilities	The annual number of traffic fatalities and personal injuries on all Maryland roads and transit facilities. The fatality and personal injury rate are calculated per 100 million vehicle miles of travel	MDOT SHA, MDOT MVA, MDOT MTA and MDTA	12
Number of Bicycle and Pedestrian Fatalities and Injuries on All Maryland Roads	Number of bicyclists and pedestrians killed/injured in traffic related crashes in a calendar year, on all Maryland roads including MDTA and locally owned facilities	MDOT SHA, MDOT MVA and MDTA	13
OBJECTIVE: PROVIDE FOR THE SECURE MOVEMENT OF PEOPLE, GOODS, AND DATA			
MDOT-Wide Overall Perception of Safety: Crime and Safe Movement	Average score for: Feeling safe while riding, while waiting at stops and stations, and for vehicles left in an MDOT MTA parking lot	MDOT	14
Preventable Crashes per 100,000 Vehicle Miles	Preventable crashes are crashes in which drivers did not do everything they could to avoid a crash	MDOT MTA	15
OBJECTIVE: IMPROVE ROADWAY CLEARANCE TIMES AND FACILITATE EFFICIENT AND COORDINATED RESPONSES TO EMERGENCY AND DISASTER EVENTS THROUGHOUT THE TRANSPORTATION SYSTEM			
Restoring Transportation Services: Average Time to Restore Normal Operations After a Weather Event	Illustrates the efficiency of MDOT SHA and MDTA in reducing the impact of winter weather events by quickly restoring normal operations on primary and interstate roadways	MDOT SHA and MDTA	16
FACILITATE ECONOMIC OPPORTUNITY AND REDUCE CONGESTION IN MARYLAND THROUGH STRATEGIC SYSTEM EXPANSION			
OBJECTIVE: PURSUE CAPITAL IMPROVEMENTS TO THE TRANSPORTATION SYSTEM THAT WILL IMPROVE ACCESS TO JOBS AND TOURISM, AND LEVERAGE ECONOMIC GROWTH OPPORTUNITIES			
BWI Marshall Airport Total Annual Passengers	Measures number of annual passengers using the BWI Marshall Airport	MDOT MAA	18
International Cruises Using the Port of Baltimore	Number of international cruises using the Port of Baltimore as a home port	MDOT MPA	18
Jobs Supported by MDOT Capital Program	Economic return from transportation investment is based on the estimated number of jobs created as a result of MDOT investments in capital projects	MDOT	19
OBJECTIVE: IMPROVE THE MOVEMENT OF GOODS WITHIN AND THROUGH MARYLAND BY INVESTING IN INTERMODAL CONNECTIONS AND IMPROVEMENTS TO REDUCE FREIGHT BOTTLENECKS			
Improving Goods Movement: Freight Originating and Terminating in Maryland	Measures the weight and value of goods originating or terminating in Maryland	MDOT	19
Port of Baltimore Foreign Cargo and MDOT MPA General Cargo Tonnage	Measures the efficiency of truck movements throughout Maryland	MDOT SHA	20
Annual Hours of Delay for Trucks, and Truck Reliability Index	Measures the efficiency of truck movements on the MDOT highway network	MDOT SHA and MDTA	21
OBJECTIVE: STRATEGICALLY INVEST IN EXPANSION AND OPERATIONAL IMPROVEMENTS TO REDUCE CONGESTION ALONG THE MULTIMODAL TRANSPORTATION SYSTEM			
Annual Cost of Congestion (Billions) on the MDOT Highway Network	The sum of the cost of delay, the cost of extra fuel consumed due to slow operating speeds, and the cost of emissions	MDOT SHA and MDTA	21
Annual Revenue Vehicle Miles of Transit Service Provided	Revenue vehicle miles indicates the level of transit service available to, and in use by, the general public	MDOT MTA	22
MAINTAIN A HIGH STANDARD AND MODERNIZE MARYLAND'S MULTIMODAL TRANSPORTATION SYSTEM			
OBJECTIVE: PRESERVE AND MAINTAIN STATE-OWNED OR FUNDED ROADWAYS, BRIDGES, PUBLIC TRANSIT, RAIL, BICYCLE AND PEDESTRIAN FACILITIES, PORTS, AIRPORTS, AND OTHER FACILITIES IN A STATE OF GOOD REPAIR			
Percentage of the MDOT SHA Network in Overall Preferred Maintenance Condition	The overall condition of the network reflects how well asset management strategies, operational improvements, and technology have sustained the quality and safety of existing highways	MDOT SHA	24
Overall Acceptable Pavement Condition	Overall pavement condition is based on remaining service life, which is a scale of 0 to 50 years to describe pavement condition	MDOT SHA and MDTA	24
Number of Bridges and Percent that are in Poor Condition	Number of bridges where at least one major structural element has a condition rating of four or less (on a scale from zero (closed to traffic) to nine (relatively new))	MDOT SHA, MDOT MAA and MDOT MVA	25
Dredged Material Placement Capacity Remaining for Harbor Sites and Poplar Island	Monitors existing capacity remaining at Harbor and Poplar Island dredged material placement sites	MDOT MPA	26
Transit Rolling Stock Within Useful Life Benchmark	Used to understand the condition of transit vehicles, the amount of stock within useful life informs the agency of the needs and expected repairs or replacements	MDOT MTA	27

APPENDIX: LIST OF PERFORMANCE MEASURES BY GOAL

PERFORMANCE MEASURE	DEFINITION	TBUS	PAGE NUMBER
OBJECTIVE: STRATEGICALLY MODERNIZE INFRASTRUCTURE THROUGH NEW AND INNOVATIVE TECHNOLOGY, ENHANCED PARTNERSHIPS, DESIGN STANDARDS, AND PRACTICES TO FACILITATE THE MOVEMENT OF PEOPLE AND GOODS			
Average Truck Turn Time at Seagirt Marine Terminal	Truck turn times are a measure of the efficiency and operations of the Seagirt Marine Terminal	MDOT MPA	27
Percentage of State-Owned Roadway Directional Miles Within Urban Areas that Have Sidewalks and Percent of Sidewalks that Meet Americans with Disabilities Act (ADA) Compliance	Tracking the percent of sidewalks that are ADA compliant helps ascertain whether Maryland's sidewalk program meets federal benchmarks	MDOT SHA	28
OBJECTIVE: USE ASSET MANAGEMENT TO OPTIMIZE PUBLIC INVESTMENT AND ENSURE THE SUSTAINABILITY OF TRANSPORTATION INFRASTRUCTURE			
IMPROVE THE QUALITY AND EFFICIENCY OF THE TRANSPORTATION SYSTEM TO ENHANCE THE CUSTOMER EXPERIENCE			
OBJECTIVE: INCREASE THE EFFICIENCY OF TRANSPORTATION SERVICES THROUGH PARTNERSHIPS, ADVANCED TECHNOLOGIES, AND OPERATIONAL ENHANCEMENTS TO IMPROVE SERVICE DELIVERY METHODS			
MDOT MVA Alternative Service Delivery (ASD) Transactions as Percent of Total Transactions	Transactions by alternative services (services without a visit to an MDOT MVA branch)	MDOT MVA	30
Percent of Toll Transactions Collected Electronically	Toll collections by *E-ZPass*® and Automatic Vehicle Identification/Total number of toll collections	MDTA	30
OBJECTIVE: ENHANCE CUSTOMER SATISFACTION WITH TRANSPORTATION SERVICES ACROSS ALL MODES OF TRANSPORTATION			
Overall Satisfaction with MDOT	An annual survey question on this topic provides information as to if MDOT is succeeding in its efforts to provide exceptional customer service	MDOT	31
MDOT MVA Branch Office Customer Wait and Visit Time Versus Customer Satisfaction Rating	Average visit time plotted against percentage of customers rating their MDOT MVA experience as "good" or "very good"	MDOT MVA	32
OBJECTIVE: MINIMIZE TRAVEL DELAYS AND IMPROVE PREDICTABILITY OF TRAVEL TIMES IN MARYLAND'S TRANSPORTATION SYSTEM			
Percent of Transit Service Provided On Time	Indicator of service quality and efficiency and correlates highly with system usage and customer satisfaction	MDOT MTA	32
Percent of Vehicle Miles Traveled (VMT) in Congested Conditions on Freeways/ Expressways and Arterials in Maryland During Evening Peak Hour	Annual average daily traffic/Number of through lanes	MDOT SHA and MDTA	33
Annual Hours (Thousands) of Delay and Travel Time Reliability on the MDOT Highway Network	Tracks the delays caused by congestion on the State Highway system	MDOT SHA and MDTA	33
OBJECTIVE: APPLY ENHANCED TECHNOLOGIES TO IMPROVE COMMUNICATIONS WITH THE TRANSPORTATION SYSTEM USERS AND TO RELAY REAL-TIME TRAVEL INFORMATION			
Customer Satisfaction with the Accuracy of Real-Time Information Systems Provided	An annual survey includes a question about customer satisfaction with real-time information to better understand where improvements can be made and where they have been successful in conveying accurate information	MDOT MTA, MDOT MAA, MDOT SHA, MDOT MVA and MDTA	34
ENSURE ENVIRONMENTAL PROTECTION AND SENSITIVITY			
OBJECTIVE: PROTECT AND ENHANCE THE NATURAL, HISTORIC, AND CULTURAL ENVIRONMENT THROUGH AVOIDANCE, MINIMIZATION, AND MITIGATION OF ADVERSE IMPACTS RELATED TO TRANSPORTATION INFRASTRUCTURE, INCLUDING SUPPORT FOR BROADER EFFORTS TO IMPROVE THE HEALTH OF THE CHESAPEAKE BAY			
Acres of Wetlands or Wildlife Habitat Created, Restored, or Improved	Cumulative tally of acreage created, restored, or improved for wildlife habitat	MDOT MPA, MDOT SHA and MDTA	37
Water Quality Treatment to Protect and Restore the Chesapeake Bay	Reports how well MDOT is achieving compliance with impervious surface restoration as required by the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit	MDOT SHA	37
OBJECTIVE: EMPLOY RESOURCE PROTECTION AND CONSERVATION PRACTICES IN PROJECT DEVELOPMENT, CONSTRUCTION, OPERATIONS, AND MAINTENANCE OF TRANSPORTATION ASSETS			
Recycled/Reused Materials from Maintenance Activities and Construction/ Demolition Projects	Tracks the reduction of the TBU's impact on solid waste landfill through recycling/reuse of metal, asphalt, and concrete	MDOT	38

APPENDIX: LIST OF PERFORMANCE MEASURES BY GOAL

PERFORMANCE MEASURE	DEFINITION	TBUS	PAGE NUMBER
Utility Electricity Use and Renewable Energy Generation	Measures both the consumption of utility energy and the amount of renewable energy generated by MDOT	MDOT	38
OBJECTIVE: IMPLEMENT INITIATIVES TO REDUCE FOSSIL FUEL CONSUMPTION, MITIGATE GREENHOUSE GASES, AND IMPROVE AIR QUALITY			
Transportation-Related Emissions by Region	Tons of Volatile Organic Compound (VOCs) and nitrogen oxide (NOx), precursors of ozone, emitted per day for an average weekday from transportation sources in the Baltimore and Washington regions	MDOT	39
Transportation-Related Greenhouse Gas (GHG) Emissions	GHG emissions primarily include carbon dioxide, methane, nitrous oxide, carbon monoxide, oxides of nitrogen, and non-methane volatile organic compounds	MDOT	40
Total Electric Vehicles (EVs) Registered in Maryland and Total Publicly Available EV Charging Infrastructure	Tracks the number of EVs purchased by Maryland drivers and the number of EV charging stations across the state	MDOT	41
Compliance Rate and Number of Vehicles Tested for Vehicle Emissions Inspection Program (VEIP) Versus Customer Wait Time	Monitoring the VEIP testing compliance rate ensures system effectiveness and identifies vehicles exceeding allowable standards. Tracking the average wait time at VEIP stations ensures that the 15-minute average wait time requirement is met	MDOT MVA	42
PROMOTE FISCAL RESPONSIBILITY			
OBJECTIVE: ACCELERATE PROJECT COMPLETION THROUGH IMPROVED AND EFFICIENT USE OF ALTERNATIVE PROJECT DELIVERY METHODS AND STRATEGIC PARTNERSHIPS			
Percent of Projects Completed by Original Contract Date	Reports on how efficiently MDOT is managing and delivering contracts and services by determining if contracts are completed by the established commitment date/project completion date	MDOT	44
OBJECTIVE: PROVIDE TRANSPORTATION SERVICES AND SOLUTIONS THAT MAXIMIZE VALUE			
Number of Nonstop Airline Markets Served	Nonstop flights are direct to destination without connections	MDOT MAA	45
Airline Cost per Enplaned Passenger (CPE)	Total airline-related fees /Total enplaned passengers at BWI Marshall Airport	MDOT MTA	45
User Cost Savings for the Traveling Public Due to Incident Management	Cost saving calculated using Coordinated Highways Action Response Team (CHART) incident response data	MDOT SHA and MDTA	46
Operating Cost per Revenue Vehicle Mile	Operating cost for each mode /Total miles when vehicle is in service (not deadheading or down time)	MDOT MTA	47
MDOT MVA Cost per Transaction	Operating costs and capitalized costs /Number of transactions	MDOT MVA	48
OBJECTIVE: ENSURE A CONSISTENT REVENUE STREAM AND AMPLE FINANCING OPPORTUNITIES			
PROVIDE BETTER TRANSPORTATION CHOICES AND CONNECTIONS			
OBJECTIVE: ENHANCE, THROUGH STATEWIDE, REGIONAL, AND LOCAL COORDINATION, TRANSPORTATION NETWORKS TO IMPROVE MOBILITY AND ACCESSIBILITY			
Total Vehicle Miles Traveled (VMT) and VMT per Capita	Tracks the demand for VMT and VMT per person	MDOT SHA	50
Number of Directional Miles Improved for Bicycle Access/Percentage of State-Owned Roadway Centerlane Miles with a Bicycle Level of Comfort (BLOC) Grade "D" or Better	BLOC is an "A" to "F" scale, a formula based on many factors, including outside lane width, the presence of on-street parking, roadway speed, shoulder width, and truck percentage, with the greatest driving factors being shoulder width, speed, and truck percentage	MDOT SHA	50
MDOT MTA and WMATA Transit Ridership	Ridership for Core Bus, Light Rail, Baltimore Metro, MARC, Contracted Commuter Bus, and Paratransit and Taxi Access, and WMATA	MDOT MTA and WMATA	52
OBJECTIVE: INCREASE AND ENHANCE MULTIMODAL CONNECTIONS TO IMPROVE MOVEMENT OF PEOPLE AND GOODS WITHIN AND BETWEEN ACTIVITY CENTERS			
MDOT Survey – Perceptions of Multimodal Connectivity	An annual survey question measures the public's perception of connectivity, highlighting where MDOT has succeeded and where improvements are needed either in infrastructure, services, or outreach	MDOT	53
Access to Transit and Bicycle Access to Transit	Measures how many Maryland customers are within 1/4 mile of a fixed-route transit station and how many Maryland customers can walk or bike to a fixed-route transit (such as Light Rail or MARC) or a multimodal transit center	MDOT MTA	54
OBJECTIVE: INFORM AND EDUCATE CUSTOMERS ON TRANSPORTATION OPTIONS AND BENEFITS			
Transportation Demand Management (TDM) and Commute Mode Share	Commute mode share tracks how Marylanders travel to work and is based on data from the American Communities Survey (U.S. Census)	MDOT	54
Estimated Annual Regional VMT Reduction Through TERMs	Measures the reduction in VMT resulting from Commuter Choice Maryland programs	MDOT	55

MARYLAND DEPARTMENT OF TRANSPORTATION

MISSION STATEMENT

"The Maryland Department of Transportation is a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities."

7201 Corporate Center Drive
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This document is prepared pursuant to Transportation Article Section 2-103.1 of the Annotated Code of Maryland.

Additional copies are available by calling (410) 865-1288; Toll Free (888) 713-1414; or from the internet at www.mdot.maryland.gov.

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