



2022 ANNUAL ATTAINMENT REPORT

Implementing the Maryland Transportation Plan and Consolidated Transportation Program

On Transportation System Performance





LARRY HOGAN
Governor

Since taking office, our administration has remained committed to our promise that Maryland is open for business. Maryland was recently named as one of the most improved states for business, reflecting the numerous new and existing businesses that continue to establish and expand their presence and generate new jobs and opportunities.

As we continue to improve the business climate in our state and expand access to new opportunities for all Marylanders, our transportation system will be essential to growing Maryland's economy and providing a premium citizen and customer experience. On behalf of the State of Maryland, thank you to the dedicated employees and partners of the Maryland Department of Transportation (MDOT) for their unwavering focus on preserving our state's transportation systems and their continued commitment to planning for the transportation needs of the future.

Over the past two years, the world has faced extraordinary challenges as a result of the COVID-19 pandemic. During this demanding period, Maryland's transportation system has exemplified the tremendous resiliency of our great state and we are seeing trends towards recovery within our transportation system.

Travel volumes are nearing pre-pandemic levels as our state's toll facilities and airports have experienced higher traffic volumes. The Port of Baltimore has also seen a robust rebound, recently adding four new giant cranes, expanding the Port's ability to handle ultra-large container ships to meet the growing demand for materials and services.

The MDOT Maryland Transit Administration (MDOT MTA) continues to ensure both reliable bus and rail transport and convenient customer service to Marylanders across the state. To meet the needs of customers, the MDOT Motor Vehicle Administration (MDOT MVA) has expanded its online services through the Customer Connect system and is now serving more customers online than ever before while continuing to operate under an appointment-based model. I am extremely proud of all the MDOT employees who continue to go the extra mile for our customers, and express the gratitude of our state for your continued dedication and service.

The COVID-19 pandemic will have lasting impacts on the way we live our lives and how we travel. Maryland remains committed to a world class transportation system that addresses the needs of all residents and travelers.



JAMES F. PORTS, JR.
Secretary

MDOT joins millions of Americans as we chart our course through the COVID-19 pandemic. There is no question COVID-19 had a major impact on the state's transportation system. All travel declined substantially throughout 2020. We are now seeing the transportation system rebound as more and more people get back on the roads, use our transit systems, ship goods in and out of the Port, and choose to fly to locations outside the state.

Our top priority going forward will be to make sure our transportation system is in a state of good repair. We will also continue to build intelligence across our assets; deliver infrastructure projects in a way that incorporates technology, flexibility, resiliency, and future growth; and provide safe and accessible mobility choices for all users, including pedestrians and bicyclists. MDOT is developing a Blueprint to better outline our system of the future as integrated, smarter, cleaner, and more automated and connected. The Blueprint will improve how the Department propels the movement of goods and services and connects people with the places where they live, work, and play. To keep Marylanders on the move, we will concentrate on four priorities including focusing on the customer, modernizing the organization, managing infrastructure systems, and advancing major projects.

This Attainment Report on Transportation System Performance (AR) continues to track how we are doing and provides us with the information we need to make smart decisions. We have a changing transportation landscape and this report helps us stay focused and on target.



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."

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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 Maryland'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 more than 10,000 employees working together towards the mission of ensuring that 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, MDOT contributes funds to WMATA, the Governor appoints two Maryland WMATA Board members 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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HIGHLIGHTS

Below are some of MDOT's performance results and key strategies during the past year

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

- In January 2021, MDOT announced implementation of the 2021-2025 Strategic Highway Safety Plan (SHSP), the latest update of Maryland's five-year plan to identify strategies and actions to eliminate fatalities on state roadways. This plan will mitigate the rise in roadway fatalities in the past year despite the drop in Vehicle Miles Traveled (VMT).
- The SHSP outlines six strategies to improve safety for pedestrians and bicyclists, including using data to identify issues, improving enforcement of laws that promote safe behaviors, building infrastructure that includes proven safety countermeasures, supporting development of new policies and laws, promoting a systemic safety culture through outreach initiatives, and supporting effective engineering and technological approaches to preventing collisions with pedestrians and bicyclists.
- MDOT SHA recently launched a new, interactive web portal for its updated Context Driven Guide, an innovative planning and design resource that offers guidelines to create safe and effective transportation systems for all users – motorists, transit users, pedestrians, bicyclists, and those with mobility challenges.
- MDOT MVA is making great strides with REAL ID, ensuring every Marylander is prepared for the new deadline of May 3, 2023. Currently 84% of Marylanders are REAL ID compliant, one of the highest percentages in the nation.
- MDOT MTA repaired 3,000 track feet of rail along 10 curves while ridership was 65% of pre-pandemic levels, minimizing maintenance impacts to riders and preparing for their safe return to transit.
- In June 2021, BWI Marshall Airport earned the Global Biorisk Advisory Council's® (GBAC) STAR™ accreditation, the industry's gold standard for clean and safe public facilities. As verified by GBAC, MDOT MAA has applied the most stringent protocols for cleaning, disinfection, and infectious disease prevention. GBAC is a division of ISSA, the worldwide cleaning industry association. The GBAC accreditation is reserved for organizations that demonstrate a superior commitment to healthy, clean operations.
- MDOT SHA and MDTA Coordinated Highways Action Response Team (CHART) drivers patrolled 2.4 million miles a year, responded to approximately 23,000 incidents each year, and assisted another 27,000 motorists.

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

- The Port of Baltimore is advancing the Howard Street Tunnel expansion to construction, which will add double-stacked container shipping capability to and from the Port and is expected to increase container volumes at the Port by 160,000 annually and create thousands of additional jobs.
- To accommodate the increasing number of ultra-large container vessels (ULCV) calling on the Port, MDOT MPA and its Public-Private Partnership (P3) partner Ports America Chesapeake (PAC) are in the process of implementing the Seagirt Berth 3 Modernization project to add a second 50-foot-deep berth to the Seagirt Marine Terminal. This will accommodate two ultra-large ships simultaneously allowing more frequent calls from large container ships and contribute approximately 1,950 direct/induced/indirect jobs, resulting in an increase of \$195 million in total economic activity.

- The Port ranks 1st in autos and roll on/roll off heavy equipment, 1st in imported Gypsum, 2nd in exported coal, 10th in the U.S. in the value of foreign cargo (\$49.6 billion), and 11th in the U.S. in foreign cargo tonnage (37.3 million tons).
- In September 2021, Carnival Cruise Line embarked on its first cruise since the pandemic and in December 2021, Royal Caribbean resumed cruises from the Port.
- The Concourse A/B Connector and Baggage Handling System Project will transform a major portion of BWI Marshall Airport, creating an enhanced travel experience for passengers and supporting future growth of Southwest Airlines. The improvements will include direct concourse-to-concourse connectivity for passengers; new food and retail concessions; modern restrooms; and expanded airline hold rooms, all sitting atop a new, sophisticated baggage handling system.
- MDOT SHA has invested in new freight performance tools, the Maryland Roadway Performance Tool, which aligns truck probe data to the Maryland highway network and provides a suite of performance indicators such as delay per mile, cost of congestion, and freight commodity costs.
- MDOT MTA maintained service on all LocalLink and CityLink Bus routes and Mobility Paratransit through the pandemic and leveraged reduced ridership on other services to prioritize state of good repair efforts, such as track work and vehicle overhauls critical for recovering and expanding service post-pandemic.

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

- MDOT SHA recorded 29 bridges rated in poor condition, which is less than half of the 63 that were reported in 2018. This reduction can be attributed to the efficient use of federal funds for current bridge replacement projects and the successful bridge rehabilitation and preservation program.
- MDOT MTA broke ground on the MARC Riverside Heavy Maintenance Facility in Baltimore. When finished, this state-of-the-art facility will enable MDOT MTA to enhance its locomotive and railcar maintenance capabilities and will help support major transit infrastructure improvements along the Northeast Corridor.
- MDOT MTA opened the \$148 million Kirk Avenue Bus Division project that will increase efficiency for maintenance operations and reduce noise and emissions impacts in the community; 175 buses are fueled, washed, stored, and dispatched from the new facility.
- In January 2021, MDOT MPA and the U.S. Army Corps of Engineers completed the Poplar Island Ecosystem Restoration Project lateral expansion. This provided 575 additional acres of dredged material placement, adding storage capacity of 28 million cubic yards (mcy) of material.
- For MDOT MTA \$400 million will be used to replace MDOT MTA Metro SubwayLink railcars and signal system, \$160 million will be spent to overhaul major systems on light rail trains to ensure reliable service, and \$54 million will be put towards overhauling 63 MARC III passenger cars.



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

- The BWI Marshall Airport was named the top North American airport in its size category in the 2020 Airport Service Quality (ASQ) Awards, which recognizes global airports for delivery of the best customer service as measured by airport passengers.
- Tolls were collected 100% electronically this fiscal year as all-electronic tolling was instituted at every toll facility across the state.
- In April 2021, the MDTA launched *DriveEzMD*, which included a new website, web chat, expanded customer call center, new toll payment choices, text notifications, and more.
- The \$1.1 billion I-95 Express Toll LanesSM Northbound Extension program will relieve congestion and improve travel along the I-95 corridor into Harford County. Construction on the I-95 at Belvidere Road Interchange Design-Build (DB) project is expected to begin in summer 2022.
- MDOT MVA continues to see an increase in online transactions. These services will be enhanced with the rollout of Customer Connect Phase Two, an Information Technology (IT) modernization project that includes driver services, driver enforcement, investigations, and financial services.
- MDOT MTA published the agency's strategic plan for the next five years: Rebuilding Better – Committed to an Equitable Transit Future, which focuses on technology, communication, service delivery, sustainability, and centers equity as a core principle. The plan establishes a post-pandemic vision for the road ahead and makes bold commitments to MDOT MTA riders, employees, and the public.
- The Midfield Taxiway Rehabilitation Project at BWI Marshall Airport rehabilitated more than 95,000 square yards (SY) of existing asphalt taxiway and added 13,700 SY of new concrete taxiway providing direct access to Runway 10, providing more reliable and direct access to high-use cargo buildings.

GOAL: ENSURE ENVIRONMENTAL PROTECTION AND SENSITIVITY

- MDOT advanced the MDOT Greenhouse Gas Reduction Act (GGRA) Plan, a component of the Maryland 2030 GGRA Plan to reduce statewide greenhouse gas (GHG) emissions by 40% from 2006 levels by 2030.
- MDOT MPA was awarded an American Association of Port Authorities Award of Excellence for Environmental Mitigation for a demonstration project that removes excess nutrient pollution and increases oxygen content in the Baltimore Harbor.
- MDOT SHA continued implementation of stormwater management and water quality improvement projects and treated 175% of its impervious surfaces not previously treated by stormwater management controls.
- MDOT MTA completed a transition study and initiated pilot projects for electrifying, storing, charging, and operating zero-emission transit buses. These efforts include the continued study of alternative fueling technologies for transit vehicles for MDOT MTA and local operators across the state.
- Maryland now has 22 Electric Vehicle Alternative Fuel Corridors (EV-AFCs) designated as signage-ready or signage-pending; EV drivers can find publicly accessible EV charging stations within five miles of EV-AFCs.
- MDOT MAA's Transportation Community Enhancement Grant program supports neighbors who live in the communities impacted by noise from BWI Marshall Airport's daily operations by providing an opportunity to apply for transportation-related grants. Typical enhancement projects include sidewalk repairs and speed bumps. During FY 2021, three grants totaling \$164,020 were recommended for award.
- In April 2021, MDOT MAA completed an update of the Airport Noise Zones (ANZ), describing the noise environment around the airport in a 10-year planning horizon, for both BWI Marshall Airport and Martin State Airport. The ANZs are a valuable tool used by the state and counties in promoting compatible land use around these two state-owned and operated airports.

GOAL: PROMOTE FISCAL RESPONSIBILITY

- Numerous projects across the state will benefit from American Rescue Plan Act (ARPA) funding, including the expansion of the Masonville and Cox Creek dredged material containments sites for the Port of Baltimore, new zero-emission buses for MDOT MTA, and weather-protective awnings for MDOT MVA entrances to cover customers waiting in line, among many other projects.
- The Statewide Aviation Grants program provides important state funding and support for airport improvement projects, MDOT MAA intends to administer \$1.6 million in grants during FY 2022 for regional airports across Maryland.
- In February 2021, the Maryland Board of Public Works unanimously approved an extension of COVID-19 financial assistance to support airport concessions at BWI Marshall Airport. The measure expanded assistance previously enacted by MDOT MAA in April 2020. The rent relief and lease extensions approved by the Board will support airport restaurants and retailers as they recover from the economic crisis brought on by the global pandemic.
- MDOT MVA is continuing to implement and encourage utilization of alternative and online services including web transactions, self-serve kiosks, mail-in options, and others as an alternative to in-branch transactions, which will reduce the cost per transaction.

GOAL: PROVIDE BETTER TRANSPORTATION CHOICES AND CONNECTIONS

- MDOT MTA's new Statewide Transit Plan will outline a 50-year vision for transit in Maryland and help define transit needs across the state. The Plan includes strategies for multimodal connections, locations for mobility hubs, and types of integration, such as payment, information, and trip planning.
- In 2021, MDOT MTA returned MARC Train and Commuter Bus service to pre-pandemic levels; the service return to normal schedules were paired with equipping bike racks on all MARC trains.
- In 2021, MDOT MTA released new 3-day and 10-day transit passes called CharmFlex, a flexible pass that can be used on consecutive and non-consecutive days. Building on the success of nearly 6 million purchases on its CharmPass mobile fare payment app since 2018, riders have purchased over 7,000 CharmFlex passes to date.
- MDOT invested \$1.8 million in FY 2021 for design and continued construction of dedicated bicycle retrofit projects, including the construction of shared-use paths along US 50 in Worcester County and MD 124 in Montgomery County.
- MDOT MTA advanced 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.
- MDOT invested \$2.7 million in FY 2021 to design and construct new sidewalks, including the construction of new directional miles of sidewalk along MD 424 in Anne Arundel County.
- MDOT continued to invest in bicycle and pedestrian projects with grant awards to local jurisdictions through the Transportation Alternatives and Kim Lamphier Bikeways Network programs.



Introduction Guiding Maryland's Transportation System

Connecting you to life's opportunities

Each day, MDOT works to provide a balanced, reliable, safe, and well-managed transportation system, as well as options to connect customers to key destinations and to facilitate continued economic growth. Planning, investing in, and evaluating the Maryland transportation system helps MDOT provide a well-managed transportation system and continue to work towards the state's goals and objectives. Maryland's strategic approach is presented through the State Report on Transportation (SRT) which is made up of three documents:

- The Maryland Transportation Plan (MTP) sets a vision for the transportation system. For more information, please visit: www.mdot.maryland.gov/MTP
- The Consolidated Transportation Program (CTP) is an annually produced six-year budget for Maryland transportation projects. For more information on the FY2022-FY2027 CTP, please visit: www.CTP.maryland.gov
- The Attainment Report on Transportation System Performance (AR), evaluates and reports on the performance of Maryland's transportation system, with a focus on the goals adopted in the MTP

Performance measures and their associated data help MDOT assess progress toward achieving the agency's goals and objectives. Each performance measure corresponds with one of the seven goals of the MTP; the AR also outlines the past year in Maryland's transportation, including the transportation system, system investment, environment, mobility, safety, and accessibility. The AR performance measures and the MTP were updated in 2019. The MTP reflects a 20-year horizon and the AR performance measures are updated every five years with an AR Advisory Committee as a part of the MTP update. Some performance measures continue to be impacted by COVID-19. In the cases where a performance measure continues to be impacted by COVID-19 it will be referenced with a footnote or in the text. Regardless of any unanticipated interruptions to business as usual, MDOT remains committed to progressing towards transportation goals and objectives and serving MDOT customers.

MTP GOALS AND OBJECTIVES



Ensure a **safe, secure, and resilient** transportation system

- 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



Facilitate **economic opportunity and reduce congestion** in Maryland through strategic system expansion

- 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



Maintain a **high standard and modernize** Maryland's Multimodal Transportation System

- 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



Improve the **quality and efficiency** of the transportation system to enhance the customer experience

- 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



Ensure **environmental protection and sensitivity**

- 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



Promote **fiscal responsibility**

- 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



Provide better transportation **choices and connections**

- 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

MARYLAND'S INVESTMENT IN TRANSPORTATION

MDOT uses all available financial resources to maximize the efficiency and value of the transportation system. MDOT is in an era of unprecedented investment in the transportation system, with a \$16.4 billion balanced multi-modal investment across the state.

The main resource is the Transportation Trust Fund (TTF), MDOT's non-lapsing dedicated fund. This fund draws on motor vehicle fuel taxes, vehicle titling taxes, motor vehicle fees (such as registration fees), corporate income taxes, sales and use taxes, operating revenues, bond proceeds, federal sources, and other minor sources. MDOT also actively pursues Public-Private Partnerships (P3s), particularly on innovative projects, such as the Purple Line. P3s are also pursued on a smaller scale, where appropriate, such as various minor projects under the purview of MDOT TSO.

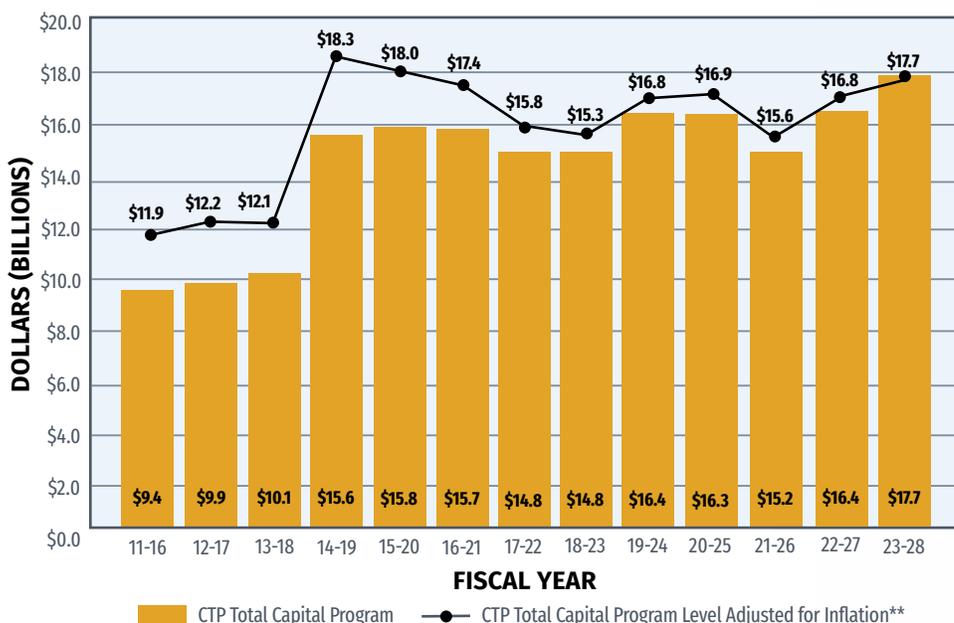
The COVID-19 global pandemic had a significant impact on transportation use and consequently on the TTF revenues. However, MDOT received federal relief and stimulus packages provided through the Coronavirus Aid, Relief, and Economic Security (CARES) Act, Coronavirus Response and Relief Supplemental Appropriations Act (CRRSAA), and American Rescue Plan Act (ARPA). In addition, through joint agreement between the Governor and legislature, MDOT received \$500 million of the State's Fiscal Relief funds received through ARPA. The current six-year capital program includes nearly \$1 billion of funding available from these sources. These funds enabled MDOT to continue providing critical services and outstanding customer service throughout the pandemic while maintaining its commitment to not lay off any of its employees and to not stop progress on any active construction projects. As Maryland continues to recover and businesses return to more normal operations, revenues are recovering, although some revenue sources, like transit fares, will take years to recover. As a result of the expected recovery, the estimated state revenues for the six years of the FY 2022–FY 2027 CTP are \$2.5 billion higher than the estimates for the previous six years from the FY 2021–FY 2026 CTP.

Despite the significant decrease in transit ridership, and thus transit revenues, across the nation during the COVID-19 pandemic, transit remains a critical service connecting essential workers and others to employment, housing, healthcare, schools, and shopping. Public transit agencies across the nation were the beneficiaries of all three federal stimulus packages. The funding was intended to allow transit agencies to maintain services in a period of declining revenues from sales tax and fares. MDOT MTA received approximately \$1 billion in funding in total through the three federal stimulus packages, with the vast majority of those funds directed to operations. These infusions of federal funds were important because they offset declining state revenues and allowed precious state funds to be used on other projects, including leveraging the federal funding to ensure continuity of critical port and airport infrastructure projects.

As the state's economy and transportation network continues to recover, transportation investments focus on preserving what we have, planning for future projects, and building what we can to further support Maryland's economy. With limited revenues and resources, MDOT must strategically and efficiently ensure our transportation investments maintain and further our priorities. MDOT is developing a Blueprint to better outline MDOT's system of the future as an integrated, smart, cleaner, and more automated and connected system.

In the FY 2022–FY 2027 CTP, MDOT allocates \$1.03 billion in system preservation minor projects for FY 2022. \$471.1 million of these funds will go towards completing MDOT SHA projects including safety, congestion relief, highway, and bridge projects.

MDOT TOTAL CAPITAL PROGRAM LEVELS (BILLIONS)*



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

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



TRANSPORTATION MOBILITY AND ACCESSIBILITY

Maryland's population increased by 7% between 2010 and 2020. This increase marks the first time the state's population has been recorded in a U.S. Census with more than six million people. Montgomery County, where one in six Maryland residents live, surpassed one million residents and became the first jurisdiction in Maryland to reach that milestone. While the state's population was growing in some places, it declined in others. These changes in population spur land use transformations and alter transportation demands.

In 2021, Vehicle Miles Traveled (VMT) is expected to increase to 54 billion, an 8% increase over 2020, but a 9% decrease from pre-pandemic levels in 2019. While the economy is recovering and trips are increasing from 2020, the transportation system is not yet moving the same amount of people. During the period of decreased vehicular travel, transit agencies across Maryland also experienced significant decreases in ridership. During this period of time, MDOT prioritized light rail maintenance of 3,000 feet of track. Completing this work during the pandemic allowed MDOT MTA to minimize disruptions to customers and maintain assets in a state of good repair.

While physical infrastructure is critical for mobility and accessibility, the pandemic also revealed the importance of the humans that build, maintain, and operate the many modes of transportation that serve Maryland. During the vaccine rollout, transportation employees, such as transit operators, were prioritized for early vaccine access. MDOT MTA, in partnership with the Maryland Department of Health (MDH), jointly hosted vaccine clinics at an MDOT MTA site. Helping transportation workers, such as transit operators, access the vaccine was critical to the operations of a reliable transportation system.

Throughout the global pandemic, MDOT MTA continued to evolve service offerings, schedules, and fare payment options to meet customer needs. One example is realigning LocalLink 63 and extending it to connect Gardenville, Johns Hopkins Bayview, and Tradepoint Atlantic. This realigned route will provide a connection between Tradepoint Atlantic and Northeast Baltimore. Riders are expected to save up to 19 minutes per trip.

While the LocalLink 63 no longer provides fast, direct service from West Baltimore, the new Express BusLink 163 route will directly connect West Baltimore MARC and Tradepoint Atlantic.

An ongoing priority of MDOT is the maintenance of MDOT SHA and MDTA bridges. Failure of a bridge may render an entire section of the roadway network unusable for vehicles, transit, and freight. In 2021, MDOT was successful toward its goal of decreasing the number of bridges in poor condition. MDTA completed the I-895 Bridge Project which replaced the only structurally deficient bridge in MDTA's inventory.

As residents resumed work travel during the spring and summer, MDOT MTA increased service levels for MARC trains and Commuter Buses to pre-pandemic service levels. This past August, service level increases were timed to match expected demand. Both transit services connect Maryland residents to jobs and services in Baltimore and Washington, D.C. While most commuter services saw significant changes in ridership and service levels during the pandemic, other services mostly maintained service levels and ridership throughout the pandemic. MDOT MTA Core Bus service saw few changes in demand relative to other transit modes.

While the pandemic was a key period for maintaining existing assets, it did not stop public agencies from pursuing grant funding to improve mobility. In January 2021, the U.S. Department of Transportation (U.S. DOT) awarded a grant through its Complete Trip ITS4US Deployment Program to the University of Washington to test new apps in several locations, including Baltimore. The new apps will improve spontaneous travel for blind and visually impaired people and help older adults and multilingual travelers visualize a trip. These types of apps are important in ensuring all residents have safe, reliable access to the transportation system.

In 2021, MDOT MTA launched the implementation phase of the Central Maryland Regional Transit Plan. The first phase includes two new transit corridors. The East-West Corridor connects Bayview, Baltimore, and Ellicott City. The North-South Corridor connects Towson to Baltimore. The feasibility study for the two corridors is expected to be complete in early 2022.



BALANCING THE MULTIMODAL APPROACH AND PROVIDING TRANSPORTATION OPTIONS

MDOT knows that a growing population and changing transportation preferences require better integration among travel modes. Modal integration is key to both freight and passenger travel. During the global pandemic, consumers across the nation learned of the complexities behind freight and logistics when they struggled to secure basic household goods. It is also important for people to be able to walk, bike, and use transit in one easy trip. Maryland has many dense areas with land use supportive of multimodal passenger trips. The facilitation of these trips by MDOT and partner agencies can improve public health, air quality, and livability.

Providing options to passengers includes more than just modal options. It also includes alternative fuel options that provide emission reductions opportunities. In 2021, more than 10,000 electric vehicles (EVs) were registered in Maryland, bringing the total number of EVs to just under 40,000. These vehicles are supported by more than 1,000 public charging stations with more than 2,700 charging outlets. In 2021, US 15 was designated as a “Corridor-Ready” EV Alternative Fuel Corridor (EV-AFC), bringing the number of EV-AFCs up to 22 in Maryland. Building this infrastructure gives Maryland consumers choices when and if they purchase an EV.

In September 2021, MDOT MTA released a Strategic Plan that outlines a plan for a sustainable future. One key component is transforming the bus fleet to zero-emission vehicles. The goal is to transition 50% of the agency’s bus fleet to zero-emission vehicles by 2030. Two critical next steps toward achieving this goal is a pilot project that will bring seven Battery Electric Buses (BEBs) into service in 2022.

Commuter Choice Maryland supports these outcomes by connecting with employees and employers to offer resources, information, and incentives for commuting via alternative modes of transportation, such as ridesharing, vanpool, transit, bike/walk, and telework. The program goal is to reduce commute times. Currently, Maryland has the second worst commute times in the nation at 33.8 minutes.

Biking And Walking In Maryland

A core principle of MDOT’s approach to transportation is that networks should be built in such a way that allows people of all ages and abilities to access what they need. Several existing policies and programs are targeted to encourage trips by bicycle and walking, as a means to help reduce congestion, improve air quality, and support the health and well-being of Maryland’s communities.

In 2020, MDOT convened the first ever *WALKTOBER* effort to help promote safe walking and walkability in Maryland. The celebration, which was expanded and improved in 2021, included a month-long series of events and educational programs, intended to help elevate awareness of walking as Maryland’s official state exercise and as a significant piece of Maryland’s transportation network. Building on the success of the 2020 program, MDOT’s *WALKTOBER* effort included a four-part webinar series to help highlight important resources and innovative practices that elected officials, planning professionals, and every day citizens can use to improve walkability outcomes in their communities. The celebration also coincides with National Pedestrian Safety Month and presented a great opportunity to help heighten awareness of the alarming increase in pedestrian-related crashes across the country, including in Maryland. Pedestrian-related safety messaging is closely coordinated with broader efforts of MDOT MVA’s Maryland Highway Safety Office (MHSO), as well as MDOT MTA and MDOT SHA.

The pandemic caused a decrease in VMT, but it increased bicycle and pedestrian activity. While these non-motorized trips allowed people to get exercise while remaining socially-distanced, they also increased the number of conflicts between pedestrians and vehicles. In 2020, Maryland saw a 5.6% increase in pedestrian fatalities, seven more than the previous year. MDOT and its partner agencies have responded through new efforts to reduce pedestrian fatalities. Prince George’s County – the county with the most pedestrian fatalities – launched two different Vision Zero task forces in 2021 to tackle the pedestrian fatality issue. While MDOT has greatly increased its attention to this issue through *WALKTOBER* and through working on state and local Strategic Highway Safety Plans, MDOT is also devoting significant time and resources to improving how our network serves non-motorized travelers.

Since the release of MDOT SHA’s “Context Driven: Access and Mobility for All Users” guide in 2019, the agency has been proactively pursuing a broad range of safety improvements at targeted locations on their roadways. As reflected in their new website and interactive map, the effort has included lane and speed reductions, as well as adding crosswalks and bike lanes in key locations. This is being amplified and carried forward in 2021 as part of the ongoing Pedestrian Safety Action Plan process, which will help harness the collective benefit of the 4 E’s: Enforcement, Engineering, Education, and Emergency Medical Services.

Meanwhile, MDOT continues to support great improvements in our bicycle and pedestrian infrastructure as an integral part of many larger transportation projects, as well as through our discretionary grant programs coordinated with local partners. In September 2021, for example, Governor Hogan announced \$16.8 million in funding to advance 42 bicycle and pedestrian projects across Maryland. In addition to helping address critical safety needs, such investments will help make safe biking and walking a more viable alternative for communities across the state.

In 2021, MDOT MTA moved to allow full-size bikes on board all MARC trains. This type of improvement is critical to increasing access to regional transit services and making those trips much quicker. Allowing bikes on regional trains ensures riders can travel several miles to get to and from the train station to their final destination.



ECONOMIC DRIVERS IN MARYLAND

Air Travel In Maryland

Of the 36 public-use airports in Maryland, the largest is BWI Marshall Airport. In FY 2020, 20 million passengers used the airport, a decrease of 25% from FY 2019. In FY 2021, this number dropped even lower to under 13.3 million, a decrease of 33.8% from FY 2020. Currently, passenger volumes for FY 2022 remain about 25% lower than FY 2019 levels as business and international travel still lags behind domestic leisure travel, but air traffic continues to grow on a weekly basis. Air cargo tonnage has increased at an average rate of 19% over the past five years from CY 2015 to CY 2020, more than doubling the volume processed in CY 2015. BWI Marshall Airport has become one of Amazon's top five busiest air cargo facilities in the nation and currently employs 1,200 people. BWI Marshall Airport has 57% of the regional market share, handling more cargo than Dulles International and Reagan National airports combined.

There have been several new projects at BWI Marshall Airport for passengers this year. A new \$48 million, five gate extension of Concourse A supports further growth for Southwest Airlines and includes new airline hold rooms and jet bridges, upgraded restrooms, and three new food and retail concessions. Five "Minute Suites" were installed, which are private rooms where airport passengers can relax, nap, or work before a flight or during a layover with amenities that include a daybed, television, workstation, and free Wi-Fi. MDOT MAA and Baltimore Gas and Electric (BGE) installed four new DC Fast Charging (DCFC) stations at the airport's cell phone lots to allow motorists to charge their vehicles while waiting for airline passengers to arrive. The utility also installed additional DCFC chargers in the airport's rideshare lot. One final project still in the works is the future terminal improvement for Southwest Airlines, which will include a Concourse A/B Connector and Baggage Handling System Project that will transform a major portion of the airport.

As the COVID-19 pandemic continues, there have been several notable changes at BWI Marshall Airport. First, the Maryland Board of Public Works approved the extension of COVID-19 financial relief for BWI Marshall Airport restaurants and retailers in February 2021 as they recover from the economic crisis brought on by the pandemic. And second, MDOT MAA implemented a program to provide social distancing information for passengers at the airport's security checkpoints. The program monitors, analyzes, and reports physical distancing at security checkpoints and provides notifications for passengers and airport management. Third, MDOT MVA is working on a project that will allow customers to upload their driver license into their Apple Wallet and show their ID on the phone. This effort is part of a larger Information Technology (IT) modernization project.

BWI Marshall Airport received several notable awards and accreditations this year. The airport was named as the top North American airport in its size category in the 2020 Airport Service Quality (ASQ) Awards. The ASQ program recognizes global airports for delivery of the best customer service as measured by airport passengers. In June 2021, BWI Marshall Airport earned the Global Biorisk Advisory Council's® (GBAC) STAR™ accreditation, the industry's gold standard for clean and safe public facilities. As verified by GBAC, MDOT MAA has applied the most stringent protocols for cleaning, disinfection, and infectious disease prevention.



Port of Baltimore

In 2020, the Helen Delich Bentley Port of Baltimore handled 37.3 million tons of international cargo, including more than 10 million tons of general cargo at the public marine terminals, down 14% from the 43.6 million tons in 2019. Despite these drops, the Port ranks 1st for autos, light trucks, and roll on/roll off heavy farm and construction machinery out of U.S. ports, and ranks 2nd in exported coal. Overall, the Port ranks 10th among all ports for total dollar value of cargo and 11th in foreign cargo tonnage. Business at the Port of Baltimore generates more than 15,300 direct jobs, with more than 139,000 jobs in Maryland linked to Port activities. The Port's average annual salary for direct job holders is 9.5% higher than the statewide average annual wage. The Port is responsible for \$3.3 billion in personal income and nearly \$400 million in state and local tax revenues.

Dredging in the Port of Baltimore channel system is the removal of sediment from the sea floor. This activity is key to maintaining proper depths to ensure large shipping vessels have access to the Port. The continual dredging of materials from the Port of Baltimore's channel system is important for economic competitiveness and retaining jobs. Dredging is a continuous activity in the Port of Baltimore channel system. MDOT and its partners have worked together for decades to reuse the dredged materials to restore islands and sensitive ecological areas. In 2021, MDOT worked with its partners to use dredged materials to restore Ridgley's Cove in Baltimore along the Patapsco River. Around 22,000 cubic yards of dredged sediment were used in the project. The revived area will be equipped with recreation space and walking trails.

The Port of Baltimore has seen a robust rebound from the pandemic, reflecting consumer demand for goods and Maryland's stature as a key hub for the growing e-commerce industry. General cargo and containers are up since before the pandemic, with increases of 6.2% and 2.8% from February 2020 to February 2021. The cars and light trucks category saw 30,183 units in February, a 72.8% increase from May 2020.

There have been several important infrastructure changes at the Port this year. The Port of Baltimore received a \$1.6 million grant from the Federal Emergency Management Agency (FEMA) to enhance its cybersecurity infrastructure to protect against cyberattacks and upgrade physical security fixtures such as fencing, lighting, and closed-circuit televisions (CCTV). In April 2021, the Port completed dredging operations to create a second, 50-foot-deep container berth at its Seagirt Marine Terminal, which will allow the Port to accommodate

two ultra-large ships simultaneously by the end of this year. The Port is also advancing plans to expand Baltimore's Howard Street Tunnel to accommodate double-stacked container rail cars. The project will improve clearance in the tunnel and at 22 other locations between Baltimore and Philadelphia. It is expected to increase the Port's business by about 160,000 containers annually and will generate about 6,550 construction jobs, with an additional 7,300 jobs anticipated from the increased business.

The Port has also specifically focused on several environmental initiatives related to sediment dredging and land restoration. The Dredged Material Management Program (DMMP) uses sediment dredged from shipping channels leading to the Port of Baltimore to restore wetlands and eroding islands. Construction was completed on the expansion of Poplar Island near Talbot County, adding 575 acres and capacity for another 28 million cubic yards (mcy) of sediment through 2032. Sediment was also used to restore the underutilized Ridgley's Cove park property in Baltimore City into a multi-use recreation area with walking trails.



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

Safety and security remain top priorities for MDOT, and while the COVID-19 pandemic presented unique challenges, MDOT employees were able to continue serving customers and ensuring the transportation system delivered goods and services and got people where they needed to go. MDOT promotes a culture of safety and is committed to zero deaths on the roadways, waterways, rail, and in the air because every life counts and every crash is preventable. Through a myriad of programs and projects, MDOT and its Transportation Business Units (TBUs) ensure the safety of all users of the transportation system.

In 2020, the pandemic required many people to stay home, resulting in substantial reductions in Vehicle Miles Traveled (VMT), fewer passengers at BWI Marshall Airport, and decreased riders on mass transit and rail systems. This year, more Marylanders began to travel and spend time with family and friends. While there was an overall reduction in VMT, this did not result in a corresponding decrease in traffic-related fatalities.

According to MDOT SHA, at the height of the pandemic, traffic volumes on the roadways were down more than 50%. Fatalities on Maryland roadways, however, increased from 535 to 573 due mainly to speeding, impairment, and lower seat belt use. As traffic volumes increase, it is critical to remind the traveling public that one death is one too many.

To prevent fatalities and avoid serious injuries, MDOT conducts safe driving programs that focus on distracted and impaired driving, driver education, ignition interlocks to prevent impaired driving, motorcycle safety, safety belts, and child seats. Maryland's *Be the Driver* campaign continues to grab

the attention of motorists by reminding them to stay focused; be sober; share the road with pedestrians, bicyclists, and motorcyclists; always buckle up; and to slow down. The messages are particularly relevant given the increase in fatalities during COVID-19. It is a plea for people to take personal responsibility for their safety and the safety of others on the roadway.

Maryland's *ZeroDeaths* website outlines what everyone can do to achieve zero deaths on the transportation system. The state also continues to address safety through the Strategic Highway Safety Plan (SHSP) that outlines the infrastructure and behavioral projects and programs to keep Maryland moving forward on reducing the devastating consequences caused by fatalities and serious injuries.

During the pandemic more people walked and biked to get exercise, continuing an existing national trend of increased walking and biking. To address this challenge, MDOT SHA's Context Driven approach and separated bike lanes have improved pedestrian and bicycle safety. The 2040 Maryland Bicycle and Pedestrian Master Plan outlines changes to the roadway and surrounding environment to continue to improve safety for these users, and the Maryland Trails Plan increases the areas where people can walk and bike.

Other notable achievements include the MDOT SHA Coordinated Highways Action Response Team (CHART), which continues to safeguard highways, respond to crashes, and help stranded motorists. In 2020, they handled 126,272 events including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events. For the seventh year, MDOT MTA has been ranked as the safest transit system in the U.S.

Maintaining the safety and security of the transportation system is a critical mission for MDOT, which works in cooperation with employees, customers, and partners to protect the health and safety of individuals that work for the agency, those who use the system, and people affected by agency projects and activities.

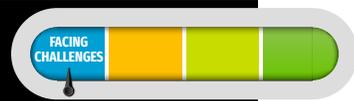
MDOT improves safety performance through risk management, leadership, and engaging customers in the solutions. These safety and security efforts are important to helping ensure that MDOT maintains the highest quality cleanliness standards to keep customers and employees safe and healthy.



OBJECTIVE:

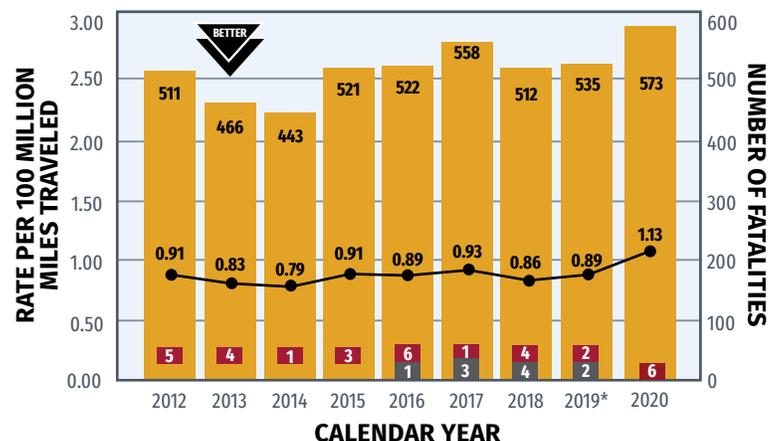
Reduce the number of lives lost and injuries sustained on Maryland's transportation system

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



The safety of the transportation system impacts all residents and visitors. Making transportation safer is a top priority of MDOT, with the ultimate goal of eliminating traffic and transit deaths. MDOT uses several measures to track the safety of the transportation system. The measures include fatalities, serious injuries, and the type of users injured or killed in crashes, such as pedestrians and bicyclists.

ANNUAL NUMBER OF FATALITIES

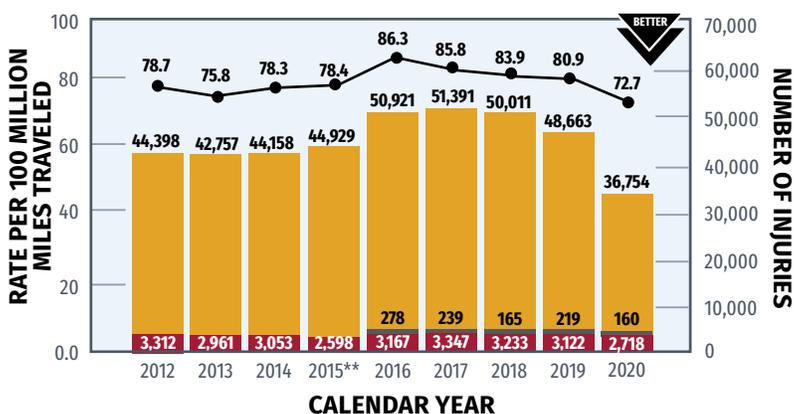


- Annual number of traffic fatalities on all roads in Maryland (including MDTA-owned roads)
- Traffic fatality rate per 100 million miles traveled on all roads in Maryland
- Annual number of traffic fatalities on all MDTA-owned roads, a subset of total annual number of traffic fatalities on all roads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

Target: ≤ 0.81 traffic fatality rate on all roads in Maryland by 12/31/2022, ≤ 4 transit fatalities per year by 12/31/2022, ≤ 476.6 fatalities on all state-owned roads per year by 12/31/2022

* 2019 data has been revised from previous report.

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***: ≤ 3.669 serious personal injury rate on all roads in Maryland by 12/31/2022, ≤ 5.073 serious injury rate of transit passengers on all facilities in Maryland by 2022

* 2018 and 2019 data has been revised from previous report.

** 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.

*** MDOT MTA establishes safety targets outside of the SHSP.

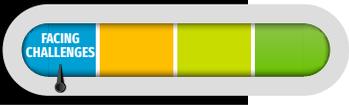
WHY DID PERFORMANCE CHANGE?

- In 2020, Maryland saw a significant reduction in VMT due to the pandemic with corresponding reductions in overall crashes and injuries suffered in those crashes
- While the number of overall crashes and serious injuries decreased in 2020, crashes were more severe, contributing to the rise in roadway fatalities
- Less vehicles on the roadways led to increased speeding, impaired driving, unrestrained occupants, and a continuing disturbing trend of increases in non-motorist deaths
- MDOT MVA's Maryland Highway Safety Office (MHSO) received data from law enforcement reporting speeding violations in excess of 100 miles per hour and increases in violations for drivers traveling 20 miles per hour and more over the speed limit, as well as many crashes that were attributed to excessive speed
- Research from the National Highway Traffic Safety Administration (NHTSA) confirmed that driving patterns and behaviors changed significantly and many of those who remained on the road engaged in more risky behavior
- Fatal crashes, attributed to speed, increased by 30% over a six-month period compared to the prior five-year average during the same time-period

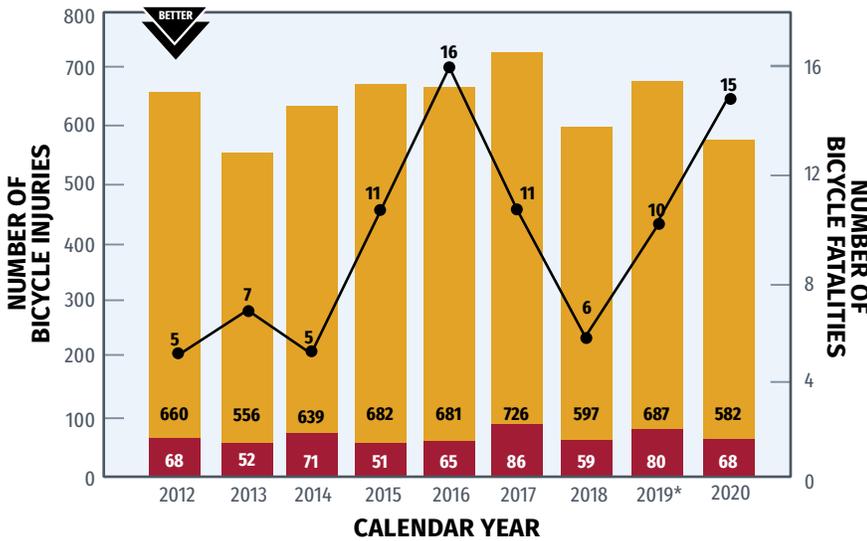
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- In January 2021, MDOT announced implementation of the 2021-2025 SHSP, the latest update of Maryland's five-year plan to identify strategies and actions to eliminate fatalities on state roadways
- The SHSP uses the 4 E's – Enforcement, Engineering, Education, and Emergency Medical Services – as the foundation of lifesaving efforts to address major areas of traffic safety: aggressive and speed-related driving, impaired and distracted driving, highway infrastructure, seat belt use, and pedestrian and bicyclist safety
- The implementation of the statewide SHSP coincided with the development and implementation of local plans, with many jurisdictions modeling their plan after the Maryland plan, recognizing that many crashes occur on locally maintained roads and require a site-specific approach that either is independent of, or in collaboration with, state-maintained road improvement efforts
- MHSO recently launched an overarching highway safety campaign targeting areas of concern and focusing on safe driving behaviors; eliminating motor vehicle crashes and serious injuries on Maryland roadways starts with every traveler following a few simple steps to *Be the Driver* who saves lives
- MDOT MTA will continue working collaboratively with other agencies and jurisdictions to address on-board and off-board safety and security concerns

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



NUMBER OF BICYCLE FATALITIES AND INJURIES

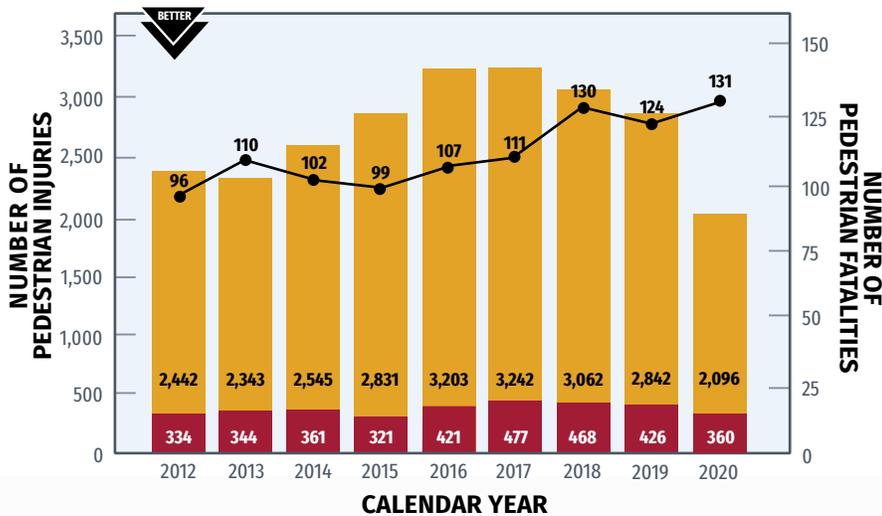


- Number of bicycle injuries on all roads in Maryland
- Number of bicycle fatalities on all roads in Maryland
- Number of serious bicycle injuries on all roads in Maryland

Target: ≤ 10.7 bicycle fatalities per year (based on a rolling five-year average) by 12/31/2022,
 ≤ 62.0 serious bicycle injuries per year by 12/31/2022 (2020-2024 mid-year average target)

* 2019 data has been revised from previous report.

NUMBER OF PEDESTRIAN FATALITIES AND INJURIES*



- Number of pedestrian injuries on all roads in Maryland
- Number of pedestrian fatalities on all roads in Maryland
- Number of pedestrian serious injuries on all roads in Maryland

Target: ≤ 111 pedestrian fatalities per year by 12/31/2022 (2020-2024 mid-year average target),
 ≤ 378.7 pedestrian serious injuries per year by 12/31/2022 (2020-2024 mid-year average target)

* 2018 and 2019 data has been revised from previous report.

WHY DID PERFORMANCE CHANGE?

- Mirroring national trends, Maryland has steadily experienced increases in fatalities and serious injuries among its most vulnerable road users—non-motorists (pedestrians and bicyclists), with one out of every four fatalities in Maryland now being a non-motorist
- While Maryland does not have an exposure measure to precisely determine an increase in road use by pedestrians and bicyclists, Maryland has increased pedestrian and bicyclist facilities year after year and is experiencing similar trends in changes in transportation mode use seen nationally
- With roads largely designed for vehicles moving at high rates of speed, communities with less access to a car or truck are at increased risks for death and injury
- State and local transportation and safety professionals and advocates have steadily shifted away from age-old philosophies regarding motor vehicle and non-motorist mobility and safety, evidenced by the adoption of Complete Street policies and plans, such as in Baltimore City

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA recently launched a new, interactive web portal for its updated Context Driven Guide, an innovative planning and design resource that offers guidelines to create safe and effective transportation systems for all users – motorists, transit users, pedestrians, bicyclists, and those with mobility challenges; the portal also tracks actions being taken to tackle design issues
- MDOT SHA is developing a Pedestrian Safety Action Plan that will help them identify and prioritize key locations for targeted safety improvements, set goals and objectives, and take action
- Using the tools and processes outlined in this guide, MDOT SHA is striking a balance between land-use, the community setting, and the mobility needs of local and regional travelers; the guide is also used to help MDOT SHA address connectivity challenges throughout Maryland
- The 2021-2025 SHSP has pedestrians and bicyclists as a key emphasis area; the plan outlines six strategies to improve safety for pedestrians and bicyclists, including using data to identify issues, improving enforcement of laws that promote safe behaviors, building infrastructure that includes proven safety countermeasures, supporting development of new policies and laws, promoting a systemic safety culture through outreach initiatives, and supporting effective engineering and technological approaches to preventing collisions with pedestrians and bicyclists



OBJECTIVE:

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

With the growing reliance on app-based mobility solutions and online shopping, transportation security is emerging as a critical point of emphasis for transportation owners and operators. As people become more reliant on mobile applications and remote fare payment, the secure exchange of private data and banking information is a critical step in ensuring these modal options and information are widely available. MDOT continues to work with its partners to ensure data security.

As a result of the COVID-19 pandemic, MDOT MVA moved to an appointment-only operation and expanded online services. This resulted in more customers visiting the MDOT MVA website. To exceed customer service expectations, MDOT MVA revamped their website to provide more information about services available online and services that are provided at MDOT MVA offices. Customers who require services in-person at a MDOT MVA office are now required to schedule an appointment online.



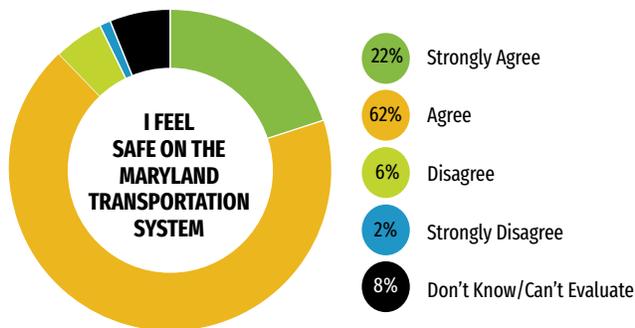
MDOT-WIDE OVERALL PERCEPTION OF SAFETY: CRIME AND SAFE MOVEMENT*

Transportation agencies track safety through fatalities and serious injuries, but another important component of safety is the perception of safety from crime. This performance measure cannot be tracked with safety statistics because perception varies significantly across gender, race, age, and ability. To collect data on this subject, MDOT conducts an annual survey of users to assess their perception of safety. Understanding perceived safety is important because if people do not perceive making a trip to be safe, they may not make the trip, which could mean skipping school, medical appointments, or work. Perception of safety is just as important in providing access to the transportation system through infrastructure such as crosswalks and sidewalks. The solution to perceived safety may span many public agencies, including but not limited to the many TBUs and offices throughout MDOT. Lighting, trash, and graffiti are just a few things that can influence perception of safety.

PERCEPTION OF SAFETY ON THE MARYLAND TRANSPORTATION SYSTEM (2021 DATA)

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

MDOT SURVEY QUESTION



* The survey data reported is 2020 Survey data; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2021 survey data will be published in the 2023 Attainment Report.

WHY DID PERFORMANCE CHANGE?

- MDOT MTA joined the American Public Transit Association (APTA) National Safety Pledge to keep operators and passengers safe through the pandemic

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA will remain focused on adhering to constantly evolving best practices and continue to address safety concerns, public perception, and opportunities to improve safety and security for operators and passengers



PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES



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



CALENDAR YEAR	2014	2015	2016	2017	2018	2019	2020	2021	TARGET
PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES									
Local Bus	1.42	1.43	1.54	1.54	1.44	1.76	1.50	1.40	1.50
Light Rail*	0.06	0.14	0.24	0.02	0.03	0.37	0.03	0.03	0.25
Baltimore Metro	0.00	0.00	0.06	0.06	0.02	0.01	0.01	0.01	0.06
Paratransit/Taxi Access	1.10	0.79	1.04	1.04	0.77	1.32	1.10	1.10	1.00

* 2019 data has been revised from previous report.

WHY DID PERFORMANCE CHANGE?

- MDOT MTA works with operators to collect their safety observations and analyze safety trends including near-misses to improve safety

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT will provide safe transportation throughout the pandemic focused on adhering to constantly evolving best practices for operators and passengers, while continuing to upgrade assets and track safety incidents
- The Sustainability Plan sets goals and performance measures for fostering wellness among employees, enhancing the customer experience, and maintaining assets in a state of good repair; MDOT MTA has acted upon many of the plan recommendations and is actively tracking the performance measures

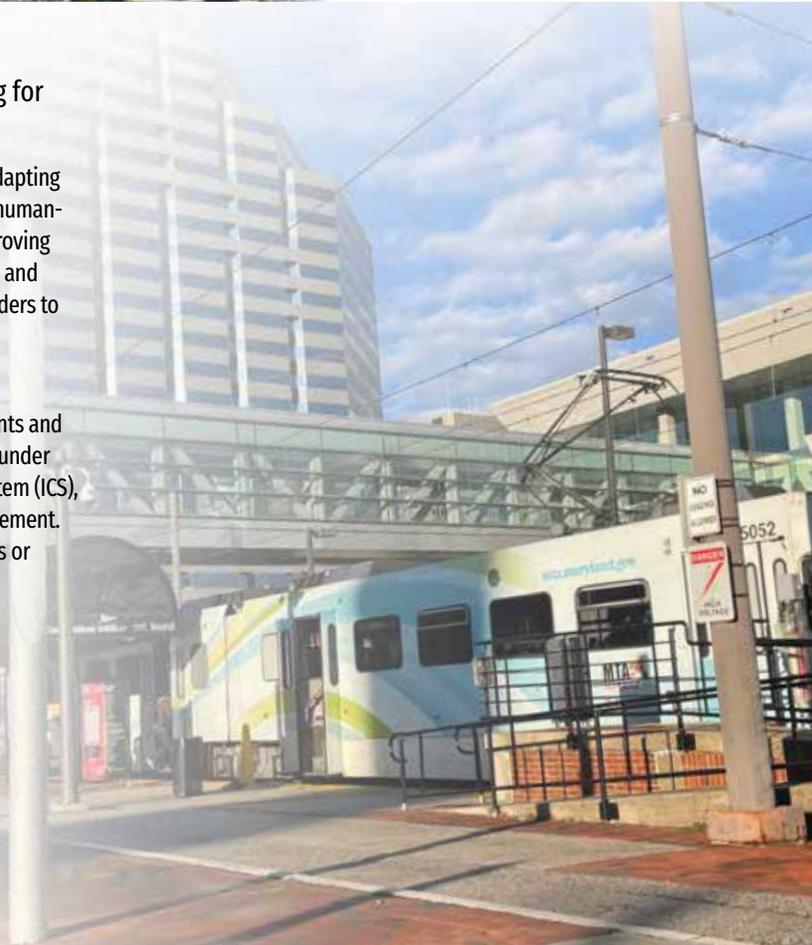


OBJECTIVE:

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

Enhancing Maryland's transportation system's resilience involves preparing for, adapting to, withstanding, and rapidly recovering from all threats whether environmental, human-caused, or technological. MDOT is working on reducing its vulnerabilities and improving its response and recovery times and processes. Personnel at the State Operations and Emergency Operations centers track all incidents and dispatch emergency responders to deal with the situation.

Despite the challenges of operating a system during a health crisis, MDOT and its employees have maintained all essential services and managed to prevent incidents and crashes before they happen. Appropriate MDOT personnel continue to be trained under the National Incident Management System (NIMS) and the Incident Command System (ICS), which provide an integrated approach to incident, crisis, and consequence management. According to MDTA, the average response time for messaging on unplanned events or crashes, excluding anomalies, was 3.25 minutes.



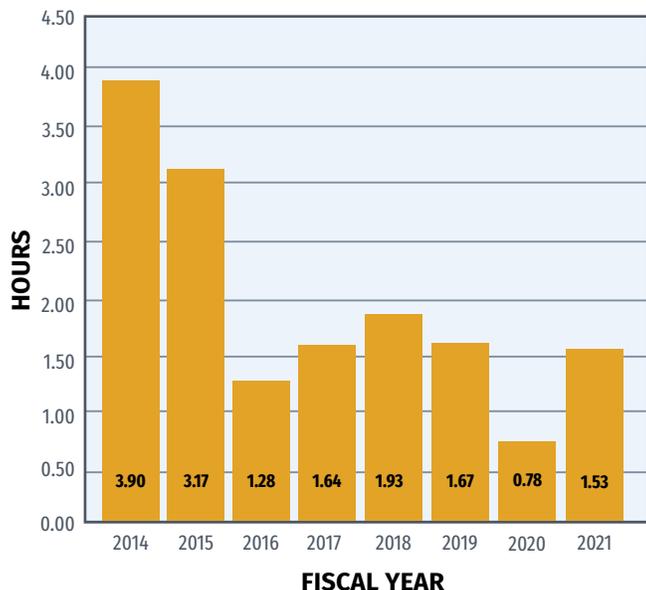
OBJECTIVE:

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



Even the best designed transportation system slows down and has delays for weather. Maryland experiences snow and ice in the winter that requires a comprehensive response to clear roadways. MDTA, MDOT MAA, and MDOT SHA include operations teams that respond to snow and ice events. The goal of snow and ice removal is to minimize the impacts of an event before it occurs and restore the system to full operations as soon as possible.



Target: 4 hours or fewer to regain bare pavement

WHY DID PERFORMANCE CHANGE?

- MDOT SHA regained bare pavement in approximately 1.5 hours, which is only slightly higher than the five-year average, and well below the target of four hours
- With a 20% reduction in traffic volume during the 2020-2021 Winter Season, it took a little longer to regain bare pavement after each winter precipitation event compared to the relatively light winter of 2019-2020
- MDOT SHA had a greater number of ice and sleet accumulation events during the 2020-2021 Winter Season, which often takes additional time to treat and regain bare pavement
- Due to COVID-19, MDOT SHA and contractor staff may have been reduced during several winter events, requiring extra time to regain bare pavement

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA expanded its Direct Liquid Application (DLA) program and now has at least one route in each of the seven districts across the state, with many districts having three or more routes
- MDOT SHA has 34 loader scales as of October 2021 and will continue to expand their use at salt storage facilities that use state loaders to achieve greater accuracy in salt inventory management
- MDOT SHA upgraded its Automatic Vehicle Location (AVL) system in all winter snow fighting equipment, which will allow for increased equipment analytics and more accessible roadway information in the future
- After more than a year of remote working for many statewide central offices, MDOT SHA has returned to in-person salt management training for field staff directly responsible for clearing the roadways during winter operations
- MDOT SHA will continue to expand the use of rubber plow blades with ceramic inserts to aid in the clearing of more snow and ice from the roadway, and therefore reduce salt use



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

While the fluctuation of freight is evident during COVID-19, Maryland remains an important link in global supply chains due to its crossroad freight infrastructure including the Port of Baltimore, major Class I rail lines, and major roads and highways, such as the I-95 corridor. Trucks move the highest tonnage and value. For value, multiple modes and mail have the second highest value followed by rail. While the U.S. Department of Transportation (U.S. DOT) Freight Analysis Framework (FAF) data are estimates of value based on actual inputs and factoring, they do well represent the levels of value Maryland experiences. With the gross domestic product (GDP) growth rates factored in, the increasing trends of the previous years along with the decrease of 2020 can be seen. In 2020, due to COVID-19, freight volumes were generally low for the initial quarters and then began to recover quickly as the year progressed, with the exception of air cargo that steadily increased. Freight activity is getting back to pre-COVID-19 levels. The Port of Baltimore remains the largest auto and roll on/roll off port in the U.S.

MDOT SHA has also begun work on a truck parking widget to help improve truck parking challenges in Maryland, which will help with both safety and freight efficiency. MDOT has begun work on an update to the Statewide Freight Plan and has renewed the State Freight Advisory Committee in line with federal Fixing America's Surface Transportation (FAST) Act requirements.

Maryland has an extensive transportation system that supports both passenger travel and goods movement, both of which are important for economic growth. Residents, workers, and visitors of Maryland used rail, buses, highways, airports, and other transportation modes to get home, to work, or to important places of interest. Important goods are transported throughout Maryland on freight trains, cargo planes, trucks, and cargo ships.



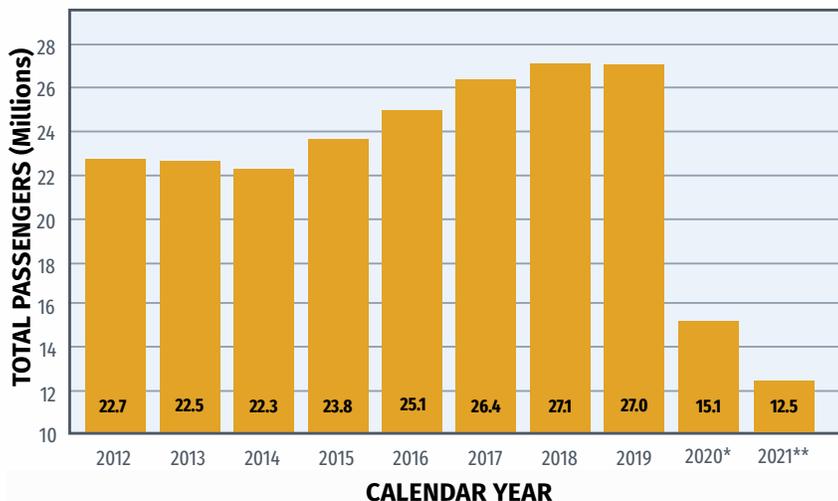
OBJECTIVE:

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



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



*2020 data has been revised from previous report.

**2021 data is preliminary and subject to change.



WHY DID PERFORMANCE CHANGE?

- March 2020 saw the onset of the COVID-19 pandemic, which decreased passenger demand
- The low-point in April 2020 saw passenger traffic down 96% from April 2019; in the end, CY 2020 saw passenger counts at BWI Marshall Airport decline more than 58%
- In early 2021, with the increase in vaccinations, passenger demand increased significantly, and by August 2021 passenger levels were twice that of August 2020, but still down 25% from the pre-pandemic level of August 2019

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MAA Office of Air Service Development continues to meet with airlines regarding both new service and the restoration of lost service
- Ongoing terminal improvements for Southwest Airlines are in the works; these include a Concourse A/B Connector and Baggage Handling System Project that will transform a major portion of the airport; this will allow direct concourse-to-concourse connectivity for passengers, new food and retail concessions, modern restrooms, and expanded airline hold rooms; there is also utility work that will support construction of a major aircraft maintenance facility for Southwest Airlines

INTERNATIONAL CRUISES USING THE PORT OF BALTIMORE*



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	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of International Cruises using MDOT MPA's Terminal	100	93	99	75	94	86	94	94	69	0

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

*The entire cruise industry was shut down in March 2020 due to COVID-19 and remained under a CDC issued "no sail" order unless certain criteria were met. It is expected that cruises will resume from Baltimore in FY 2022.

WHY DID PERFORMANCE CHANGE?

- The entire cruise industry was shut down for much of FY 2020 and FY 2021 due to the COVID-19 pandemic so there were no international cruises that used the Port of Baltimore in FY 2021
- MDOT MPA added new check-in stations, carpeting, restrooms, a VIP lounge, traffic flow advancements, and a public address system for customer comfort at the Cruise Maryland Terminal (the South Locust Point Cruise Terminal)

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- The two homeport cruises are resuming service; Carnival embarked on its first cruise since the start of the pandemic in September 2021 and Royal Caribbean resumed cruises from the port in December 2021

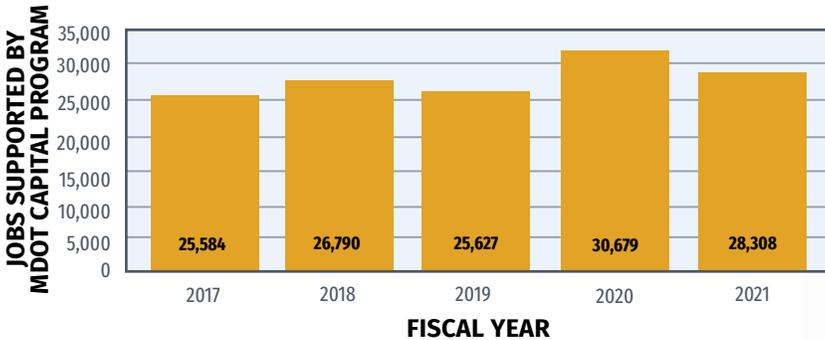


JOBS SUPPORTED BY MDOT CAPITAL PROGRAM*

MAKING PROGRESS

Economic return from transportation investment is based on the estimated number of jobs created as a result of MDOT investments in capital projects.

Annually, the CTP lists MDOT's planned capital 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.



* This measure will be reported in the AR until the replacement measure, Change in Market Access and Productivity Due to Improvements in the Transportation Network, is ready for reporting.

OBJECTIVE:

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

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- The Howard Street Tunnel project is expected to generate about 6,550 construction jobs and an additional 7,300 jobs from the increased business
- Construction of the Frederick Douglass Tunnel is expected to generate 30,000 jobs across the Baltimore region over 10 years; most of the jobs will be construction jobs
- A second 50-foot-deep berth at the Seagirt Marine Terminal will allow more frequent calls from large container ships and is estimated to contribute approximately 1,950 direct/induced/indirect jobs, resulting in an increase of \$195 million in total economic activity



IMPROVING GOODS MOVEMENT: FREIGHT ORIGINATING AND TERMINATING IN MARYLAND

FREIGHT ORIGINATING AND TERMINATING IN MARYLAND*

METHOD FOR MOVING FREIGHT	TOTAL VALUE (MILLIONS)	TOTAL TONNAGE (THOUSANDS) SATISFIED
Air	\$6,213	58
Other**	\$65,025	6,815
Pipeline	\$7,110	34,645
Rail	\$13,686	25,626
Truck	\$295,608	225,129
Water	\$517	3,142
All Freight	\$388,159	295,417

* Source: U.S. Department of Transportation Freight Analysis Framework (FAF4) Version 4.5.1. that was refactored using 2019 data. To report 2019 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 2019, based on U.S. Army Corps of Engineers reporting.

** Category "Other" includes multiple modes, mail, and other and unknown categories from data from the Freight Analysis Framework Version 4.5.1.

Maryland is an important link in global supply chains due to its significant freight infrastructure including the Port of Baltimore and major Class I rail lines, as well as interstate highways, such as I-95, US 50, I-81, I-70, I-83, and US 301. The Port of Baltimore remains the largest auto and roll on/roll off port in the U.S. In 2020, due to COVID-19, freight volumes were generally low for the initial quarters and then began to recover quickly as the year progressed. With the GDP growth rates factored in, the increasing trends of the previous years along with the decrease of 2020 can be seen.

One important strategy to improve goods movement is the continued work to construct the Howard Street Tunnel expansion. This project will add double-stacked container shipping capability to and from the Port of Baltimore, which is expected to increase container volumes at the Port by 160,000 annually and create thousands of additional jobs. The Port of Baltimore is a nationally significant freight facility and is the port closest to Mid-American inland markets. MDOT SHA has also invested in freight performance; the Maryland Roadway Performance Tool aligns truck probe data to the Maryland highway network and provides a suite of performance indicators such as delay per mile, cost of congestion, and freight commodity costs. Finally, MDOT is updating the Statewide Freight Plan, the Statewide Rail Plan, and has renewed the State Freight Advisory Committee in line with federal FAST Act requirements.

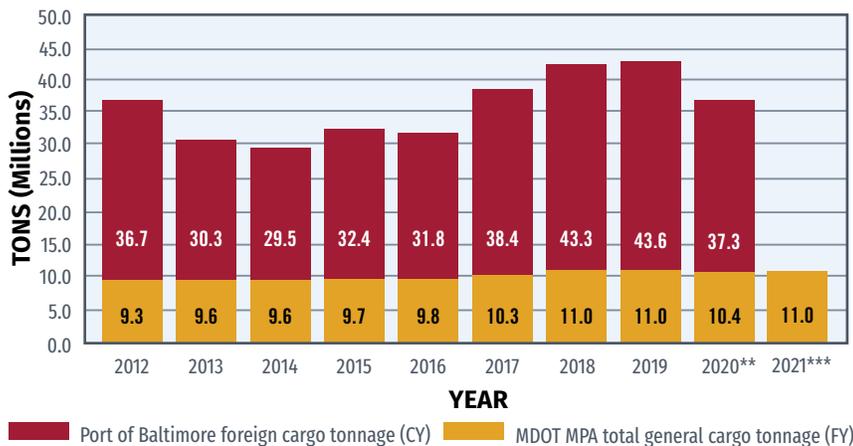
During the last five years (2015-2020), air cargo tonnage at BWI Marshall Airport has increased at an average annual rate of 19% - more than doubling the volume processed in 2015. With the opening of the new Midfield Cargo building in late-2019, BWI Marshall Airport has become one of Amazon's top five busiest air cargo facilities in the nation (out of 35) and currently employs more than 1,200 people. As of 2020, BWI Marshall Airport has 57% of the regional market share handling more cargo than Dulles International and Reagan National airports combined. Moving forward, MDOT MAA continues to explore opportunities to accommodate growth in both the domestic and international air cargo markets.





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

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



* MDOT MPA cargo data is provided by fiscal year, but Port information is reported using the latest full calendar year because Port statistics combine data for public and private marine terminals that use different fiscal year reporting timeframes. Therefore, 2021 data cannot be reported until early 2022.

** 2020 data has been 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 2021 is an estimate; fiscal year date for 2021 is not yet available.

WHY DID PERFORMANCE CHANGE?

- The Port of Baltimore’s public and private marine terminals continue to rebound from the COVID-19 pandemic and handled 37.3 million tons of cargo in CY 2020
- Approximately two-thirds of the Port’s tonnage are bulk commodities, and the largest is coal; the remaining third is general cargo; the largest component of general cargo is containerized goods, however, it is noteworthy that the general cargo has 94% of the international cargo’s value

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MPA promotes the entire Port of Baltimore to all potential users and will continue to work with the private terminal operators to assess their needs; MDOT MPA will also continue to work with the U.S. Army Corps of Engineers to make sure that the channels are dredged to federally authorized dimensions
- The Port currently faces a competitive disadvantage with containerized cargo because of a lack of high-cube double-stack rail clearance; neither CSX nor Norfolk Southern can offer this type of service in Baltimore due to clearance issues; in 2019, MDOT applied for and secured an Infrastructure for Rebuilding America (INFRA) grant to address the clearance issues associated with CSX’s Howard Street Tunnel; the project received a National Environmental Policy Act (NEPA) Finding of No Significant Impact (FONSI); efforts are currently underway that will allow CSX and MDOT MPA to begin construction in FY 2022
- Ports America Chesapeake (PAC) continues to make investments at the Seagirt Marine Terminal (ensuring that the MDOT MPA can handle the large container ships); in 2019, MDOT MPA and PAC received a \$6.6 million Better Utilizing Investments to Leverage Development (BUILD) grant for a \$32.8 million project to modernize Berth 3 at Seagirt; design and engineering are currently underway; the project will allow the Port to simultaneously handle two ultra large container vessels (ULCV) at Seagirt



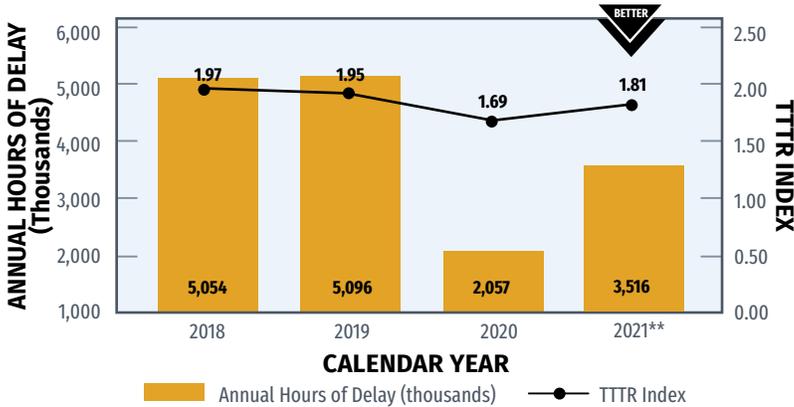
ANNUAL HOURS OF DELAY FOR TRUCKS AND TRUCK TRAVEL TIME RELIABILITY INDEX*



Delay and reliability can affect many things in a supply chain beyond just the truck transporting the goods. An efficient and reliable system translates to improved goods movement, which supports Maryland's businesses and economic growth positively. MDOT has been a leader in measuring freight mobility following industry tested and supported methods. Maryland's annual Mobility Report allows MDOT to see how well freight moves and to identify freight bottlenecks and track them over time. Additionally, MDOT continues to build new resources using truck probe data to understand freight mobility dynamics and the impact of delay on key Maryland supply chains.

In addition to MDOT's tracking of freight mobility, MDOT responds to the federal Moving Ahead for Progress in the 21st Century (MAP-21) and FAST Act performance measure requirements for the Truck Travel Time Reliability (TTTR) index.

The following graph shows the annual TTTR in relation to the annual hours of delay.



Target: 6,070 (\$6.1 million) Thousand Hours Of Truck Delay In 2021, TTTR of 1.88 in 2021

* 2018-2020 data has been revised from previous report.

** 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- Due to the uncertainty related to the pandemic and recovery, the estimation of the levels of truck travel has been difficult to determine, thereby affecting the 2020 actual data and requiring revisions to the future target data; truck volumes during the first half of 2021 have fluctuated around 2019 levels
- As traffic volumes rebound from peak pandemic levels, the total number of crashes and incidents continue to remain high; the severity of the crashes and higher percentage of commercial vehicle-related incidents is still a concern

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Congestion and reliability trends of trucks and all vehicles needs to be carefully monitored to strategically invest in freight corridors and highway networks; as Maryland travel begins to go back to relatively normal conditions, data and performance-driven capital and operational technology investments would be required
- 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 and Transportation Systems Management and Operations (TSMO) strategies
- Continue active monitoring of transportation system, incident detection and clearance, and deploy road weather management strategies to restore capacity on Maryland highways for better traffic and truck travel

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



Target: \$4.1 billion in 2023

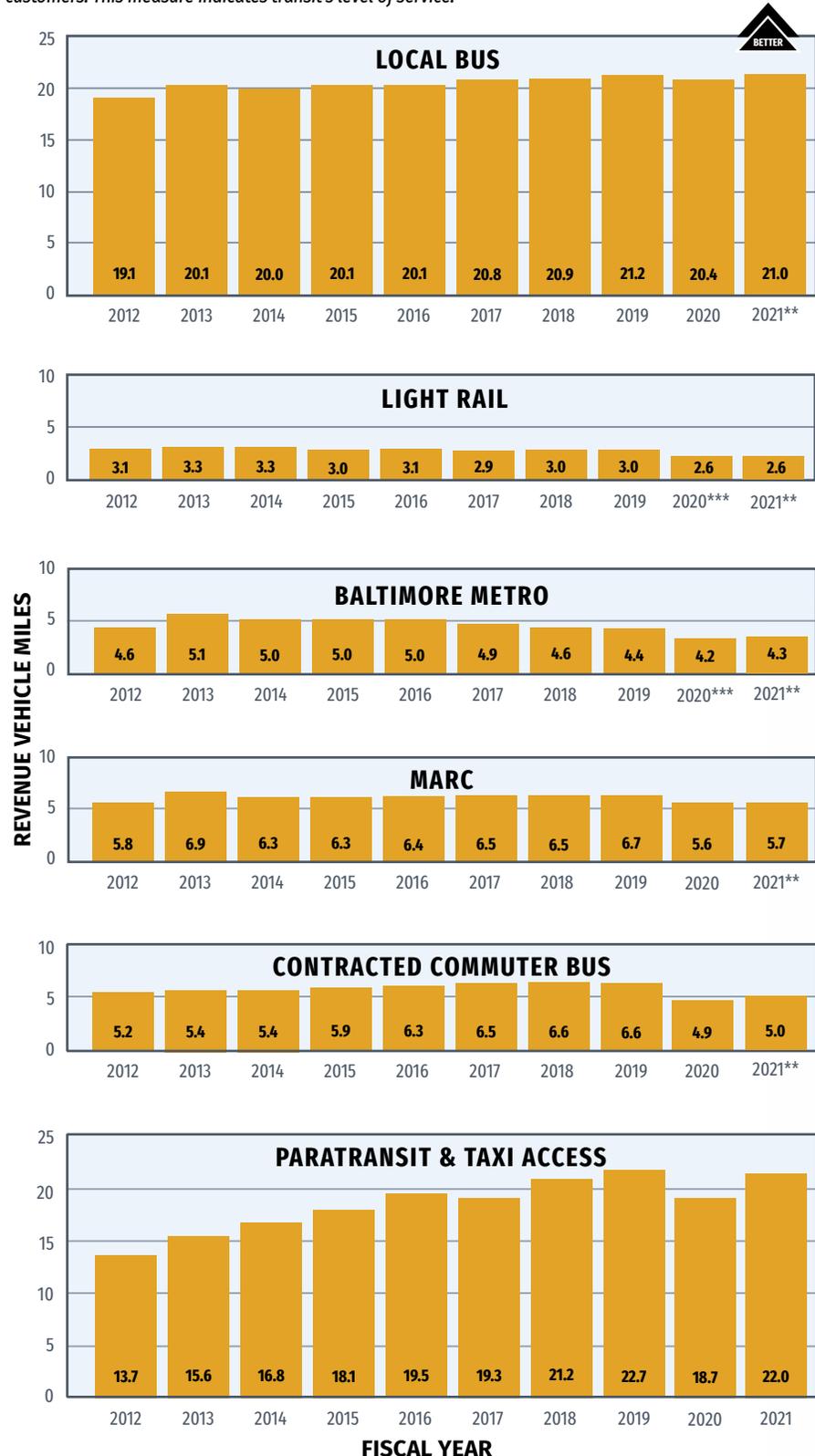
* 2021 data is preliminary and subject to change.

Congestion and reliability trends of vehicles needs to be carefully monitored as Maryland recovers from the COVID-19 pandemic and travel begins to go back to relatively normal conditions. Different corridors and regions are likely going to experience different recovery rates of peak hour travel conditions; therefore, data and performance driven capital and operational technology investments would be required accordingly.

ANNUAL REVENUE VEHICLE MILES OF TRANSIT SERVICE PROVIDED*



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.



WHY DID PERFORMANCE CHANGE?

- During the pandemic, MDOT MTA sought feedback from the public and stakeholders on service priorities; as a result, MDOT MTA maintained service on all Core Local Bus routes and Mobility services
- Baltimore Metro SubwayLink continued to perform scheduled track repair and maintenance, toward the goal of maintaining assets in a state of good repair; completing these projects during a period of decreased ridership minimized the impact on the riding public

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- For fall 2021, MDOT MTA announced bus route improvements that support multiple job centers across the region, especially focused on connecting essential workers to their jobs
- As travel patterns return to normal, MDOT MTA will continue to evaluate opportunities to provide reliable service through specified terms in new contracts for contracted services



* All units are revenue miles (millions). Excludes Locally Operated Transit Systems (LOTS) and WMATA.
 ** 2021 data is preliminary and subject to change.
 *** 2020 data has been revised from previous report.

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 technology, 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

Maintaining a multimodal transportation system is a top priority for MDOT. With every maintenance project, MDOT must decide between maintaining or upgrading an asset. In an unprecedented era of technology, there are many technological advances that can be incorporated into basic signal, paving, and transit fleet projects to improve communications between infrastructure and MDOT or MDOT and the customer.

In 2021, the Howard Street Tunnel expansion project made significant progress through the project development process. Double-stack capability from the Port of Baltimore has long been a priority for MDOT MPA. The primary obstacle to achieving that goal has been CSX's Howard Street Tunnel, a 126-year-old, 1.7-mile-long railroad tunnel through the heart of Baltimore City that is approximately 18 inches too short to accommodate double-stack intermodal trains. For years it was thought that improvements to the existing tunnel would cost billions of dollars and be highly disruptive to the surrounding communities. Using advances in engineering technology, MDOT MPA and CSX developed a solution that can be delivered at a fraction of the original cost estimate with limited impacts to the public. Construction is expected to begin in FY 2022 and be completed by the end of FY 2026. Once complete, the project will generate an additional 160,000 containers per year through the Port of Baltimore.

While COVID-19 impacted many aspects of life, it did not defer or prevent maintenance. In some cases, the decreased vehicle traffic allowed agencies to do more maintenance or more impactful construction while traffic volumes were low, ultimately affecting less people. MDOT MTA repaired 3,000 miles of track while ridership was 65% of pre-pandemic levels to minimize impacts to riders.

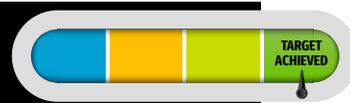
With the increasing demand for air cargo facilities, rehabilitation of the Midfield Cargo Complex taxiway was needed to provide reliable access from a growing cargo operator's new 200,000 square-foot (SF) high-use cargo building and apron to the main runways. This project rehabilitated over 95,000 square yards (SY) of existing asphalt taxiway and added 13,700 SY of new concrete taxiway providing direct access to the Runway 10 end. The Midfield Taxiway Rehabilitation Project at BWI Marshall Airport received multiple industry awards including the 2021 Construction Management Association of America (CMAA) Baltimore Chapter Project Achievement Award.



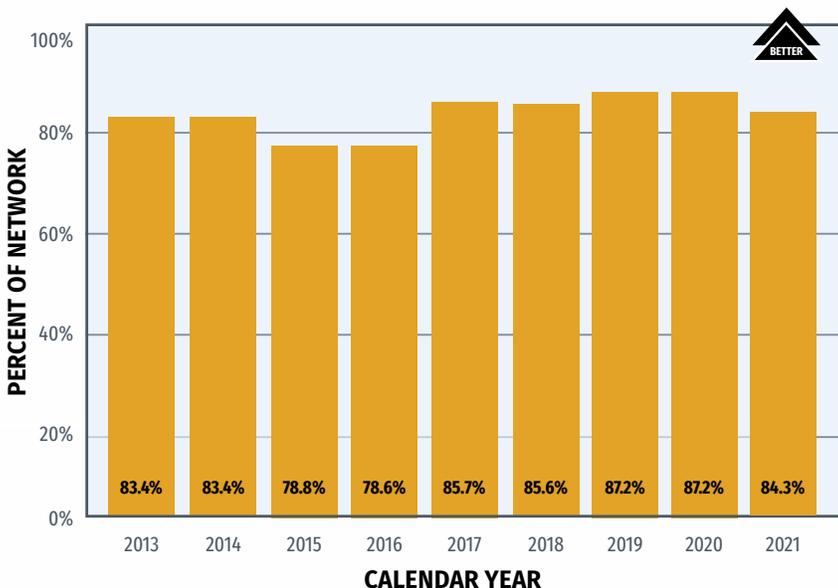
OBJECTIVE:

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?

- MDOT SHA achieved a level of service of 84.3%, which is only slightly lower than the target of 85%
- Due to COVID-19, MDOT SHA maintenance shops were operating on staggered shifts, with half-staff working at any given time, for several months during FY 2021; employees had to maintain social distance, which made for some less efficient operations, and some deferral of work that required close proximity; additionally, MDOT SHA and contractors experienced workforce shortages that prevented planned work from being completed
- For a fourth straight year, the winter weather was relatively light or average, which minimized damage to assets

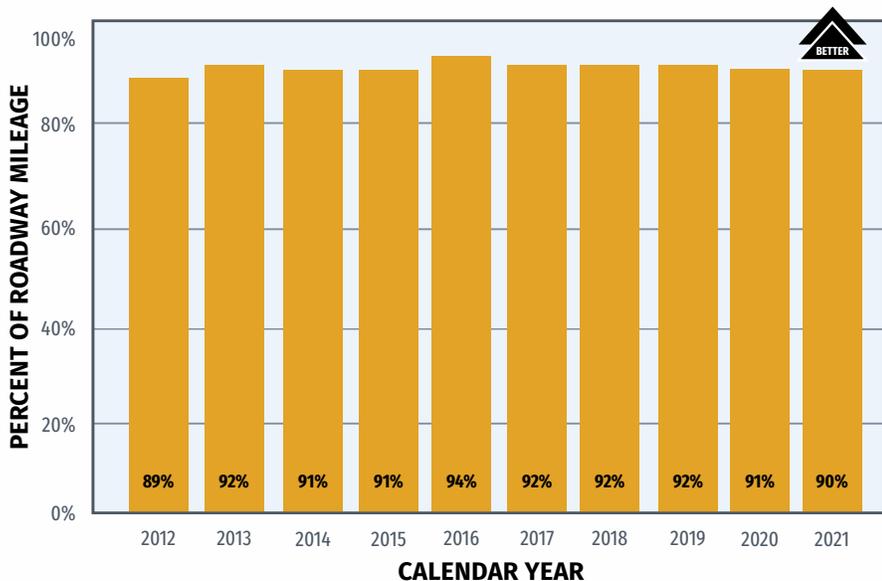
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA will utilize new equipment and new processes to perform work more efficiently
- MDOT SHA will utilize the asset management program to strategically target right-sized improvements at the appropriate locations and times

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. 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. MDOT conducts yearly roadway inspections to ensure safety, efficiency, mobility, and accessibility in the movement of people and goods.



Target: 90% Annually

* 2021 data is preliminary and subject to change.

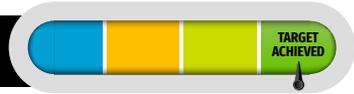
WHY DID PERFORMANCE CHANGE?

- MDOT SHA resurfaced approximately 2.5% of its pavement network in 2020, which is lower than the 5% reported in 2019; preventative maintenance covered an additional 6.5% of the network, which is lower compared to 16% in 2019, these reductions in maintenance were a direct result of budget cuts caused by COVID-19
- MDOT anticipates that the "percent acceptable" conditions will generally remain steady during the next one to two years despite the gap between the reasonably available funding and the objective funding needed to maintain a state of good repair long-term

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA will focus on improving roadways with deficient cracking and continue the increased use of pavement preservation treatments, where appropriate, to extend the service of MDOT SHA roadways at the lowest possible cost
- To proactively address friction improvement needs across its roadway network, MDOT SHA is planning to advertise two statewide friction contracts for high friction surface treatment, surface abrasion, and diamond grinding

NUMBER OF BRIDGES AND PERCENT THAT ARE IN POOR CONDITION



The poor condition rating (also previously referred to as structurally deficient) is an indicator for engineers to initiate the rehabilitation or replacement process and is used when prioritizing and recommending system preservation funding. A bridge is not considered unsafe if it is poor rated; unsafe bridges are closed. The rating applies to the three structural components of the bridge (deck, superstructure, and substructure), and is scaled from 0 (closed to traffic) to 9 (relatively new) per the National Bridge Inventory (NBI) requirements. All bridges are inspected at least once every two years. If any of these elements are rated as a four or less, the bridge is considered to be in poor condition per federal standards. Bridge repair projects remain high priorities due to the inconvenience and traffic re-routing problems that can occur when bridges close.

CALENDAR YEAR	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Number of MDTA Bridges in Poor Condition	4	1	1	1	1	1	1	1	1	0
Number of MDOT SHA Bridges in Poor Condition	97	87	81	69	69	67	62	52	36	29
Total Number of Bridges in Poor Condition	101	88	82	70	70	68	63	53	37	29
Percent of Bridges in Poor Condition	3.5%	3.0%	2.8%	2.4%	2.4%	2.4%	2.2%	1.8%	1.3%	1.0%

WHY DID PERFORMANCE CHANGE?

- MDOT SHA recorded 29 poor rated bridges during their annual condition submission to the Federal Highway Administration (FHWA) in March 2021; this reduction can be attributed to the efficient use of federal funds for current bridge replacement projects and the successful bridge rehabilitation and preservation program; MDOT SHA continues to develop plans for bridges with a poor rating that cannot be repaired under the preservation program
- MDOT SHA continued the bridge rehabilitation and preservation program in which on-call construction crews, working full-time year-round, address bridges rated as poor or fair to bring them into a state of good repair and minimize the number of bridges that would deteriorate to a poor rating without rehabilitation; the number of active on-call construction crews was reduced from 30 to 9 due to a decline in available state funds requiring a new approach to funding this program; to preserve state funds for emergencies, MDOT SHA advertised four FHWA Special Experimental Project No. 14 (SEP-14) Contracts that use the Indefinite Delivery and Indefinite Quantity (ID/IQ) scopes of work that use federal funds to support the bridge rehabilitation and preservation program
- MDTA delivered the I-895 Bridge Project which replaced the 60-year-old Canton Viaduct and rehabilitated the Baltimore Harbor Tunnel. The bridge was MDTA's only structurally deficient bridge

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

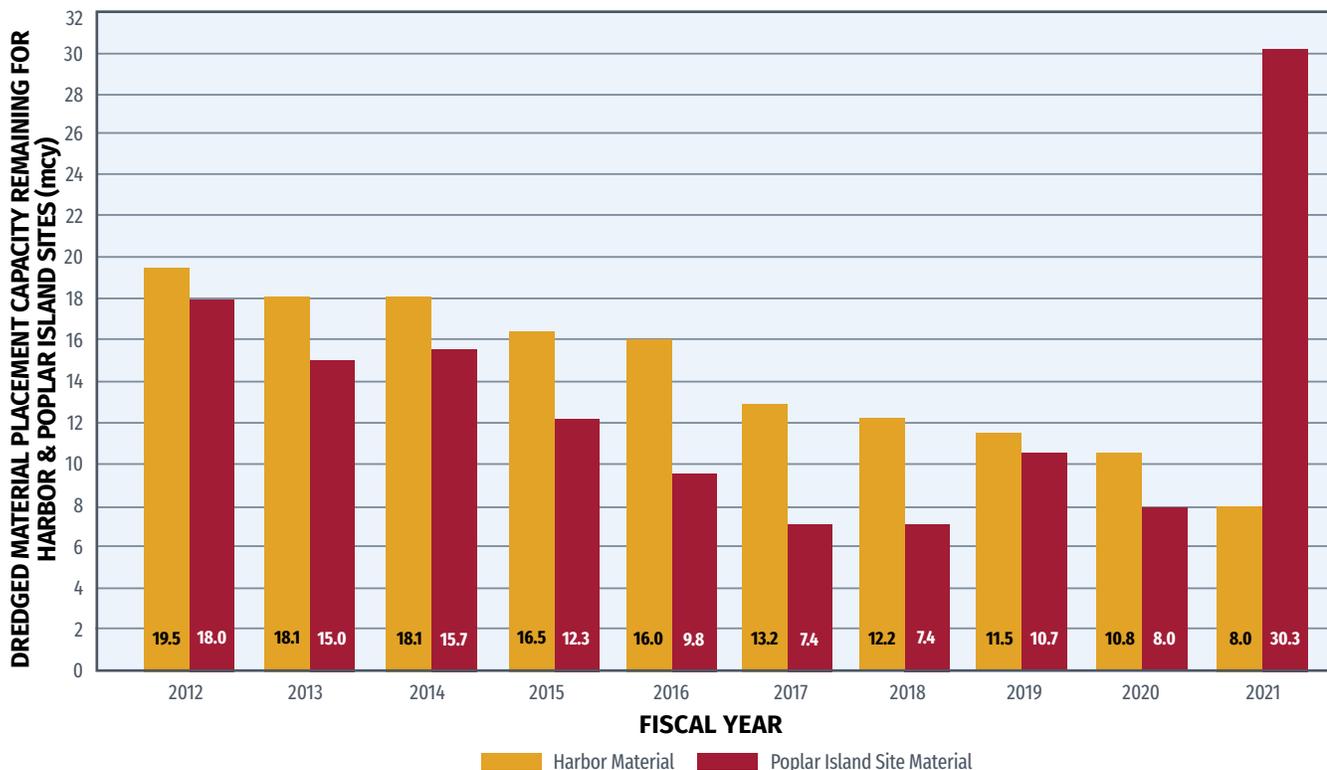
- MDOT SHA and MDTA have developed criticality framework to evaluate bridges on a risk-based approach combining criticality (consequence of failure) and condition (good, fair, poor); this framework will be reviewed and refined to be included in future asset management programming
- MDOT SHA is exploring the use of the National Bridge Element (NBE) data collected during inspections in combination with the NBI data to verify and target bridges to be evaluated for inclusion in the replacement or rehabilitation programs; the NBE data provides more detailed element level information



DREDGED MATERIAL PLACEMENT CAPACITY REMAINING FOR HARBOR SITES AND POPLAR ISLAND



MDOT MPA is responsible for ensuring the Port remains safe and accessible and maintains shipping channels by obtaining and managing dredged material placement sites.



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

WHY DID PERFORMANCE CHANGE?

- In January 2021, MDOT MPA and the U.S. Army Corps of Engineers completed the Poplar Island Ecosystem Restoration Project lateral expansion; this will provide 575 additional acres of dredged material placement, adding storage capacity of 28 million cubic yards (mcy) of material

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Poplar Island will continue to receive dredged materials through 2032
- MDOT MPA and the U.S. Army Corps of Engineers are now designing the Mid-Chesapeake Bay Island Ecosystem Restoration project; focused on James and Barren islands, they will replace Poplar Island as the state's primary receiving site for Bay channel dredged sediment
- Future planned work includes maintaining maximum depth for the approach channel at the mouth of the Chesapeake Bay where ultra-sized, neo-Panamax vessels enter on their way to the Port of Baltimore



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	2021 PERCENT OF VEHICLE STOCK WITHIN USEFUL LIFE	TARGETS
Baltimore Metro	0%*	0%
MARC	100%	100%
Light Rail	100%	100%
Paratransit	83%	99%
Local Bus	100%	98%

*78 new rail cars will be delivered beginning in 2022.

WHY DID PERFORMANCE CHANGE?

- MDOT MTA opened the \$148 million Kirk Avenue Bus Division project; the new facility will increase efficiency for maintenance operations and reduce impacts for neighbors; at the facility 175 buses are fueled, washed, and stored; there are some dispatching functions at the new facility
- MDOT MTA regularly purchases new fleet to continue modernizing agency operations and improve the customer experience

OBJECTIVE:

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

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA is transitioning to a zero-emission bus fleet; in 2021, MDOT MTA released an Request for Information (RFI) related to installing, operating, and maintaining electric bus charging infrastructure and microgrids
- MDOT MTA broke ground on the MARC Riverside Heavy Maintenance Facility in Baltimore; the new 35,000 square-foot facility will allow MARC Train to conduct maintenance activities, improve fleet reliability, and reduce maintenance costs and time spent on maintenance
- MDOT MTA will procure new vehicles and assets to meet asset management targets, these planned purchases include \$400 million on replacing the Metro SubwayLink railcars and signal system, \$160 million to overhaul major systems on light rail trains to ensure reliable service, and \$54 million to overhaul 63 MARC III passenger coaches



AVERAGE TRUCK TURN TIME AT SEAGIRT MARINE TERMINAL



Keeping the Port of Baltimore economically viable includes constant dredging; improvements to the infrastructure that connects the Port to businesses and logistics hubs across the country; and improvements within the Port to ensure seamless movement of goods to and from ships.

Measuring truck turnaround times at Seagirt Marine Terminal is important for Port officials to have so they can measure the internal efficiency of the Port. The less time it takes a truck to turn around, the less money it costs to move those goods. In 2021, the average truck turnaround time was 72 minutes, down significantly from 89 minutes in 2018, but only slightly quicker than the average of 73 minutes in 2020.

WHY DID PERFORMANCE CHANGE?

- In 2021, the Port implemented parts of the Seagirt Berth 3 Modernization project; including, four new neo-Panamax container cranes, additional yard equipment and dredging to widen the entrance channel and turning basin, upgrades to the terminal infrastructure, hardware, and cargo handling equipment are also planned to service the larger vessels
- Installation of radiation monitors as the next phase of development for Seagirt's back gate, which will allow inbound and outbound access for trucks with loaded containers
- Additional inbound lanes to address volume increases
- Reconfiguration of outbound lanes to add capacity, increase safety, and add speed
- Berth 3 construction is well on its way, with new ship-to-shore cranes arriving in September 2021; the project will be completed in the first quarter of CY 2022
- New, more efficient rubber-tired gantry (RTG) cranes to augment and replace older units

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

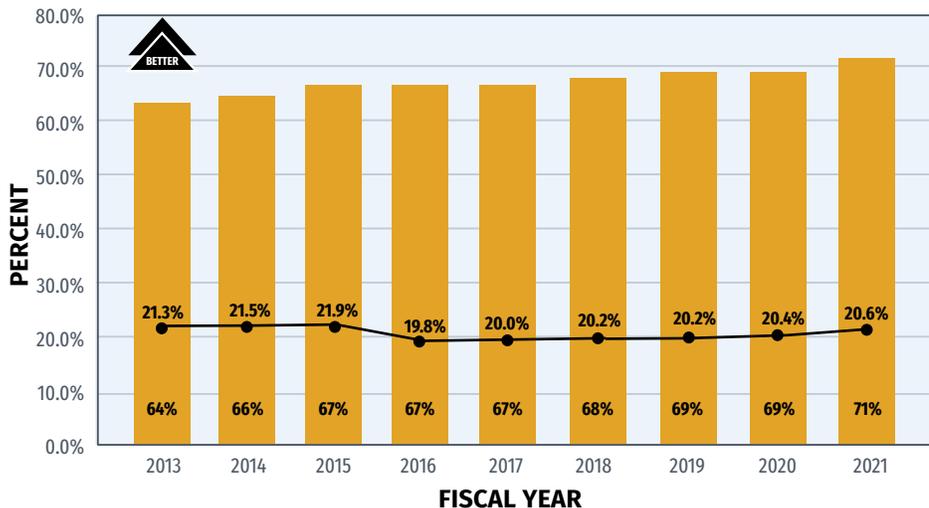
- Weigh in motion scales and additional optical character recognition portals are currently under construction to increase the speed of truck processing
- MDOT MPA and PAC will continue to apply for additional federal funding from the U.S. Department of Transportation (U.S. DOT) including the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant and Port Infrastructure Development Program (PIDP) grant for improvements at Berths 1 & 2 to allow the servicing of three ULCVs simultaneously at Seagirt





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.



■ Percentage of sidewalks that meet ADA compliance
—●— Percentage of state-owned roadway directional miles within urban areas that have sidewalks

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

WHY DID PERFORMANCE CHANGE?

- MDOT invested \$2.7 million in FY 2021 to design and construct new sidewalks, including the construction of new directional miles of sidewalk along MD 424 in Anne Arundel County
- MDOT invested \$2.5 million in FY 2020 to design and construct sidewalk improvements to address ADA accessibility, including the reconstruction of sidewalk along MD 26 in Baltimore County and MD 22 in Harford County

OBJECTIVE:

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

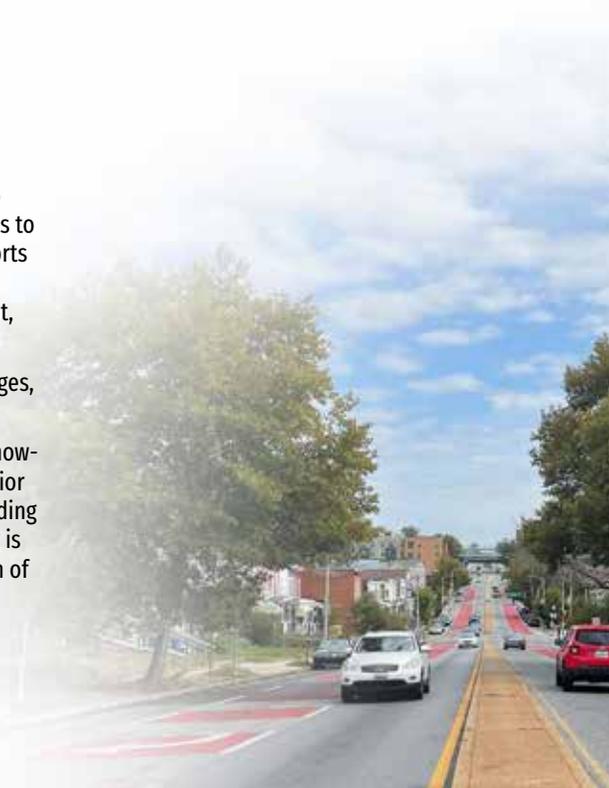
The majority of transportation funding is used for maintenance. As a result, MDOT places significant emphasis on asset management plans and life cycle management plans that formalize data collection on all assets and project the useful life of assets. The plans also inform decision making on when to do maintenance on assets and when to improve assets to ensure they meet the latest safety regulations and best practices. Asset management efforts span multiple departments with dozens of MDOT staffers working together to best utilize limited funding to ensure the transportation system is maintained to remain safe, efficient, and reliable.

MDOT asset management efforts include commonly known assets like pavement and bridges, but also lesser known assets like culverts, buses, signs, lighting, and signals.

To protect and extend the useable lifespan of Martin State Airport's specialized airfield snow-removal equipment, MDOT MAA constructed a 12,000 square-foot (SF) storage building. Prior to this, equipment was stored outside, uncovered, and exposed to the elements. The building provides pull-through access to optimize the site and operational efficiency. This building is considered the first phase of an equipment storage facility with future building expansion of 5,600 SF and a separate 9,900 SF critical equipment storage building planned into the site design.

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- To improve program performance in FY 2022, MDOT SHA is partnering with local jurisdictions to fund additional projects leveraging local government funds as a match to secure additional federal funding for design and construction of new sidewalk projects
- Build new partnerships with locals to strategically identify gaps in the sidewalk network and collaborate to fund and implement the projects
- Work with recipients of highway safety grants to share data and best practices to ensure an optimized outcome for their safety initiatives
- Implement the 2021-2025 Strategic Highway Safety Plan (SHSP), specifically the infrastructure emphasis area that includes this strategy: improve roadway environments related to pedestrians and bicyclists by influencing the implementation of system-wide countermeasures, engineering treatments, and land-use planning



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

With millions of residents and visitors traveling every day on Maryland's transportation system, MDOT must meet the needs of all of its customers to ensure a quality experience. MDOT MVA has the specific responsibility of assisting certain Maryland travelers before they even get on the road. MDOT MVA is continuing to provide premium customer service by offering alternative services so that customers do not need to be present in-person, such as online transactions and self-serve kiosks. During the initial months of the pandemic from March to August 2020, MDOT MVA saw a 45% increase in online transactions compared to the same time period of the previous year. These services will be enhanced with the rollout of Customer Connect Phase Two, an Information Technology (IT) modernization project that includes driver services, driver enforcement, investigations, and financial services. MDOT MVA is also still moving forward with REAL ID, ensuring every Marylander is prepared for the new deadline of May 3, 2023. Currently, 84% of Marylanders are REAL ID compliant, one of the highest percentages in the nation.

MDTA has created a more seamless transportation experience making the transition to 100% cashless tolling permanent. The MDTA also launched *DriveEzMD*, which includes a new website, web chat, customer call center with expanded hours, text notifications, and more. MDTA is improving physical transportation facilities with several new projects. The \$1.1 billion I-95 Express Toll LanesSM (ETL) Northbound Extension program will relieve congestion and improve travel along the I-95 corridor into Harford County. Construction on the I-95 at Belvidere Road Interchange Design-Build (DB) project is expected to begin in summer 2022.

The Coordinated Highways Action Response Team (CHART), a joint program of MDOT SHA, Maryland State Police (MSP), and MDTA, assists motorists 24 hours a day, seven days a week, in the Baltimore, Washington, D.C., and Frederick metropolitan areas. CHART has saved drivers \$1.08 billion in delay costs and reduced travel delay by 23.52 million vehicle-hours.

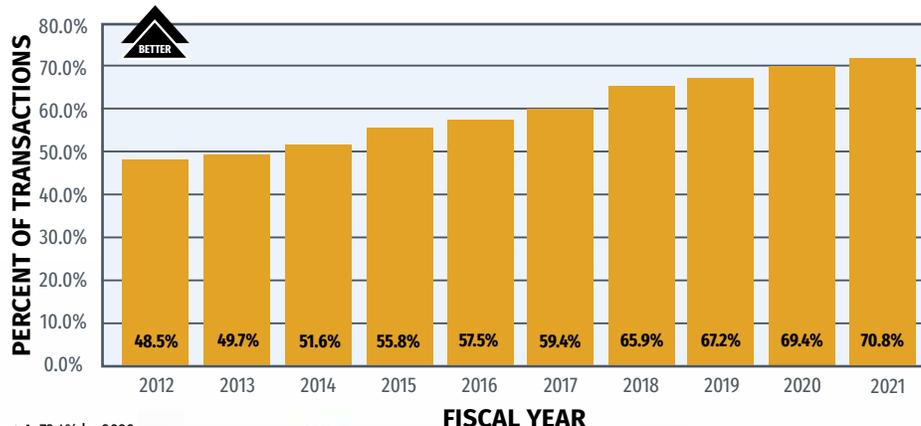
OBJECTIVE:

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. To be successful, alternative services must be adopted in conjunction with the development of new IT systems and customer behavior changes.



Target: 72.4% by 2020



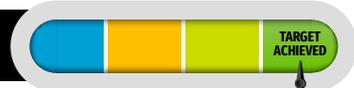
WHY DID PERFORMANCE CHANGE?

- MDOT MVA ASD has consistently increased during the past several fiscal years, remaining above 65% since FY 2018; this year, ASD increased above 70% for the first time, rising to 70.8%
- COVID-19 has increased demand for online ASD as interest in avoiding in-person interactions has increased
- New kiosks provide customers with the ability to receive real-time registration stickers, the option to pay in-cash or with a credit card, the capability to receive certified and non-certified driving records, as well as the option to order scenic and personalized license plates

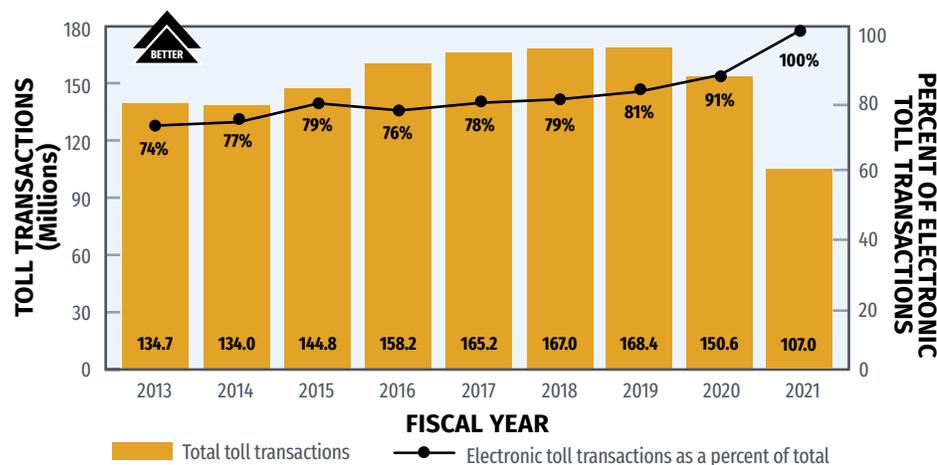
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- This winter, Phase Two of MDOT MVA's IT modernization project, Customer Connect, will deploy driver services, driver enforcement, investigations, and financial services

PERCENT OF TOLL TRANSACTIONS COLLECTED ELECTRONICALLY*



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



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

* Toll collections are paid as cash until March 2020 or ETC. ETC includes transponder, I-tolls, and video tolls.

WHY DID PERFORMANCE CHANGE?

- Tolls were collected 99.99% electronically this year because all-electronic tolling has been instituted at all toll facilities across the state
- Total toll transactions plummeted, however, due to travel restrictions and work-from-home policies in response to COVID-19
- In April 2021, the MDTA launched *DriveEzMD*, which included a new website, web chat, expanded customer call center, new toll payment choices, text notifications and more; as Maryland's new home for all things tolling, *DriveEzMD* encompasses *E-ZPass*®, a brand-new Pay-By-Plate option, and video tolling

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Additional toll features, including a new vehicle toll classification with a lower toll rate, will roll out in phases in the coming years
- Work continues on the \$1.1 billion I-95 ETL Northbound Extension program to relieve congestion and improve travel along the I-95 corridor into Harford County



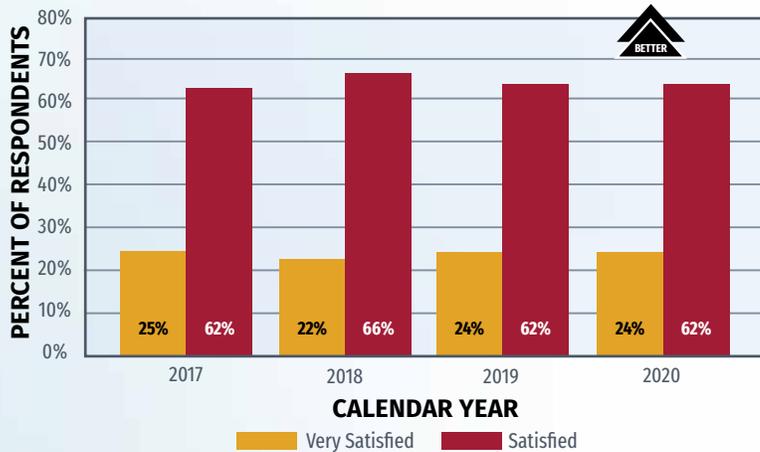
OBJECTIVE:

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 Transportation Business Units (TBUs) can identify their major successes and weaknesses and develop new investment prioritizations to maintain and grow their customer bases.



* The survey data reported is through 2020; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2021 survey data will be published in the 2023 Attainment Report.



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; specifically, Parkville and Columbia branch offices expanded services to meet the demands of customers requesting REAL ID services
- MDOT MTA is advancing construction on 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
- Since February 2021, MDOT MVA has allowed customers to look at all notices, letters, and receipts related to their vehicles with the My MDOT MVA Correspondence feature on their website; this feature allows customers to access all documents that have been sent in connection with their vehicle since July 2020
- BWI Marshall Airport was named as the top North American airport in its size category in the 2020 Airport Service Quality (ASQ) Awards; the annual awards are presented by Airports Council International World (ACI World), a leading airport industry organization; the ASQ program recognizes global airports for delivery of the best customer service as measured by airport passengers

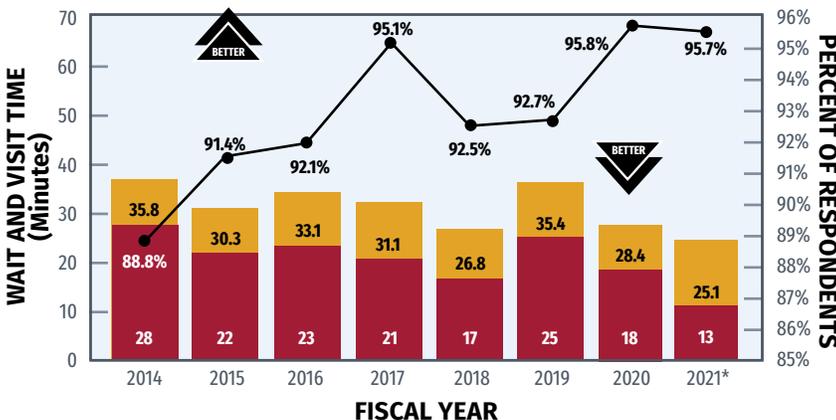
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA is focusing on three areas in future years:
 - asset management, which utilizes a system-preservation philosophy and also seeks to gain the best return on investment for future generations,
 - accessibility, to ensure all kinds of travelers have access to life's opportunities, and
 - mobility, which is about taking advantage of technology and data-driven systems to improve the efficiency of our existing footprint
- After making tolling all-electronic (cashless) in 2020, MDTA will work on implementing highway-speed tolling at important tolling locations in the state including the Fort McHenry Tunnel, JFK Memorial Highway, Nice-Middleton Bridge, and the Baltimore Harbor Tunnel
- MDOT MTA published the agency's strategic plan for the next five years: Rebuilding Better – Committed to an Equitable Transit Future, which focuses on technology, communication, service delivery, and sustainability; the plan also focuses on equity as a core principle; the plan establishes a post-pandemic vision for the road ahead and makes bold commitments to MDOT MTA riders, employees, and the public
- The final rollout of MDOT MVA's IT modernization project, Customer Connect, is scheduled for the end of this year, and will include driver services, driver enforcement, investigations, and financial services, allowing for a complete view of the customer and real-time updates, which decreases delays for our customers

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



The 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).



■ Average Branch Office Customer Wait Time In Minutes
■ Average Branch Office Customer Visit Time In Minutes (includes Wait Time)
● Percent of Branch Office Customers Rating Service as "Good" or "Very Good"

Target: 95% Satisfaction Rating as "Good" or "Very Good" by 2021, Visit Target: 25.3 Min., Wait Time Target: 14.8 Min.
 * 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- Since MDOT MVA branches operated with only appointment-only services for much of this year, customer wait and visit time decreased compared to the previous year
- MDOT MVA's new appointment scheduler launched at the start of 2021; this new system allows customers to access a more detailed list of available services to help customers schedule the exact type of appointment they need, which in turn helps MDOT MVA staff prepare for the customer prior to arrival

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MVA will install permanent coverings for branch entrances to cover customers waiting in line
- MDOT MVA is also making some policy changes to increase convenience for customers including allowing renewing a license up to 12 months in advance, requiring a new photo every 16 years instead of eight, and extending the vision certification from one year to two
- Improvements to the Glen Burnie Headquarters site are in development that will consolidate driver licensing functions and improve vehicular and pedestrian site circulation to ultimately improve customer service

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*	2012	2013	2014	2015	2016	2017	2018	2019	2020**	2021	LONG-TERM TARGET
Local Bus	83%	82%	81%	81%	85%	77%	68%	69%	74%	75%	85%
Light Rail	96%	97%	96%	97%	98%	96%	94%	95%	96%	96%	95%
Baltimore Metro	96%	97%	96%	95%	96%	96%	94%	94%	71%	92%	95%
MARC	93%	93%	92%	92%	94%	91%	91%	87%	92%	91%	93%
Mobility Paratransit & Taxi Access	90%	89%	91%	88%	92%	93%	93%	86%	89%	90%	95%

* Besides Local Bus, 2021 data is estimated and subject to change.
 ** 2020 data has been revised from previous report.

WHY DID PERFORMANCE CHANGE?

- MDOT MTA launched the Transit Priority Initiative (TPI) in 2018, building on traffic improvements such as dedicated bus lanes and transit signal priority piloted for Core Bus service, and identifying additional roadways and bus routes to prioritize for similar improvements; a TPI toolkit was published identifying additional tools to improve transit service and reliability
- New dedicated bus lanes were paved and marked in February 2021 to provide faster and more reliable transit service. Enforcement of the bus lanes began in November 2021 as traffic returned to the corridor in response to a recovery from the COVID-19 pandemic

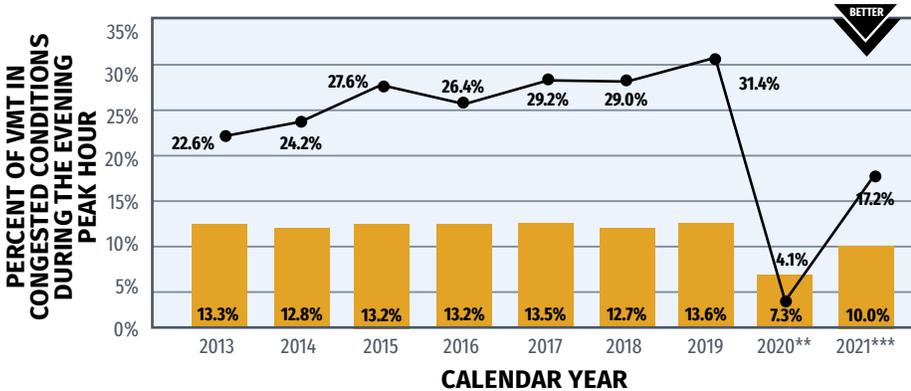
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA is launching Fast Forward, a new program of projects to enhance customer experience from door to door; capital improvements include dedicated bus lanes, Americans With Disabilities Act (ADA) improvements, shelters, real-time info signs, and wayfinding to help riders arrive at their final destination and find the nearest transit stop
- In partnership with Baltimore City, MDOT MTA applied for a 2021 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant for the East-West Priority Corridor; this project will add 10 miles of dedicated bus lanes, transit signal priority, bus stop amenities, and access improvements for people walking and biking

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



This measure tracks MDOT SHA and MDTA performance in reducing congestion on the state highway system. This is an indicator of congestion and the people/vehicles impacted by congestion.



■ Percent of VMT in congested conditions on arterials in Maryland during the evening peak hours
 ● Percent of VMT in congested conditions on freeways/expressways in Maryland during the evening peak hour

Target: Freeway Target: 30.8% by 2020, Arterial Target: 13.4% by 2020

* 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.

** 2020 data has been revised from previous report.

*** 2021 data is preliminary and subject to change.

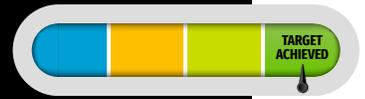
WHY DID PERFORMANCE CHANGE?

- The percentage of VMT in congested conditions increased both on freeways/expressways and arterials in Maryland this year compared to last year, but remain much lower than years prior
- Traffic volumes remain much lower in the pandemic than earlier years as many employees who work during peak hours continue to work from home

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

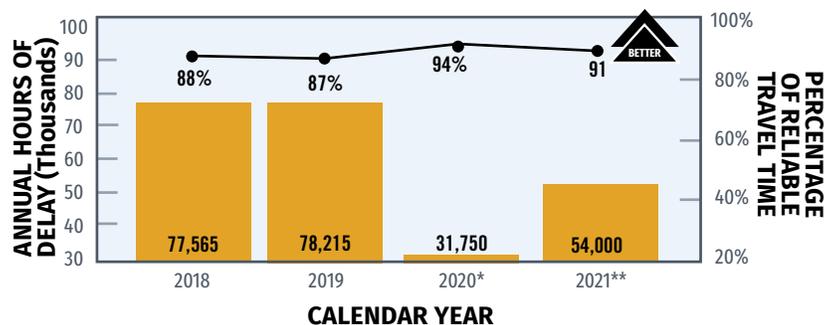
- MDOT will continue the expansion of the incenTrip application statewide as a congestion mitigation effort; incenTrip encourages Maryland travelers and employers to increase the use of public transportation, ridesharing (carpooling and vanpooling), walking, biking, teleworking, and alternative work schedule

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 users 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 tracks MDOT SHA and MDTA performance in reducing congestion on the state highway network. MDOT SHA and MDTA continue to prioritize congestion reduction and mobility growth, while many projects, programs, and policies prioritize delay reduction. 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 when system changes need to be made.



■ Annual Hours of Delay (thousands) ● Travel Time Reliability

Target: 81,450 hours of delay in 2021; 87% travel time reliability in 2021

* 2020 data has been revised from previous report.

** 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- Traffic volumes have decreased by approximately 10% for the first half of CY 2021 from CY 2019 levels due to the effects of the pandemic; this has resulted in lesser congestion and delay
- MDOT's CHART handled 126,272 events, including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events
- Due to the uncertainty related to the pandemic and recovery, the estimation of the levels of traffic volumes has been difficult to determine, thereby affecting the CY 2020 actual data and requiring revisions to the future target data

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT is incorporating Intelligent Transportation System (ITS) technology by corridor deployments such as the US 1 Innovative Technology Corridor Pilot Project

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 ACCURACY OF INFORMATION (MDOT SHA)

REAL-TIME SURVEY RESULTS



* The survey data reported is 2020 survey data; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2021 survey data will be published in the 2023 Attainment Report.

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, MDOT MTA launched real-time on time performance (OTP) for Commuter Bus, which provides riders with information on performance improvements at the transit agency; the webpage offers searchable performance data for all CityLink, LocalLink, and Express BusLink routes including on time, early, and late arrival percentages
- MDOT MTA launched a partnership with Transit app in June 2018, which provides real-time transit information, trip planning, and step-by-step navigation; MDOT MTA most recently launched real-time tracking for MARC Train service in August 2020
- 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
- MDOT MAA completed installation of a new Airport Noise and Operations Management System, which includes 24 new noise monitors throughout local communities 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 Messaging Signs (DMS) by CHART increased to 97% in FY 2019

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA is launching Fast Forward, a new program of projects to enhance customer experience from door to door; capital improvements include dedicated bus lanes, Americans With Disabilities Act (ADA) improvements, shelters, real-time info signs, and wayfinding to help riders arrive at their final destination and find the nearest transit stop
- MDOT MTA is continuing to implement a Federal Transit Administration (FTA) grant funded Beyond the Bus Stop program, which is adding real-time information signage and shelter improvements to bus stops, including some multi-modal transfers; the real-time information signage will extend that availability to the users of the Core Bus system who do not have access to mobile technology
- CHART is installing advanced traffic management system (ATMS) and advanced traffic information system (ATIS) technologies on interstate highways and arterials statewide, including cameras, traffic detectors, weather sensors, DMS, highway advisory radios (HAR), websites, and telecommunication networks



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 continues to streamline its business processes, minimizing any adverse impacts on the environment, while conserving natural resources, and integrating sustainability into various aspects of transportation systems at the policy, program, and project levels of implementation. MDOT has a well-rounded approach to environmental stewardship spanning a range of natural resources including air, land, and water. MDOT actions encompass climate change mitigation by reducing GHG emissions, increasing climate adaptation and resiliency, and conservation of resources for a sustainable agency operations and service delivery. MDOT's Transportation Business Units (TBUs) continue to reduce effects of transportation and the built-environment by way of effective planning, creative, and interdisciplinary approaches to project delivery and collaboration.

MDOT's commitment to environmental initiatives has been demonstrated in the form of policies, programs, initiatives, and project level actions. Examples include MDOT MPA's renewal and expansion of a voluntary memorandum of understanding (MOU), which calls for a continued committed effort to reduce diesel and GHG emissions and increase energy efficiency at the Port of Baltimore. This renewed commitment extends the original MOU signed five years ago adding the Maryland Energy Administration (MEA) as a new partner. Elements of the commitment include reduction of diesel emissions, creative reuse of dredged material, and projects like the Howard Street Tunnel expansion, which will increase rail capacity and reduce truck fuel consumption.

Another unique and innovative example of an MDOT environmental initiative is the completion of the state's first Public-Private Partnership (P3) to deliver "smart ponds" that use advanced stormwater control technology to reduce pollutants and curb local flooding at three sites across Maryland. The "smart pond" technology, which regulates the flow of water from stormwater management sites, was installed at Walmart stores in Fruitland, Aberdeen, and Hagerstown. The P3 that led to the project is the first of its kind involving a state transportation department in the U.S. and could be replicated elsewhere in the Mid-Atlantic and across the country.

MDOT continues to contribute towards interagency efforts to revise the Adaptation and Resilience Strategic Framework, ensuring that Maryland transportation goals, strategies, and activities were reflected in sections on critical infrastructure, water, public health, environmental justice, local governments activities, working lands, and ecosystems. MDOT SHA participated in the Governor-proclaimed Maryland Flood Awareness Month April 2021, partnering with various state agencies to raise awareness about the many flood hazards faced by individuals and communities across the state.

MDOT has continued to develop and share vulnerability assessment data and resiliency plans to address the impacts of climate change and how that will affect the transportation network. MDOT SHA advanced strategic climate and extreme weather risk and resiliency concepts by drafting the MDOT SHA Climate Resilience Strategy document on behalf of seven MDOT SHA offices, Planning, Design, and Maintenance and Operations. MDOT MAA is in the process of upgrading multiple electric substations to provide both additional capacity and circuit redundancy to the critical airfield navigation and lighting systems to ensure operational resiliency of BWI Marshall Airport for the public air travel and air cargo needs of the state. MDOT MVA is developing a risk profile to help identify, track, and prioritize risks that could affect its critical assets and impact its ability to provide services to its customers. This risk profile will integrate climate adaptation and resilience into MDOT MVA's assessment plan and business processes. MDOT MPA received a grant of \$10 million in federal funds to help protect the Dundalk Marine Terminal against severe weather, sea-level rise, and other potential climate change impacts. The funds from the U.S. Department of Transportation's (U.S. DOT) Better Utilizing Investments to Leverage Development (BUILD) transportation grant program, will help advance MDOT MPA's \$36.7 million Resiliency and Flood Mitigation Improvement project at the Marine Terminal.

MDOT leads by example in its solar program with the potential to install photovoltaic (PV) systems on more than 874 facilities it owns or controls. MDOT currently has five PV systems installed on its properties at MDTA, MDOT MAA, MDOT MTA, and MDOT MPA, with a total installed capacity of 1.8 megawatts. MDOT makes a continued commitment to environmental compliance, enhances improvement of its environmental performance through established and innovative processes, and adherence to sustainable practices. It continues to work with partners, stakeholders, and the public to maintain outreach and communication about its environmental activities.

MDOT ENVIRONMENTAL INITIATIVES

MDOT MAA: Working collaboratively with the Maryland Department of Natural Resources (MDNR), MDOT MAA is in the process of finalizing a Forest Conservation Easement (FCE) of more than 122 acres that encompass 84 acres of wetlands of special state concern (WSSC). Once finalized, the FCE benefits rare, threatened, and endangered (RTE) species located within the easement and MDOT MAA by serving as a forest mitigation “bank” to support ongoing airport development. In May 2021, MDOT MAA and Baltimore Gas and Electric (BGE) installed new electric vehicle charging stations at BWI Marshall Airport. The four new DC Fast Charging (DCFC) stations, located in the airport’s cell phone lot, will allow motorists to charge their electric vehicles while waiting for airline passengers to arrive at the airport. The four new state-of-the-art, 150kW DCFC charging stations provide up to an 80% charge in as little as 15 minutes. The fast chargers are the first of this speed and capacity that BGE is installing in Maryland. The utility company has placed six additional DCFC stations in the airport’s rideshare lot, which serves as a staging area for rideshare drivers. BWI Marshall Airport also has 10 existing electric vehicle charging stations in the Daily Garage and Hourly Garage that were first installed in 2011.

MDOT TSO: All six Master Service Agreements (MSAs) with the Qualified Master Contractors have been successfully amended to increase the term from five years to 30 years. Howard County, MD successfully used the MDOT Solar Master Contract to issue a Task Order for solar development within the county. A contract was awarded to CI Renewables (formerly KDC Solar) with solar energy generation estimates at 44 million kilowatt hours (kWh) per year, making this the largest Power Purchase Agreement for solar energy in Maryland. MDOT continued efforts towards E.O. 01.01.2019.08 Energy Savings Goals for State Government, through MDOT building energy use reduction. GHG emissions generated at MDOT facilities decreased by approximately 19% from CY 2018 to CY 2020. In July 2021, the U.S. Army Corps of Engineers received Congressional approval to reprogram federal funds (\$1.5 million) towards completion of the Baltimore Coastal Storm Risk Management Study. Work on this study has resumed.

MDOT MTA: In the strategic plan, MDOT MTA outlines four commitments to planning for a sustainable future. The first commitment is to develop and implement fare payment options that allow all residents to pay their fare regardless of their banking status or technology access. The second commitment is to seek funding and partnering opportunities to enhance and expand the transit system. The third commitment is to continue conserving resources to promote environmental stewardship. These efforts are focused on water reclamation and transitioning to electric vehicles (EVs). The fourth commitment is to transform the bus fleet to zero-emission vehicles (ZEVs). This effort is in support of the state’s goal of reducing GHG emissions by 40% by 2030.

MDTA: The Office of Environment, Safety and Risk Management (OESRM) is performing audits of trash and recycling services at all MDTA facilities. These audits will allow MDTA to identify modifications to service schedules that can be made to more accurately reflect each locations’ needs. Simultaneously, OESRM is evaluating alternative methods for waste reduction to further the agency’s sustainability efforts. Examples include determining the possibility of recovering used oil for internal heating uses and food waste recovery options. During the last year, MDTA has evaluated the potential to reduce salt usage during winter operations, expanding education (statewide) to reduce the number of drive-offs and releases at MDTA fueling sites, and implementing a meaningful oil-water separator (OWS) management program. The Asset Control & Damage Recovery (ACDR) group is developing a tracking tool to adequately document and capture environmental costs related to third-party accidents that occur on MDTA

roadways, tunnels, and bridges. The implementation of this tool allows MDTA to recover costs associated with waste characterization and waste disposal costs through its insurance claim recovery process.

MDOT MPA: MDOT MPA and the U.S. Army Corps of Engineers completed the Poplar Island Ecosystem Restoration Project lateral expansion, which will provide 575 additional acres for dredged material placement, adding 28 million cubic yards (mcy) of storage capacity. The project is now able to accept dredged material, serving as a critical role in maintaining the 50-foot-deep channels leading to the Port of Baltimore.

MDOT MPA received a grant from the MEA’s Resilient Maryland Program to develop a feasibility study that investigated microgrid options, looking at wind, solar, batteries, and fuel cells at the Dundalk Marine Terminal. MDOT MPA received a grant of \$10 million in federal funds to help protect the Dundalk Marine Terminal against severe weather, sealevel rise, and other potential climate change impacts. The funds from the U.S. DOT’s BUILD transportation grant program, will help advance MDOT MPA’s \$36.7 million Resiliency and Flood Mitigation Improvements project at the Dundalk Marine Terminal. MDOT MPA installed new LED lighting inside four sheds at the Dundalk Marine Terminal in preparation for use by the Port’s tenants. The LED upgrades reduce electricity usage, increase worker safety, and help to lower GHG emissions.

MDOT MVA: In 2021, MDOT MVA revamped its website to provide customers more detailed information about services available online and services available in the branch offices. Providing this information allowed customers to complete more transactions online, which increased the number of customers served and limited the amount of people visiting MDOT MVA offices during the pandemic. COVID-19 forced a two-week shutdown of MDOT MVA offices in late 2020 and early 2021. During this shutdown, MDOT MVA kept self-serve kiosks and 24-hour kiosks open so customers could complete their vehicle emissions testing.

MDOT SHA: MDOT SHA is working in partnership with MDOT to identify numerous sites within MDOT SHA right-of-way (i.e. MDOT SHA Park-and-Rides, truck parking, weigh stations, and facilities) that are suitable for solar installation. The installation of solar infrastructure on or near MDOT SHA properties will reduce electrical pressure on the grid, reduce GHG emissions and provide a set utility cost for a more than 20-year contract providing a cost saving to the agency. MDOT SHA established an EV Working Group in March 2021 to identify and review opportunities to incorporate EV charging infrastructure at MDOT SHA Park-and-Ride locations to further offer alternative energy solutions available to the public.



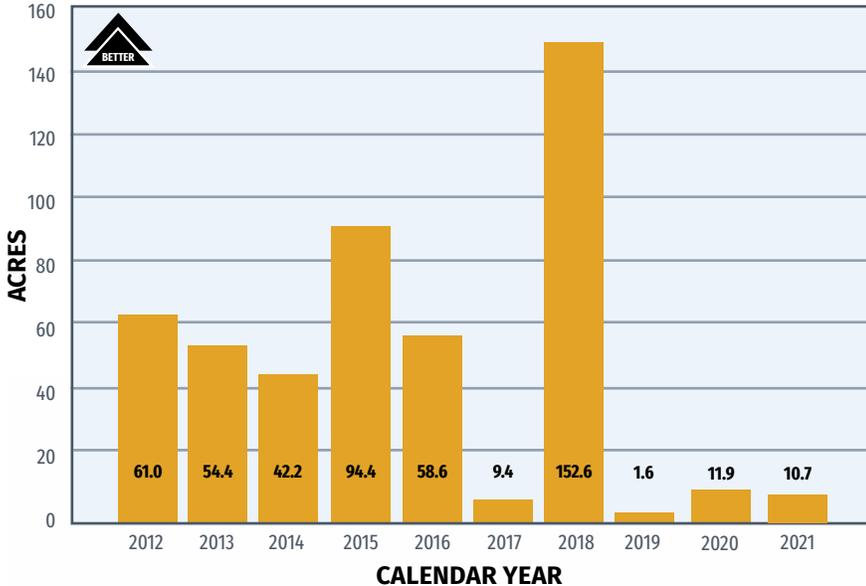
OBJECTIVE:

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.



* Acres created, restored, or improved depend on the amount of mitigation obligated by project permits in a given year, as well as the construction completion date for the mitigation projects. Data is a sum of acres of wetlands or wildlife habitat created, restored, or improved by MDTA, MDOT MPA, or MDOT SHA.

WHY DID PERFORMANCE CHANGE?

- MDOT MPA was awarded an American Association of Port Authorities Award of Excellence for Environmental Mitigation for a demonstration project that removes excess nutrient pollution and increases oxygen content in the Baltimore Harbor
- MDOT MPA installed a stormwater management system at Fairfield Marine Terminal that employs a large underground sand filter that absorbs and treats runoff from the terminal's 14 acres

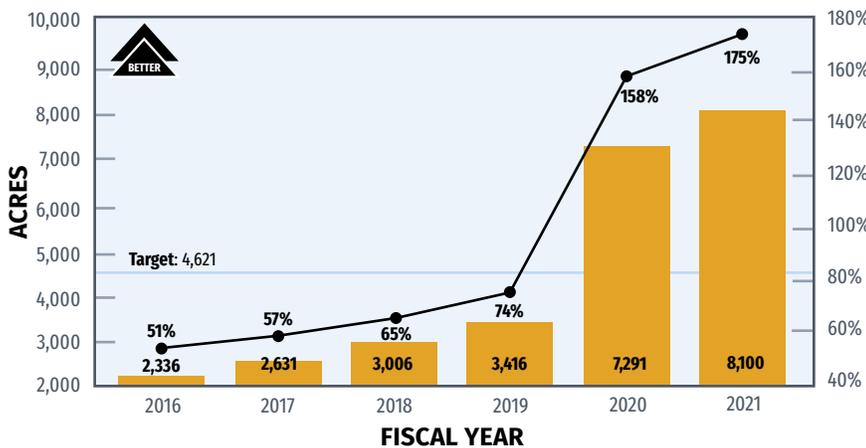
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Continue operations of the Diesel Equipment Upgrade Program, through which the Port of Baltimore replaces older diesel-powered equipment with newer, more-efficient versions; since 2008, the program has resulted in emissions reductions of 3,304 tons of nitrogen oxide, 922 tons of carbon monoxide, 165 tons of particulate matter, and 141 tons of hydrocarbons
- Continue to partner the dredging needs with environmental restoration of uplands and wetlands, similar to recent efforts on Poplar Island

WATER QUALITY TREATMENT TO PROTECT AND RESTORE THE CHESAPEAKE BAY***



This measure tracks MDOT compliance with achieving impervious surface restoration as required by the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit.



Acres of Impervious Surface Restoration — Percentage of Restoration Goal Achieved

Target: 4,621 Acres by October 2021

* Data is reported cumulatively.

** Restoration BMPs have changed, resulting in additional credits for previous years, causing past data to change to reflect the updated BMPs.

WHY DID PERFORMANCE CHANGE?

- MDOT SHA continued implementation of stormwater management and water quality improvement projects and exceeded its FY 2020 goal (20%) by treating 175% of its impervious surfaces not previously treated by stormwater management controls
- Approximately 8,100 impervious acres were treated by MDOT SHA through October 8, 2020, to reduce pollution entering local waterways and ultimately the Chesapeake Bay

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA's current NPDES MS4 permit expired on October 9, 2020, but coverage has been administratively continued until the Maryland Department of the Environment (MDE) issues the next generation NPDES MS4 permit

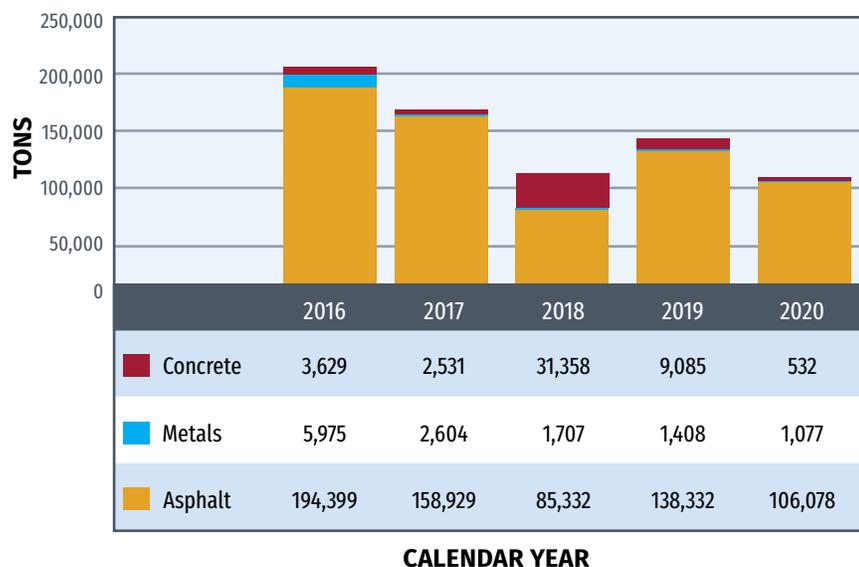
OBJECTIVE:

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*



For years, MDOT has been working to minimize waste, reuse materials, and reduce GHG emissions through energy efficiencies and alternative energy sources. These combined efforts will save money and make Maryland communities more livable for decades to come. These efforts combined with policy initiatives from other state departments will maximize investments in the environment and economy.



WHY DID PERFORMANCE CHANGE?

- Reclaimed asphalt pavement (RAP) numbers were down in 2020; MDOT expects the figures to follow the same trend until CY 2022 because of our decreased budgets and reduced tonnages overall
- Recycled concrete graded aggregate base (RC-GAB) fluctuated significantly due to changes in planned construction projects
- COVID-19 brought changes to the budget, project priorities, and safety protocols that impacted overall maintenance activities

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Share specifications and allow contractors to use RC-GAB without any additional approvals
- RC-GAB is difficult to predict because it relies on new projects; it is not used in common resurfacing projects



*Recently, more data sources have become available that have increased the historic recycled metals figures.

UTILITY ELECTRICITY USE AND RENEWABLE ENERGY GENERATION



MDOT is committed to reducing electricity consumption through efficiency measures and renewable energy sources to help Maryland reach its clean energy and GHG reduction goals. Reducing energy consumption and generating renewable energy can save Maryland taxpayers money, generate revenue, and decrease harmful air emissions. MDOT measures both the consumption of utility energy and the amount of renewable energy generated by MDOT.

MEGAWATT HOURS IN THOUSANDS (FY)	2016	2017	2018	2019*	2020
Electricity Use	384	364	379	367	338
Renewable Energy Generation	1.998	1.629	1.431	1.275	1.127

* 2019 has been revised from previous report.

WHY DID PERFORMANCE CHANGE?

- Usage of utility generated electricity continues to decline through the deployment of energy efficiency strategies that include alternative energy sources such as solar and policies that encourage energy conservation
- The reduction in electricity use translated into a direct savings of approximately \$3.4 million from FY 2019 to FY 2020, and \$1.8 million from FY 2020 to FY 2021
- MDOT extended MSAs from five years to 30 years for six qualified contractors to design, construct, commission, finance, operate, and maintain PV energy facilities at MDOT locations

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- A Task Order Request for Proposal (RFP) is currently under development for solar installation at multiple MDOT MTA Park-and-Ride facilities across the state
- MDOT SHA and MDOT MAA are also working on a siting analysis for solar development through the MDOT-issued Master Solar Contract



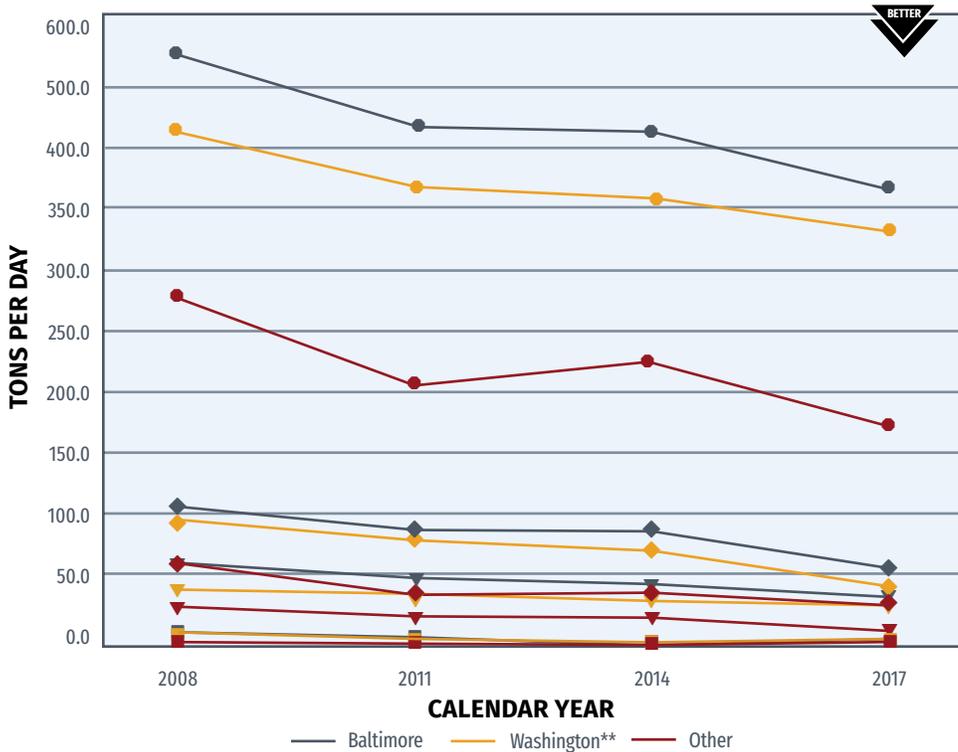
OBJECTIVE:

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



TRANSPORTATION-RELATED EMISSIONS BY REGION*

Emission reduction strategies 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. Providing reliable, safe transportation options through these alternatives to driving will reduce fuel consumption, improve air quality, and improve public health.



WHY DID PERFORMANCE CHANGE?

- MDOT continues to implement emission-reduction strategies in Ozone non-attainment areas in partnership with Metropolitan Planning Organizations (MPOs)
- 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 more than \$28 million on five new projects in federal FY 2020, and more than \$17 million on continuing projects; CMAQ funding supported transit improvements, bus replacements, and ride sharing investments
- In the Baltimore region, MDOT MTA completed a zero-emission transition study and initiated pilot projects for electrifying transit buses; these projects were a small part of a larger effort to meet GHG emission goals and transition to a zero-emission bus fleet
- In the Washington region, MDOT continued to invest in bicycle and pedestrian projects with grant awards to local jurisdictions through the Transportation Alternatives and Kim Lamphier Bikeways Network programs

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- The basis for 2020 regional emission estimates is the National Emissions Inventory (NEI); the 2020 NEI is underway in 2021 utilizing the updated MOVES3 model

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

* All emission estimates developed as part of the USEPAs National Emissions Inventory (NEI). The NEI is published every three years, 2020 data will be available in 2022.

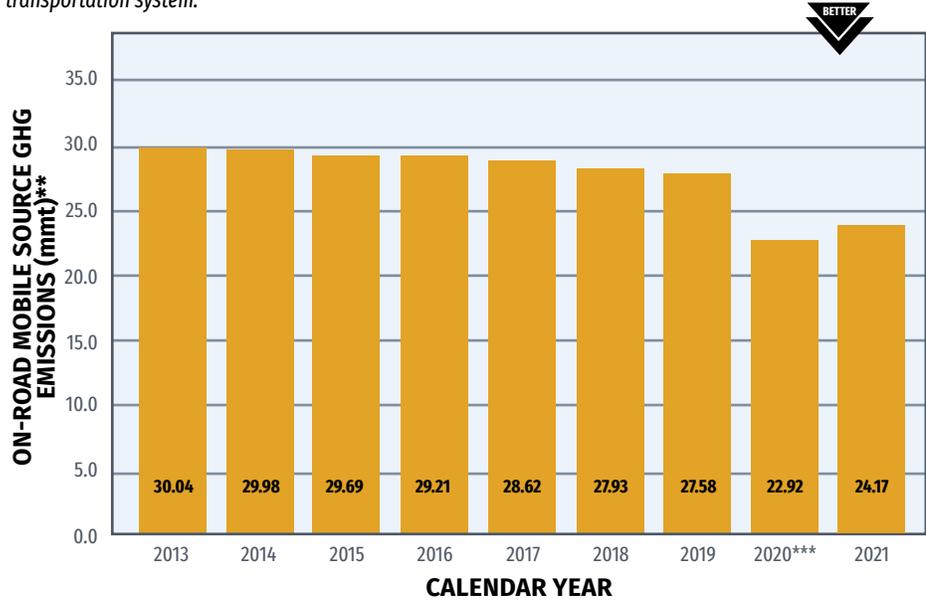
** All Washington data represents Maryland's share of emissions in the Washington region non-attainment areas, including Charles, Frederick, Montgomery, and Prince George's counties.



TRANSPORTATION-RELATED GREENHOUSE GAS (GHG) EMISSIONS



On-road mobile emissions come from vehicles operating on the roadways. Reducing these emissions is a priority for MDOT. This work includes using more efficient or ZEVs, encouraging residents to take less trips or utilize other modes of transportation outside of driving, and improving the overall efficiency of the transportation system.



Target: 25% below 2006 emissions by 2020. For on-road transportation, the goal equals 23.5 mmt CO₂e in 2021 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 EPA's MOVES model available at time of analysis. MOVES2014a is used for analysis year 2016, 2017, 2018, and 2019. HPMS VMT.

*** 2020 data has been revised from previous report.

WHY DID PERFORMANCE CHANGE?

- MDOT completed the MDOT Greenhouse Gas Reduction Act (GGRA) Plan, a component of the Maryland 2030 GGRA Plan, to reduce statewide GHG emissions by 40% from 2006 levels by 2030
- Vehicle Miles Traveled (VMT) dropped dramatically in 2020 due to restricted travel associated with the COVID-19 pandemic; VMT is rebounding in 2021, but was still 10% below 2019 levels at mid-year
- The state's workforce continued to telework at higher levels in 2021 than pre-2020
- Through the Commuter Choice program, MDOT continues to promote incentives, programs, and resources to employers and commuters to reduce congestion
- MDOT's leadership of the Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC) continues to promote the build-out of EV infrastructure and the transition to ZEVs; with ZEEVIC, MDOT is monitoring developments in Hydrogen Fuel Cell ZEV technologies

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

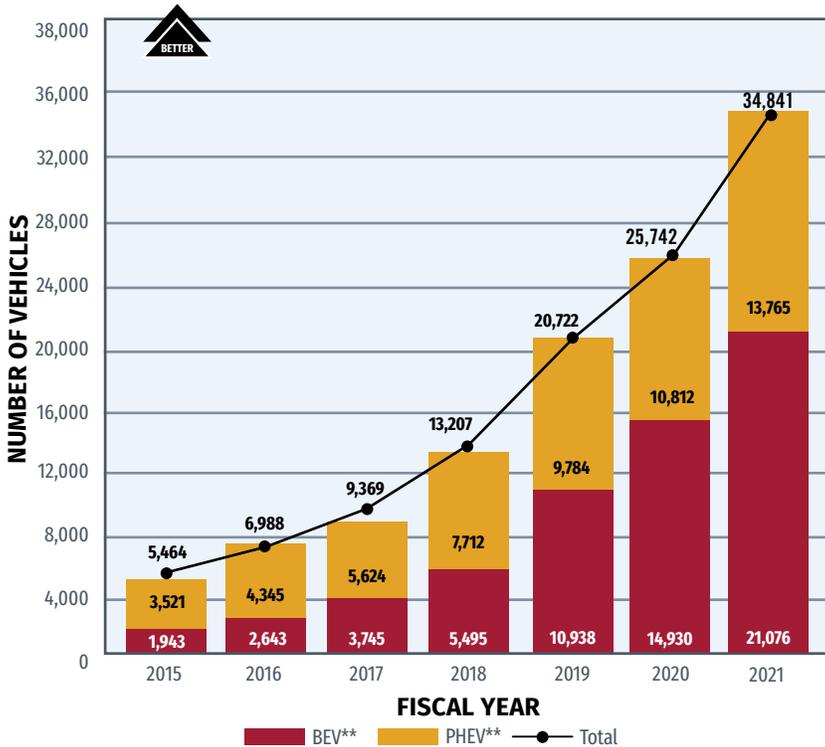
- MDOT committed to a suite of strategies to reduce GHG emissions in the MDOT GGRA Plan, a component of the Maryland 2030 GGRA Plan; strategies address transportation technologies, congestion mitigation, VMT reduction, and infrastructure design
- Reducing GHG in the transportation sector relies on MDOT's continued efforts to reduce VMT, mitigate congestion, improve travel efficiency, improve travel choices, and incorporate new technology



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

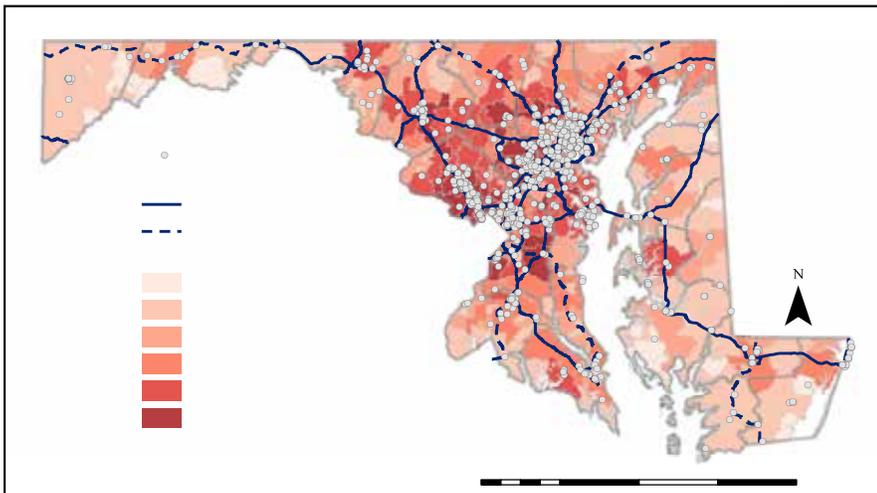


Encouraging the adoption of EVs among Maryland residents requires communicating the benefits of EVs, explaining the charging options available, and documenting charging station locations. MDOT has an important role to play with other public agencies and the private sector to strategically build-out the charging infrastructure in a manner that allows for easy charging along corridors people commonly traverse. State and federal agencies, along with utility companies, provide financial incentives through tax benefits and rebates. By the end of October 2021, the number of registered EVs in Maryland was just under 40,000. In 2021, Kelley Blue Book ranked Maryland 6th in EV charging outlets. They reported Maryland had 57.8 charging points per 100,000 vehicles and 311.3 charging points per 1,000 EVs. Only Vermont, California, Utah, Massachusetts, and Hawaii ranked higher. Vermont, the highest-rated state has 123.6 charging points per 100,000 vehicles and 724.5 charging points per 1,000 EVs. Also in 2021, the American Council for an Energy Efficient Economy (ACEEE) ranked Maryland 4th in the 2021 State Transportation Electrification Scorecard.



*2018, 2019, and 2020 data are through June 30 of their respective years. Previous reports indicated the data was through July 31.

** BEV = Battery Electric Vehicles; PHEV = Plug-In Hybrid Electric Vehicles



WHY DID PERFORMANCE CHANGE?

- Maryland now has 22 EV Alternative Fuel Corridors (EV-AFCs); EV drivers can find publicly accessible EV charging stations within five miles of EV-AFCs
- The number of publicly accessible EV charging stations in Maryland had grown to 1,072 stations and 2,815 outlets by the end of September 2021
- Maryland utility companies offer rebates and incentives to residential and commercial customers to install EV charging and rebates are also available through state programs
- MDOT and Maryland Department of Planning (MDP) held three public workshops with local jurisdictions about connected and automated vehicles (CAV), resources available and what jurisdictions were looking for to help advance CAV across the state

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

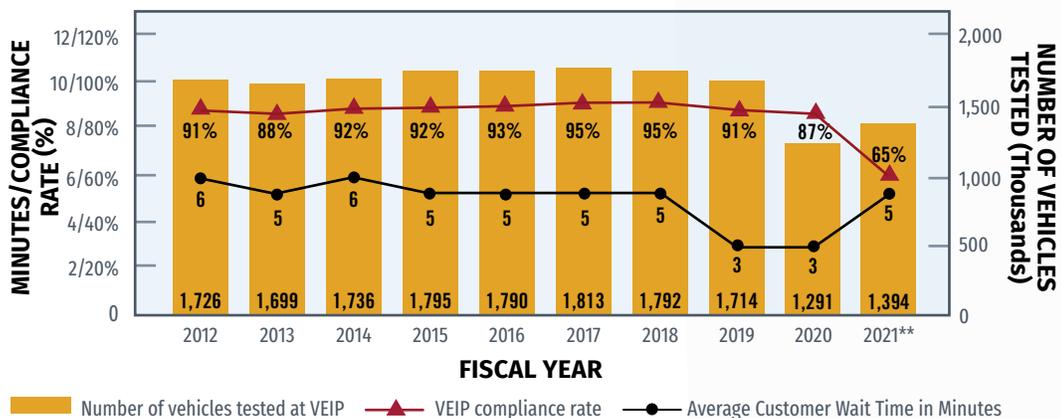
- Continue collecting data on ZEV adoption and charging station utilization; monitor impacts to MDOT revenues and energy networks
- Through a pilot program authorized by the Public Service Commission (PSC), Maryland's public utilities are installing EV charging stations at sites across the state; up to 900 charging stations are in the process of being installed on government-owned public property, including 24 MDOT-owned sites
- Two MDOT work places were awarded grant funding (VW Settlement funds through the MDE Charge Ahead Grant Program (CAGP)) for the installation of Level-2 charging stations; this will enable the installation of four chargers at the MDOT MVA Glen Burnie location, and six chargers at the MDOT MAA Materials Acquisition Center (MAC) location
- In 2021, Maryland passed legislation that requires at least 25% of passenger vehicles purchased in FY 2022 for the state vehicle fleet be ZEVs
- Expand the number of connected vehicle roadside units that broadcast signal phase and timing, pedestrian warning, MAP messages, traveler and/or information messages over a mix of DSRC and LTE C-V2X radio technology



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. Timely and efficient customer service helps the state meet federal clean air standards by identifying polluting vehicles and encouraging regular vehicle maintenance.



* 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.

** 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- In response to COVID-19, MDOT MVA VEIP stations were shut down for several months in 2020 and 2021
- The operation shutdowns created a backlog of vehicles that didn't go through testing on their regular schedules
- When VEIP stations closed for two weeks in December 2020 and January 2021, MDOT MVA kept open the 24-hour kiosks and self-serve kiosks to provide customers with testing options

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- The ability of VEIP stations to stay open and eliminate the backlog is unknown based on the uncertainties surrounding COVID-19 and the emerging variants of COVID-19
- If VEIP stations are closed again, MDOT MVA will replace the operations procedures enacted during the December 2020 and January 2021 closures to try to give customers some options for testing while in-person appointments are not available



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

MDOT is responsible for not just providing Maryland residents and visitors with exceptional transportation infrastructure to meet their travel needs, but must also ensure that the value of its transportation investments are maximized. As stewards of the revenues and user fees that fund Maryland transportation, MDOT realizes fiscal responsibility through thoughtful project management, innovative project delivery, and effective fund management and reallocation.

Utilizing grants as a funding source is a practical way to ensure financial accountability. In October 2020, MDOT MTA was awarded more than \$4 million in federal grants to improve the safety and reliability of MDOT MTA's transit network and enhance mobility options for transit riders locally and statewide. The majority of these funds went to MARC Train for modernization of the rail switch at the Martin's Yard on the Northeast Corridor in Middle River in Baltimore County. The next largest portion is going towards two Baltimore City

projects: a community-based planning study of a mobility hub that will include passenger amenities, such as shelters, ticket vending machines, and real-time signage for the Fayette Street corridor; and expansion of the track warning and detection pilot program to five additional stations on the Metro Subway.

Similarly, in state FY 2021, MDOT MAA administered \$2.2 million to public-use airports across the state through the Statewide Aviation Grant Program. These grants support the flying public with airport improvement and infrastructure preservation projects, safety equipment acquisitions, and environmental compliance activities. This state investment leveraged more than \$33.082 million in Federal Aviation Administration (FAA) funds and \$1 million in airport owner investment. These investments support the financial health of the local communities by providing facilities for all general aviation interests including recreational, business, corporate, and emergency response activities.

MDOT continues to improve how cost-efficiently freight moves through, from, to, and within the state using several strategies. MDOT SHA has invested in new freight performance tools like the Maryland Roadway Performance Tool, which provides performance indicators such as delay per mile, cost of congestion, and freight commodity costs. This information can be used to inform how freight can be moved in the state more productively. MDOT MPA is continuing to plan the Howard Street Tunnel expansion. This project will add double-stacked container shipping capability to and from the Port of Baltimore, which is expected to increase container volumes at the Port by 100,000 annually and create thousands of additional jobs. The Port of Baltimore is a nationally significant freight facility and is the port that is closest to Mid-American inland markets.



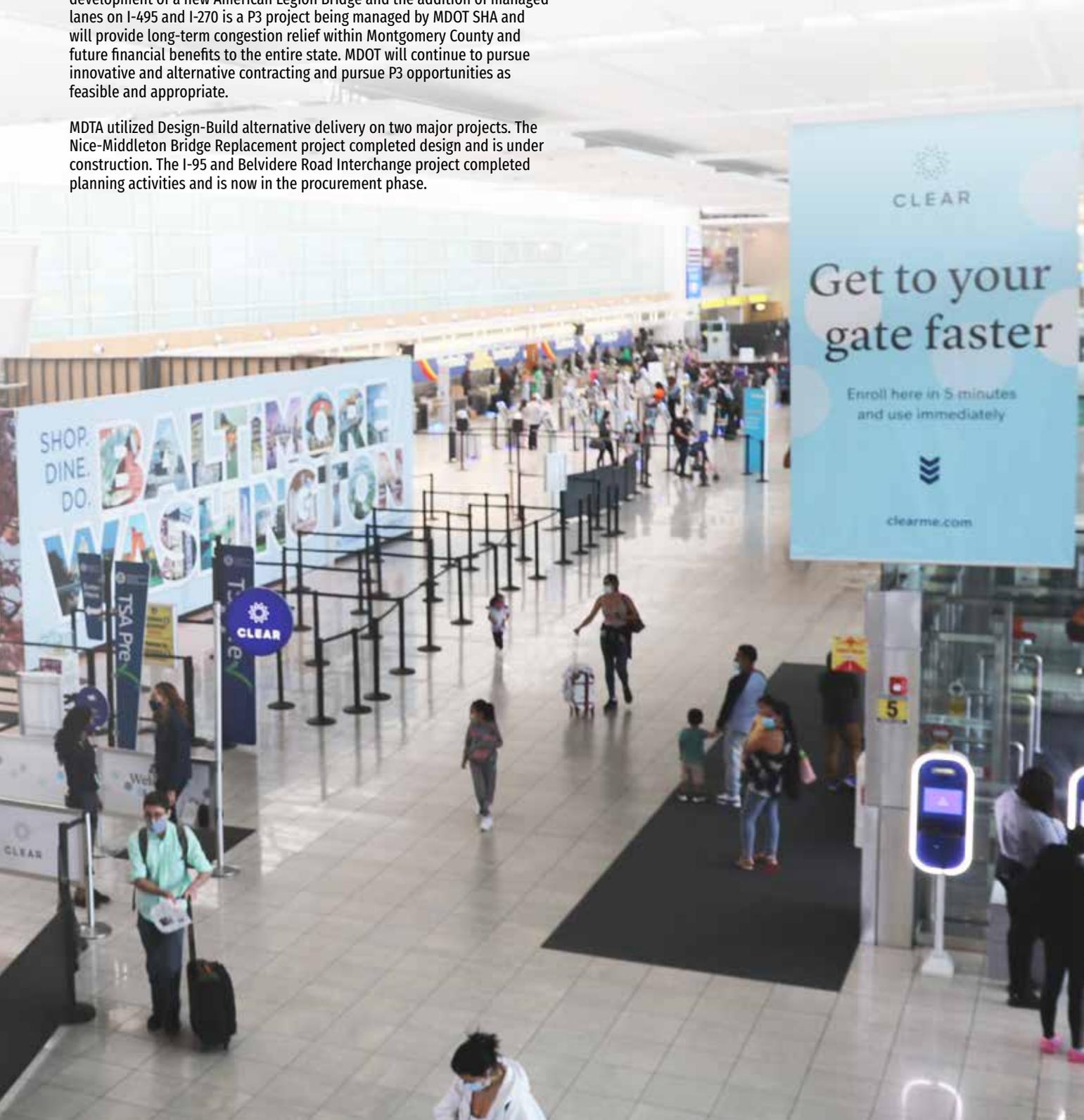
OBJECTIVE:

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

MDOT's transportation needs are thoroughly assessed to identify the best delivery method. Public-Private Partnership (P3), Design-Build (DB), Construction Management at Risk (CMAR) projects, and other alternative-delivery methods are evaluated for each major project. P3 continues to be an important tool for project delivery across Transportation Business Units (TBUs) in the state. The P3 agreement between Ports America Chesapeake (PAC) and MDOT MPA to modernize the Seagirt Marine Terminal also includes state and federal funding. The Purple Line light rail project will connect Prince George's and Montgomery counties inside the Capital Beltway. The development of a new American Legion Bridge and the addition of managed lanes on I-495 and I-270 is a P3 project being managed by MDOT SHA and will provide long-term congestion relief within Montgomery County and future financial benefits to the entire state. MDOT will continue to pursue innovative and alternative contracting and pursue P3 opportunities as feasible and appropriate.

MDTA utilized Design-Build alternative delivery on two major projects. The Nice-Middleton Bridge Replacement project completed design and is under construction. The I-95 and Belvidere Road Interchange project completed planning activities and is now in the procurement phase.

MDOT MVA has pursued an innovative delivery approach with the reconstruction of their headquarters at Glen Burnie. They are securing a CMAR contract to renovate and consolidate their ground floor operations with the ultimate goal of improving customer flow and enhancing customer service. MDOT MAA is also pursuing a CMAR for its Concourse A/B Connector and baggage handling system. These projects are currently in pre-construction. MDOT SHA is also pursuing a CMAR for the Pennsylvania Avenue at Suitland Parkway Interchange project.



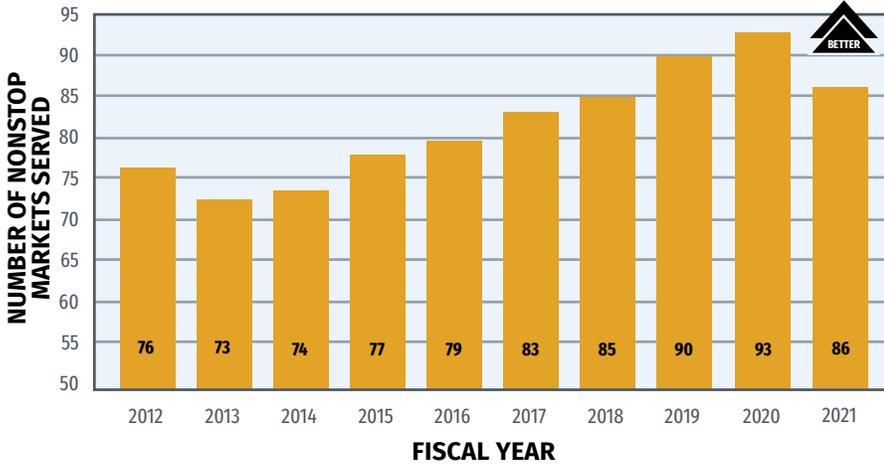
OBJECTIVE:

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 airlines fly through BWI Marshall Airport, it becomes a more-attractive option in the Mid-Atlantic region and reflects the success of MDOT MAA's marketing and management efforts to make it a more-competitive airport.



Target: Near-Term Target: 90 nonstop markets served; Long-Term Target: 100 nonstop markets served

WHY DID PERFORMANCE CHANGE?

- The number of nonstop markets served from BWI Marshall Airport decreased from 93 to 86 in FY 2021 as airlines pulled service due to lack of demand during the COVID-19 pandemic
- Despite an overall loss, FY 2021 did see new routes to Jackson, MS; Massena, NY; Pensacola, FL; and Punta Gorda, FL

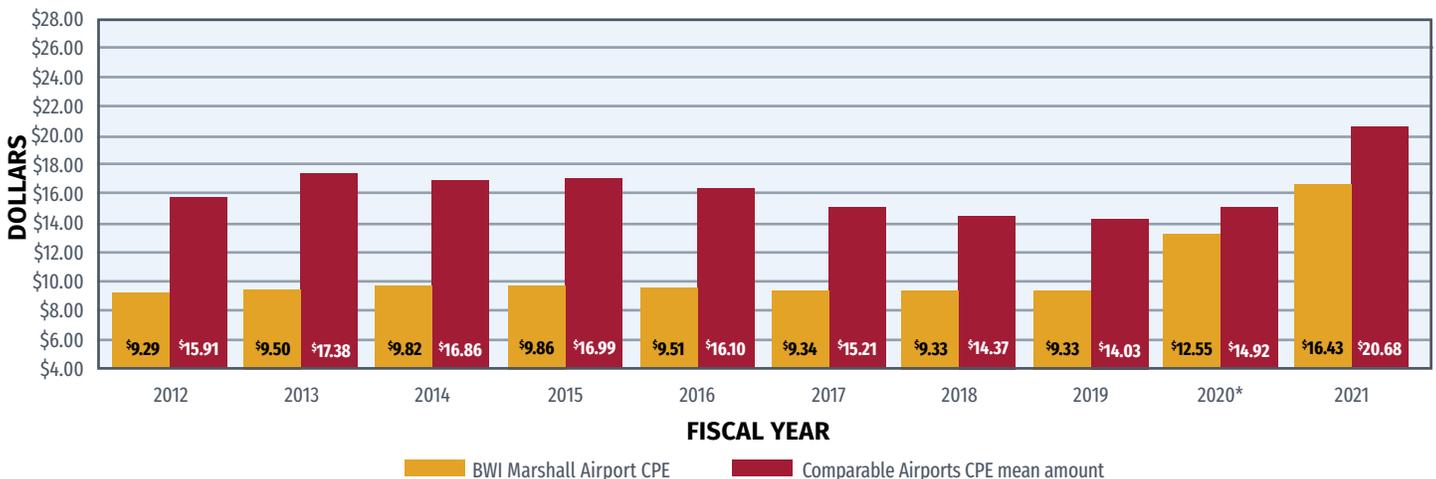
WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- While the pandemic brings much uncertainty, the number of nonstops is expected to return to previous levels in the years following the pandemic
- Some airlines are expected to add new service in FY 2022 to BWI Marshall Airport including flights to Cancun, Mexico; Syracuse, NY; and Reykjavik, Iceland
- Planned airport improvements, both inside the terminal and on the airfield, and enhanced operational controls to maximize gate and apron efficiency will provide opportunity for expanded route options and new service

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 market. BWI Marshall Airport is in a region with three other proximate airports: Ronald Reagan National, Washington Dulles International, and Philadelphia International. The CPE at BWI Marshall Airport continues to be the lowest in the mid-Atlantic region and is below the mean of comparable airports.



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

* 2020 CPE mean amount has been revised from previous report.

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

WHY DID PERFORMANCE CHANGE?

- BWI Marshall Airport continues to have the lowest CPE in the Mid-Atlantic region and below the mean of comparable airports despite the significant decline in enplanements due to COVID-19
- Revenues increased due to negotiated terms, facility improvement projects, and a review of operational cost allocation to airline cost centers

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- CPE at BWI Marshall Airport continues to be the lowest in the Mid-Atlantic region and below the mean of comparable airports despite the significant decline in enplanements; thus, CPE should decrease as enplanements rebound from the pandemic

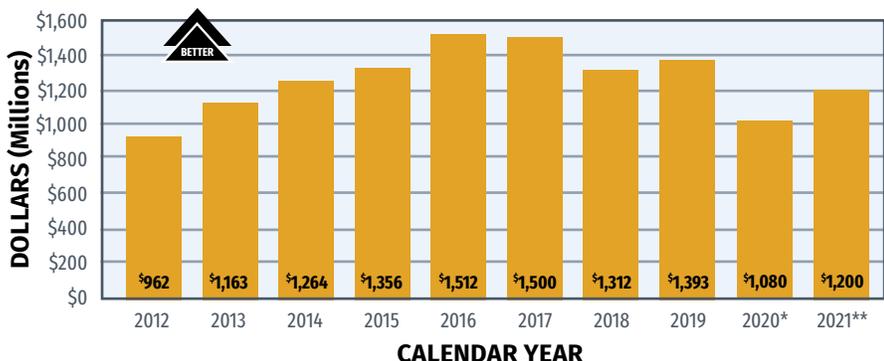


USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT



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.

Heavy volumes of traffic, stop-and-go commuter peaks, and lack of comprehensive information regarding current, real-time conditions on available alternatives contribute to, and compound the effects of, unexpected incidents. With the growth in traffic outpacing any realistic hope of expanding capacity through building new highways, or expanding existing ones, it is imperative to operate the existing system more efficiently through the application of Intelligent Transportation System (ITS) technologies and interagency teamwork.



Target: \$1,200 (\$1.2 billion) million annually

* 2020 data has been revised from previous report.

** 2021 is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

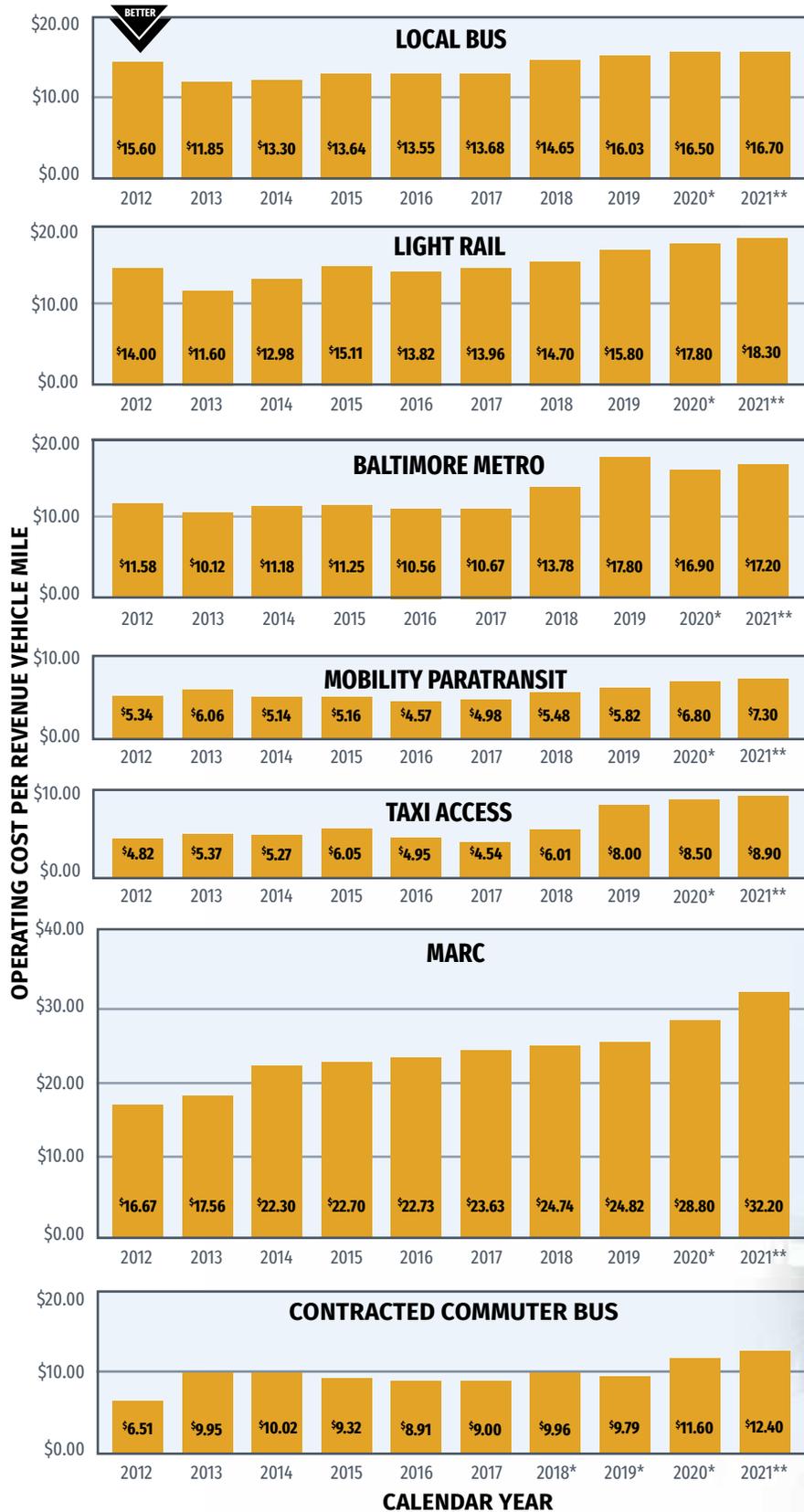
- Incident management saved roadway users \$1.08 billion in CY 2020, a decrease in savings from CY 2019 (\$1.393 billion)
- This drop is due to the effects of COVID-19; while the target has been adjusted due to COVID-19 impacts, this quantity of savings still falls short of the reduced target of \$1.2 billion
- MDOT SHA and MDTA employees are still responding to many incidents each year; CHART drivers patrol 2.4 million miles a year, respond to approximately 23,000 incidents, and assist another 27,000 motorists; MDTA drivers patrol more than 1.2 million miles a year, in CY 2020 they assisted 6,453 drivers, changed 5,940 flat tires, while also removing 6,537 disabled vehicles from the roadway

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDTA will extend the northbound two-lane I-95 Express Toll Lanes (ETL) through Baltimore County to MD 24 in Hartford County, an area that experiences routine congestion during peak hours; the extension includes several improvements, will address capacity concerns, and allow for better incident management and maintenance activities
- MDTA is also working on an automated lane closure system for the Bay Bridge crossovers to reduce the response time and improve safety for implementing lane closure and two-way traffic operations on the bridge for incidents and construction work



OPERATING COST PER REVENUE VEHICLE MILE



WHY DID PERFORMANCE CHANGE?

- Operating cost per revenue mile increased across all options year-over-year, which can be attributed to additional operating expenses from cleaning, personal protective equipment, and other safety measures related to the COVID-19 pandemic; additionally, temporary service reductions related to the pandemic, in 2020 and 2021, decreased revenue vehicle miles, which resulted in increases to MDOT MTA's cost per mile
- Operating costs are also affected by labor contracts and increased wages provided to attract and retain the transit labor force

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- As MDOT MTA implements fare collection and zero-emissions buses, the agency will prioritize optimal solutions that reduce operating costs
- MDOT MTA will also continue to prioritize funding for state of good repair projects across all its modes, with particular focus on older assets

* Data has been revised from previous report.

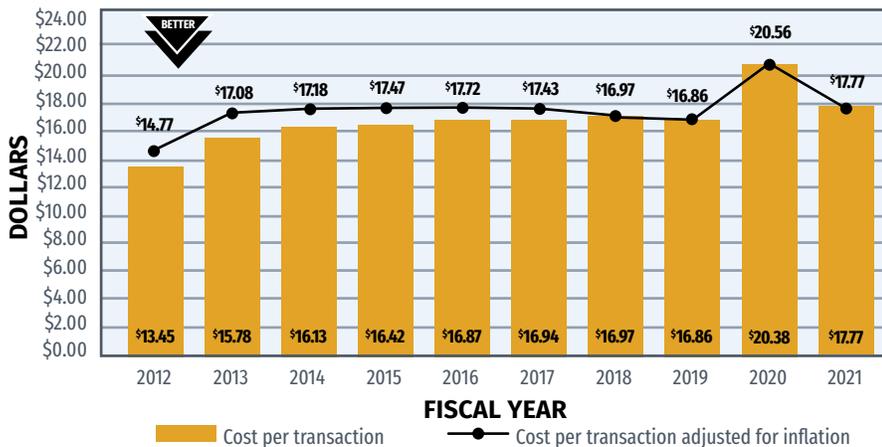
** 2021 is preliminary and subject to change.





MDOT MVA COST PER TRANSACTION*

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).

WHY DID PERFORMANCE CHANGE?

- Average cost per transaction decreased from \$20.56 to \$17.77 this fiscal year, after an increase in FY 2020 due to a decrease in total transactions
- As MDOT MVA branches have reopened after unexpectedly closing due to COVID-19 in 2020, the number of total transactions have rebounded, lowering the cost per transaction

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MVA will continue to implement and encourage using alternative and online services including online transactions, self-serve kiosks, mail-in options, and others as an alternative to in-branch transactions

OBJECTIVE:

Ensure a consistent revenue stream and ample financing opportunities

Once transportation declined at the start of the COVID-19 pandemic, transportation revenue also dropped. To mitigate this funding instability, several stopgap measures were used to ensure consistent funding for transportation in the state of Maryland. For example, MDOT received roughly \$500 million from the American Rescue Plan Act of 2021 through the state of Maryland and more than \$500 million through the Federal Transit Administration (FTA). This funding was leveraged to preserve capital projects in the program as well as enable additional high-priority projects to move forward. A majority of these funds were directed to crucial system preservation needs. MDOT SHA utilized funding to ensure that the MDOT SHA bridge and highway assets remain in a state of good repair. In addition to two major bridge preservation projects, a portion of these funds was applied to multiple highway resurfacing projects statewide. MDOT MTA was also able to preserve funding for state of good repair needs for bus, metro, MARC and light rail facilities and systems. The funds also enabled investments in a zero-emission bus fleet, dedicated bus lanes, and improved access to bus service. MDOT MVA was able to preserve funding for critical preservation needs related to branch office buildings, as well as Customer Connect upgrades. The COVID-19 global pandemic significantly impacted Transportation Trust Fund (TTF) revenues, and by effectively leveraging American Rescue Plan Act (ARPA) funds, MDOT was able to continue to provide critical services and invest in critical infrastructure needs.

Additional funding came in the form of the FY 2021 Appropriations and COVID Relief legislation on December 27, 2020. This legislation includes a \$2 billion General Fund supplement for highways. Of this, Maryland received approximately \$11 million for bridge replacement and rehabilitation, and \$10 million for Surface Transportation Block Grant (STBG) program eligible projects. For the COVID relief portion of this legislation, \$10 billion is provided to state Departments of Transportation (DOTs). These funds are not considered stimulus funds, rather, a recovery (backstop) for lost revenue due to the pandemic. Maryland's share of this backstop funding is approximately \$150 million.

As travel behavior and patterns have rebounded since the start of the pandemic, MDOT has reported gradual recoveries after the unprecedented speed and depth of decline of transportation revenues due to the COVID-19 pandemic. Revenues have stabilized and are expected to recover during the six-year period as the state recovers from the impact of COVID-19 and more normal travel patterns resume.



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

Providing the infrastructure, policies, and programs that give residents choices in the modes they can use to take trips is a key priority for MDOT. Likewise, having redundancies in the freight network that allow companies to choose the mode that works the best for them is part of that same key priority. Maryland is fortunate to have robust passenger and freight networks that give people and businesses options for traveling.

While the COVID-19 pandemic has slowed transit ridership, it hasn't diminished transit access or mobility options. Many transit agencies like the Washington Metropolitan Area Transit Authority (WMATA) and MDOT MTA are focused on ridership as a key performance measure. In pre-pandemic times this performance measure captured the essence of transit as a mobility service. However, the pandemic has shifted the total number of trips people take along with when they take trips. Throughout the pandemic, transit agencies have remained an indispensable service providing mobility to essential workers while trying to right-size service in a constantly evolving world.

MDOT MTA is fortunate to have a recently developed plan to guide their policies and investment choices during the economic recovery. The strategic plan outlines a path forward to provide an equitable transit system. This will be such an important resource as MDOT MTA attempts to add service to meet growing demand. Many of the riders that are still using transit services depend on MDOT MTA to get to work, school, and shopping. Adding service to improve equity will be a key component of ensuring all Baltimore residents can thrive in a post-pandemic world.

The Commuter Choice Maryland program has been successful at partnering with employers to give employees information, tax breaks, and incentives. One part of the program has always been incentivizing work from home or telework, as telework decreases traffic congestion. Moving forward, as telework becomes more common in the long-term, the Commuter Choice Maryland program will have the opportunity to evolve into helping to reduce other trips or offering new incentives for people who only commute a few days a week or month. Full-time commuters have routines, they quickly notice small changes in their travel patterns and they adapt. With the emergence of part-time commuters, the Commuter Choice Maryland program will have an important role to play in keeping these occasional commuters up to date with information about transit, projects that are causing delays, new fare payments, or policies that affect their travel.

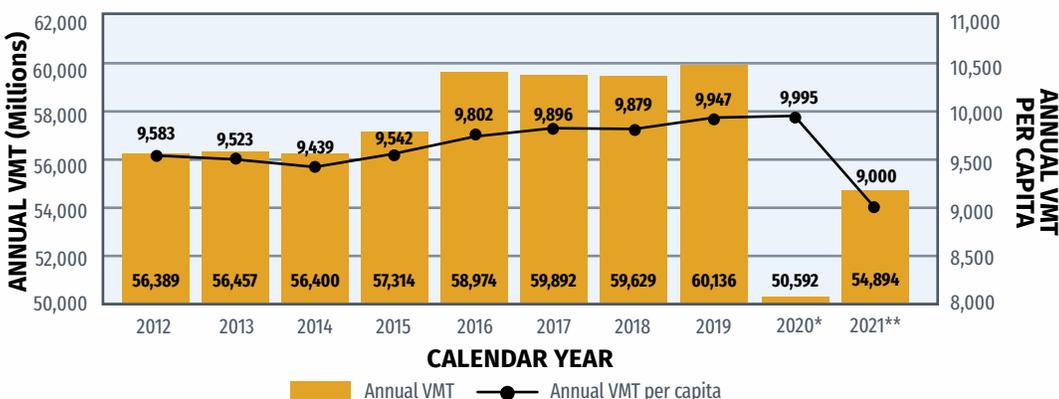
Throughout 2021, Maryland continued to prioritize the construction of sidewalks and bicycle infrastructure that extends the network of non-motorized infrastructure and fills in gaps in the existing network. In FY 2021, MDOT invested nearly \$2 million in design and construction of bicycle projects, including completing major projects like the Frederick Douglass Rail Trail bridge over Tuckahoe Creek. Similarly, MDOT invested nearly \$3 million in sidewalk design and construction.

OBJECTIVE:

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

TOTAL VEHICLE MILES TRAVELED (VMT) AND VMT PER CAPITA

VMT captures the totality of travel on the roadways by passenger vehicles and freight vehicles. This figure is used to assist with many important transportation metrics such as safety, incidents, congestion, mobility, and emissions. The 2020 U.S. Census revealed that Maryland's population is steadily growing and within the state there are areas experiencing population loss and growth. These changes in population result in changes in land use and transportation demand. For example, population loss can drive more trips or longer trips if basic services are reduced or no longer available in certain communities and neighborhoods. An increase in VMT usually means more congestion, emissions, and reduced mobility, and with these impacts in mind, MDOT continues to work to reduce VMT.



* 2020 has been revised from previous report.
 ** 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- Annual VMT decreased by approximately 16% in CY 2020 as a result of the COVID-19 pandemic
- Lifting these orders in 2021 resulted in a steady increase in VMT and MDOT expects that growth will continue to return to pre-COVID levels

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT will continue to work with local and regional agencies to monitor annual VMT and with employers to promote telework and other options through the Commuter Choice program

NUMBER OF DIRECTIONAL MILES IMPROVED FOR BICYCLE ACCESS/ LEVEL OF TRAFFIC STRESS (LTS) ON ROADWAY MILES MARYLAND



The Maryland Department of Transportation is transitioning from using the Bicycle Level of Comfort (BLOC) to using the LTS for measuring the bikeability of the roadway network. This transition is in coordination with the implementation of MDOT SHA's Context Driven Guide and other national and departmental initiatives. LTS is preferred over BLOC as LTS requires fewer variables to calculate including:

- Presence and type of bicycle facility
- Speed Limit
- Number of Through Lanes/Traffic Volume
- On-street parking presence

Traditionally, the LTS (scale "1" to "4") is a measure for assessing the quality of the roadway network for its comfort with various bicycle users. The lower the LTS score, the more inviting the bicycle facility is for more audiences. Maryland's LTS rating includes two additional scores: "0" to represent shared-use paths and similar facilities that are suitable for anyone to bicycle and "5," which represents roadways prohibited to bicycle access. The below chart describes the LTS score in relation to the target bicycling audience and the corresponding bicycle facility on which it would travel.

LTS	TARGET AUDIENCE	BICYCLE FACILITY TYPES
0	All ages and abilities	A rail-trail, shared-use path
1	Almost everyone	Protected bikeways, sidepaths
2	Interested, but concerned	Bike lanes, bike boulevards
3	Enthusied and confident	Bike lanes, shared lanes, shoulders
4	Strong and fearless	No bike facility or on arterial road-ways
5	Bike Access Prohibited	Bicycle access is prohibited by managing roadway agency

As MDOT continues to develop an LTS baseline, LTS roadway goals will be developed in conjunction with the Context Driven Guide and the Pedestrian Safety Action Plan.

WHY DID PERFORMANCE CHANGE?

- Like other transportation modes, bicycle networks are increasingly evaluated by their access and mobility; a successful bike network connects community services with comfortable facilities for people regardless of biking abilities; as part of this revised evaluation, MDOT replaced BLOC with LTS to measure how bikeable roadways are; LTS measurement is produced by using roadway speeds, number of travel lanes and presence of bicycle facility from the MDOT SHA's OMOC geodatabase
- The new database incorporated a comprehensive inventory of shared-use paths and sidepaths and on-road bicycle facilities; these paths had not previously been accounted for when calculating BLOC; additionally, some bike lanes on major arterial roadways will have a higher LTS score than BLOC score due to adjacent higher traffic speeds and volumes
- Local jurisdictions are including more bicycle and shared-use path projects in annual transportation priority letters; MDOT supports these projects through Bikeways grants and MDOT SHA district-level support

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Conduct bicycle network analyses to determine network gaps and bicycle access in preparation for the Bicycle and Pedestrian Master Plan update
- Continue to support MDOT initiatives including Context Driven design guideline development, the Bicycle Retrofit program, Transportation Alternatives program, and Kim Lamphier Bikeways Network program

MDOT MTA AND WMATA RIDERSHIP

Ridership is a key indicator of transit usage and health. Ridership is not only helpful to measure at a systemwide level, but also by transit mode and routes. Ridership is one primary indicator transit agencies have for productivity of their service. MDOT MTA provides service across greater Baltimore with some regional services connecting to Washington D.C. WMATA provides transit service within the Washington D.C. region and into Maryland and Virginia. These agencies provide many types of transit service: paratransit, bus, commuter bus, streetcar, light rail, metro subway, and commuter rail.

The COVID-19 pandemic resulted in less trips to work and recreation events. This resulted in a severe decline in transit ridership. In 2021, transit ridership started to rebound. This transition back to normal travel patterns will require WMATA and MDOT MTA to adjust service levels to match rider demand. Both agencies will be strategically pursuing policies that incentivize transit and maintain safety for all users.

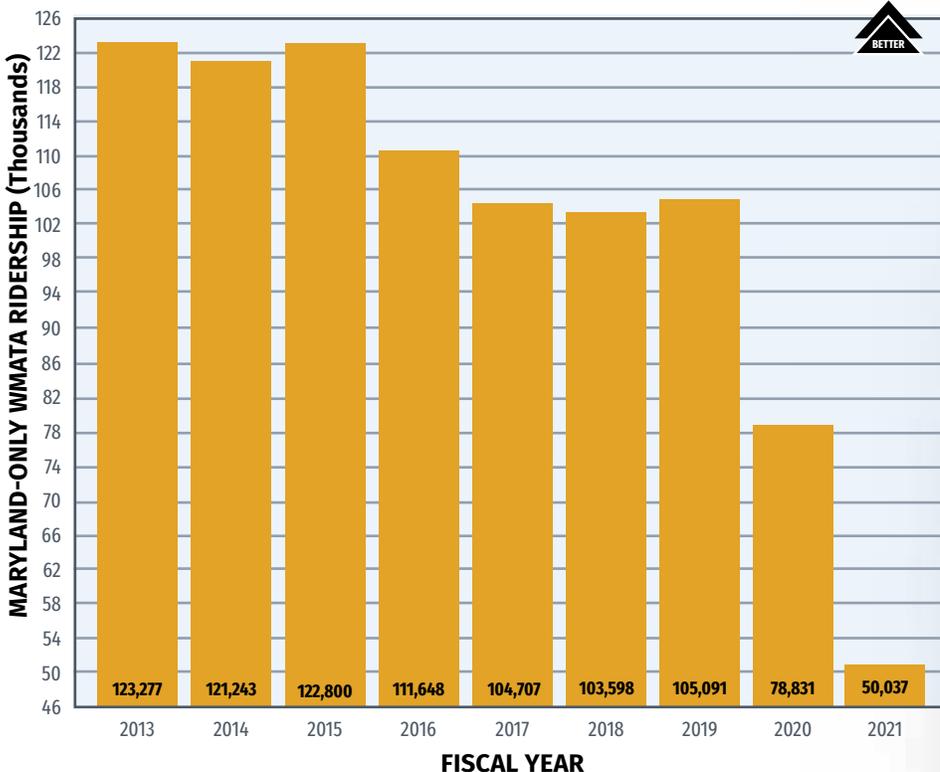


FISCAL YEAR	2012	2013	2014	2015	2016	2017	2018	2019*	2020*	2021**
TRANSIT RIDERSHIP—MDOT MTA DIRECT-OPERATED SERVICES (THOUSANDS)										
Local Bus	79,535	80,071	75,780	78,697	75,619	69,587	63,730	63,989	55,439	35,370
Baltimore Metro	15,364	15,208	14,632	13,901	12,222	10,960	8,738	7,275	5,864	1,615
Light Rail	8,540	8,647	8,106	7,657	7,431	7,414	7,401	6,966	4,682	2,453
TRANSIT RIDERSHIP—CONTRACTED SERVICES AND LOTS (THOUSANDS)										
MARC	8,452	9,062	9,168	9,246	8,962	9,185	9,322	9,191	6,677	969
Contracted Commuter Bus	4,290	4,187	4,017	4,034	3,928	3,866	3,841	3,623	2,619	519
Mobility Paratransit & Taxi Access	1,900	2,084	2,289	2,495	2,556	2,746	2,941	2,974	2,492	1,245
Local Operating Transit System (LOTS)	40,908	40,281	42,500	39,441	38,476	39,818	41,096	32,867	25,412	11,983

* 2019 and 2020 data has been revised from previous report.

** 2021 data is preliminary and subject to change.

MARYLAND-ONLY WMATA ANNUAL RIDERSHIP (THOUSANDS)

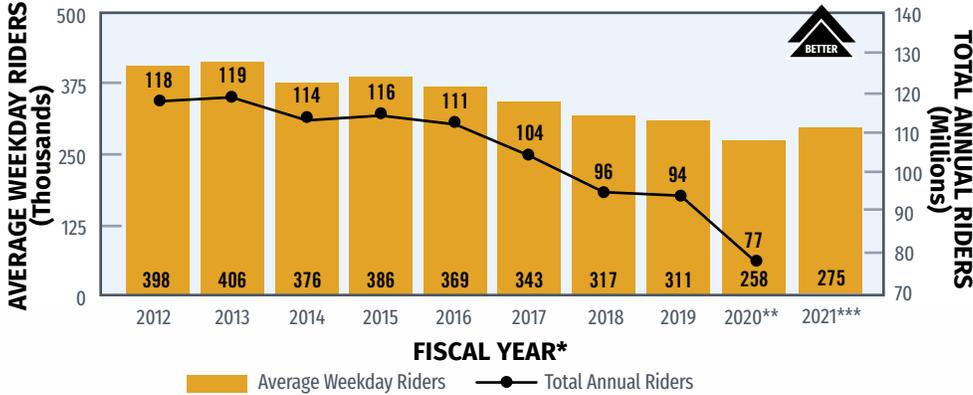


MDOT MTA TRANSIT RIDERSHIP

FACING CHALLENGES

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

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.

**2020 has been revised from previous report.

*** 2021 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- More people began traveling to work and other events; in 2021, ridership began to rebound, but it is unclear when transit ridership levels will return to pre-pandemic levels
- Transit agencies continued to use best available information to keep passengers safe at stops, stations, and in vehicles; this includes deploying mask policies, increasing sanitation of vehicles

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- In 2021, the WMATA board voted to increase service and decrease fares starting in September; this package of incentives is meant to increase ridership; new fares will reduce trip cost by up to 50%; increased service is focused on off-peak hours and trains will operate later in the evening and earlier on Sundays; WMATA is requiring all employees get vaccinated against COVID-19
- The Regional Transit Plan for Central Maryland describes three goals: optimize existing transit services, improve connectivity and integration of existing and future transit services, and enhance fiscal sustainability; these goals will help guide agency decisions and investments
- MDOT MTA's first 50-year Statewide Transit Plan will outline a vision for transit across the Baltimore region
- In 2021, MARC trains and Commuter Bus service returned to pre-pandemic service levels; MARC trains also now come equipped with bike racks on each train
- In 2021, MDOT MTA released new three and 10-day transit passes called CharmFlex; they can be purchased through the agency's CharmPass mobile fare payment app; the new product is unique because it can be used on consecutive days or non-consecutive days



OBJECTIVE:

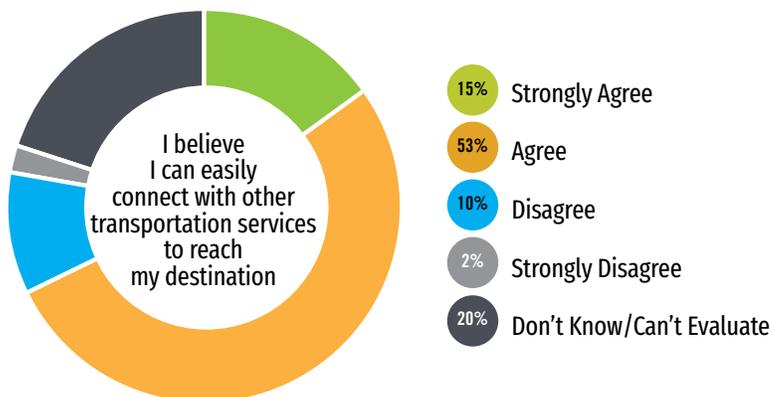
Increase and enhance multimodal connections to improve movement of people and goods within and between activity centers

MDOT SURVEY – PERCEPTIONS OF MULTIMODAL CONNECTIVITY *

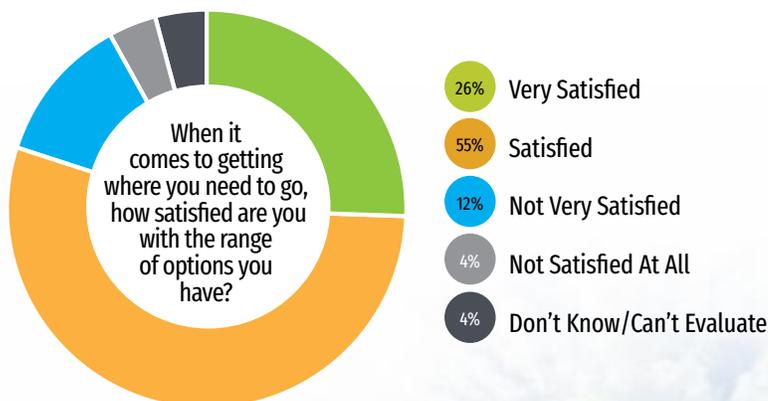
MAKING
PROGRESS

This MDOT survey measures the public's perception of connectivity, highlighting where MDOT and the Transportation Business Units (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. 81% of respondents were either satisfied or very satisfied with the transportation options.

MDOT SURVEY QUESTION:



MDOT SURVEY QUESTION:



WHY DID PERFORMANCE CHANGE?

- All MARC trains are now equipped with bike racks; this integration allows riders to make their entire trip quicker
- MDOT MTA expanded their CharmPass options to accommodate employees that telework part-time by offering multi-day passes that can be used on non-consecutive days
- MDOT MVA's Maryland Highway Safety Office (MHSO) worked with the metropolitan organizations in Maryland to promote the pedestrian and bicycle safety High Visibility Enforcement (HVE) campaigns, *Look Alive* (Baltimore Metro) and *Street Smart* (Washington Metro); with the changing of the clocks in the fall, days are shorter and visibility between drivers and non-motorists is reduced making it a good time of year to remind Marylanders about increased risks

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA's new Statewide Transit Plan will outline strategies for multimodal connections and service integration, such as payment, information, and trip planning across MDOT MTA, Locally Operated Transit Systems (LOTS), and other transportation providers
- Completion of the Howard Street Tunnel will allow double-stacked rail traffic to move from the Port of Baltimore to Chicago
- Nearly \$1 million in grants to organizations and law enforcement to employ new initiatives focused on pedestrian and bicycle safety

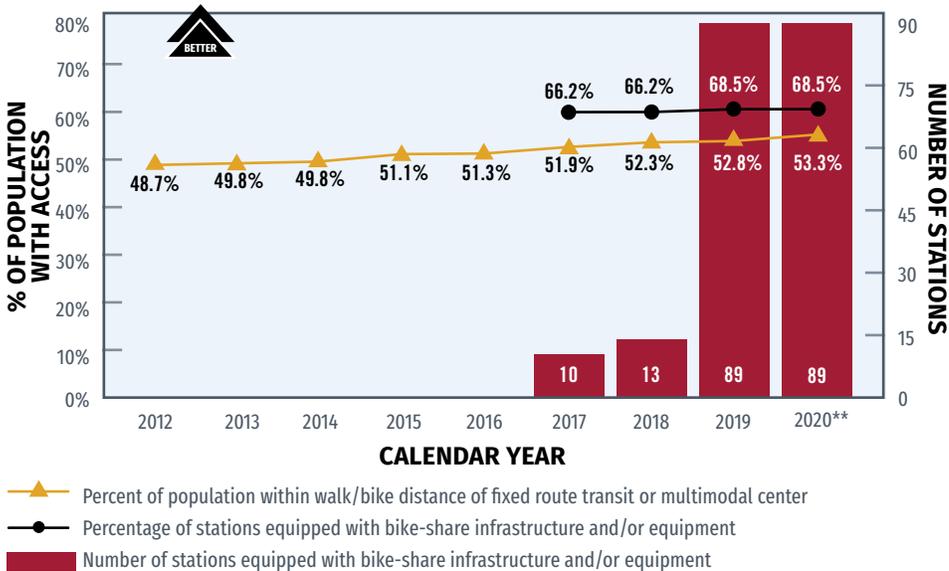
* The survey data reported is 2020 survey data; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2021 survey data will be published in the 2023 Attainment Report.



ACCESS TO TRANSIT AND BICYCLE ACCESS TO TRANSIT*



These two performance measures capture the ability of people to access transit service. For a person walking, the measure is the number of people able to walk to a transit station or stop. For bicyclists, the measure is the number of people able to bike to a transit station or stop. The measure also takes into account access to multimodal hubs or transit centers.



* Methodology for this measure changed in 2019 to include any stations with bike racks, bike storage, and other bike-sharing facilities.
 ** 2020 data is preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

- Both walking and biking access to transit haven't changed significantly during the last few years; the reason for the modest increases is the gradual addition of transit services in new areas and the gradual increase in walking and biking infrastructure
- Each year, MDOT and partners improve sidewalks and bike trails, while adding new facilities, but the number is modest
- Most dense, urban areas are already well-equipped with transit service and bicycle and pedestrian facilities, however gains in access can mostly be made in suburban areas

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Allowing full-size bikes on MARC trains and increasing access to e-scooters and bikes across all modes
- Continue to invest in information systems and technologies that make it easier for non-drivers to connect among the various modes
- Strategically fund gaps in the bicycle and pedestrian networks that make it safe and reliable for people to access transit by walking and biking

OBJECTIVE:

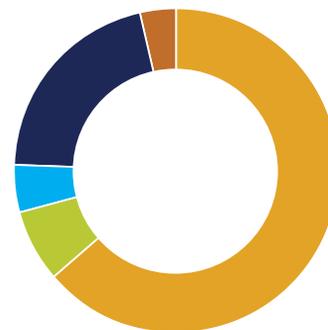
Inform and educate customers on transportation options and benefits

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 transit, carpool, vanpool, walking, biking, teleworking, Maryland Commuter Tax Credit, and Guaranteed Ride Home. With the COVID-19 State of Emergency, Maryland saw many more people teleworking. Commuter Choice Maryland can provide options to maximize travel choices and deliver solutions that can reduce congestion, conserve energy, facilitate economic opportunity, and enhance the life of all Marylanders. Commuter Choice Maryland also continues to provide resources, tips, incentives, and tools to facilitate teleworking and other TDM strategies in 2021. Visit: 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. Visit: www.commuterconnections.org



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020**
DRIVE ALONE	73.3%	73.4%	73.9%	73.9%	73.8%	73.8%	73.7%	74.3%	73.9%	30.9%
CARPPOOL	10.1%	9.8%	9.0%	9.3%	8.9%	9.0%	9.1%	8.8%	8.7%	3.4%
TRANSIT	9.2%	8.9%	9.2%	9.0%	9.0%	8.5%	8.5%	7.9%	8.0%	2.3%
WORK AT HOME	4.1%	4.2%	4.2%	4.1%	4.4%	4.7%	4.9%	5.2%	5.5%	10.1%
OTHER	0.9%	0.9%	0.9%	1.1%	0.3%	1.2%	1.3%	1.4%	1.4%	1.7%
WALK	2.3%	2.5%	2.4%	2.3%	2.6%	2.5%	2.1%	2.1%	2.2%	
BICYCLE	0.3%	0.4%	0.4%	0.3%	1.0%	0.3%	0.4%	0.3%	0.3%	

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

** 2020 American Communities Survey (ACS, U.S. Census) data is experimental estimation methodology, uses ACS 1-year experimental tables and should not be compared with other ACS data. The other category includes taxicab, motorcycle, bicycle, walked, or other means. Total for 2020 data is 48.41%.

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 (TERMS)**			
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	5,200	147,371
Employer Outreach	Supports marketing efforts to increase employee awareness and use of alternatives to driving alone to work every day	87,738	1,489,165
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	1,363	40,541
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	16,281	375,135
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	1,636	308,001
Mass Marketing	Promotes and communicates the benefits of alternative commute methods to single-occupant vehicle commuters through the media and other wide-reach communications	14,031	277,511
MDOT MTA TRANSPORTATION EMISSION REDUCTION MEASURES (TERMS)			
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.

** 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.

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

WHY DID PERFORMANCE CHANGE?

- Employees interest in telework increased substantially across 2020 and 2021, especially as employer technologies caught up and children returned to school
- University of Maryland returned to in-person in September 2021, with more students, faculty and staff on campus, trips to and from campus have increased
- Employer outreach was made difficult with constantly evolving work policies and health guidance; employers were hesitant to invest in new commute efforts
- Scooters and other micromobility options continue to offer people trips without sharing space with strangers
- Driving alone was an attractive option for many commuters when congestion declined as a result of the pandemic and COVID-19 transmitting at high levels
- Continued to adapt to changing commute patterns and demands; increase transit service to match new demands; continue to provide service to essential workers
- While transit ridership declined, bus ridership was the least-impacted mode; throughout the pandemic, buses continued to move essential workers

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Promote resources and incentives through MDOT's Commuter Choice Maryland Program; encourage commuters to try alternatives to driving alone to work such as transit, ridesharing, (carpool & vanpools), biking, walking, telework, and alternative work schedules as they plan their commute to work; more information is available at www.commuterchoicemaryland.com
- MDOT is expanding the incenTrip program in Maryland, <https://mdot.maryland.gov/incenTrip>



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 to consider switching to alternative transportation choices, like transit, vanpool/ carpool, telework or alternative work hours. www.commuterchoicemaryland.com
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 (CPE)	CPE 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. There are two main types of EV currently on the market: Battery Electric Vehicles (BEV), powered solely by electricity stored in a battery pack in the car and Plug-in Hybrid Electric Vehicles (PHEV), vehicles where the battery pack lets them travel several miles on electricity before a range-extending gasoline engine takes over.
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 an E-ZPass® account.
Fiscal Year (FY)/ Federal Fiscal Year (FFY)	A yearly accounting period covering the period between July 1 and June 30 of each reporting year (FFY: October 1 to September 30).
Fixing America's Surface Transportation Act or "FAST Act"	On December 4, 2015, President Obama signed the FAST Act (Pub. L. No. 114-94) into law - the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes \$305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs.
Greenhouse Gas (GHG)	Any of various gaseous compounds (such as carbon dioxide or methane) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect. The transportation sector is one of the largest contributors to U.S. GHG emissions.
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.
Moving Ahead for Progress in the 21st Century Act (MAP-21)	On June 6, 2012, the President signed into law the MAP-21 (Pub. L. No. 112-141) - new legislation that will stabilize funding for highway and transit programs for two years and will set national, statewide, and metropolitan transportation planning and policy direction. The federal bill did not increase funding levels and also did not address the long-term solvency of the Federal Highway Trust Fund.
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.
REAL ID	The federal REAL ID Act of 2005 sets new standards designed to improve the integrity and security of state-issued driver licenses and identification cards. The legislation contains 39 benchmarks for states to meet the requirements of the REAL ID Act. The full text of the REAL ID Act (including benchmarks) is available on the Department of Homeland Security's website at www.dhs.gov . General information about Maryland's involvement with the REAL ID Act is available on MDOT MVA's website at www.mva.maryland.gov .
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 flexibility 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.
Strategic Highway Safety Plan (SHSP)	A SHSP is a federally required statewide-coordinated safety plan that provides a framework for reducing highway fatalities and serious injuries on roadways.
Traffic Relief Plan (TRP)	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 SM (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)	In 2008, the legislature adopted a definition of TOD. As defined in statute, a TOD is: "a dense, mixed-use deliberately-planned development within a half-mile of transit stations that is designed to increase 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). The MDOT Secretary also serves as Chairman of the Maryland Transportation Authority (MDTA).
Transportation Emissions Reduction Measures (TERMs)	Metropolitan Planning Organizations (MPOs) and state Departments of Transportation (DOTs) are required, from the Clean Air Act Amendments of 1990 (CAAA) and the Safe, Accountable, Efficient, Flexible, Transportation Efficiency Act (SAFETEA-LU); to identify TERMS that provide emission-reduction benefits. These measures are assessed in conformity documentation and include specific information on the costs and expected air-quality benefits.
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 Traveled (VMT)	A measurement of the total miles traveled by all vehicles.
Zero Emissions Electric Vehicle Infrastructure Council (ZEEVIC)	The ZEEVIC was established by state legislation in 2011 (and expanded in 2019 to include zero emission vehicles). The ZEEVIC is charged with development of policies, recommendations, and incentives that increase awareness, support ownership, and promote investment by the private sector of and in ZEVs. ZEEVIC also develops recommendations for a statewide EV charting and hydrogen refueling infrastructure plan and other potential policies to promote and facilitate successful integration of ZEVs into Maryland's transportation network.
Zero Emissions Vehicle (ZEV)	A ZEV is a vehicle that does not emit harmful emissions from the engine. ZEVs include, but are not limited to; BEVs which are 100% zero emissions, PHEVs, and hydrogen fuel cell electric vehicles (FCEVs).

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 Incidents Per 100,000 Vehicle Miles	Preventable incidents are crashes in which drivers did not do everything they could to avoid an accident	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 amount of foreign and general cargo moving through the Port of Baltimore	MDOT MPA	20
Annual Hours Of Delay For Trucks And Truck Travel Time 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 and MDTA	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, includes video tolls, I-tolls, and AVI	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
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

APPENDIX: LIST OF PERFORMANCE MEASURES BY GOAL

PERFORMANCE MEASURE	DEFINITION	TBUS	PAGE NUMBER
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 GHG Emissions	Green House Gas (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			
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 MAA	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 / Level of Traffic Stress (LTS) on Roadway Miles in Maryland	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, Paratransit & Taxi Access, and WMATA	MDOT MTA and WMATA	51
MDOT MTA Transit Ridership	Weekday transit usage demonstrates progress toward better mobility	MDOT MTA	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

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2022

ANNUAL ATTAINMENT REPORT

Implementing the Maryland Transportation Plan and Consolidated Transportation Program

On Transportation System Performance



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.”

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