2023 Annual Attainment Report
On Transportation System Performance

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

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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, exceptional, and inclusive 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. The Secretary is also the Chairman of the Port Commission and the Airport Commission. While the Washington Metropolitan Area Transit Authority (WMATA) is not part of MDOT, the Secretary serves as a Member of the WMATA Board and 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 (TBUs)

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

List of Performance Measures By Goal

Highlights

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

▰ Traffic fatalities in Maryland have decreased compared to the previous year from 573 deaths in 2020 to 563 deaths in 2021.

▰ MDOT MPA, in partnership with U.S. Customs and Border Protection and Carnival Cruise Line, began using facial recognition technology for disembarking passengers at Maryland's Port of Baltimore in 2022.

▰ MDOT SHA has been developing Maryland's first statewide Pedestrian Safety Action Plan (PSAP), which applies a data-driven approach to identify, prioritize, and recommend strategies to address pedestrian and bicycle safety needs.

▰ MDOT MVA's Maryland Highway Safety Office (MHSO) expanded the *Be the Driver* campaign to include additional topics such as *Move Over* and *What to Do in a Roadside Emergency*. In response to the growing number of roadside fatalities, these campaigns focus on educating motorists on how to stay safe when they encounter an emergency while driving, as well as providing information on the expansion of the Move Over Law, which requires vehicles to move over or slow down for all vehicles with hazard lights on the side of the road beginning in October 2022.

▰ In fall 2021, MDOT MVA dispersed more than $13 million in federal and state highway safety grants to more than 90 organizations, agencies, and programs as part of a statewide focus to eliminate roadway fatalities and serious injuries from motor vehicle crashes.

▰ Work on the Bay Bridge automated lane closure system began in February 2020, and the system will be operational in winter 2022/2023. This project will improve safety when opening and closing lanes for two-way traffic operations on the bridge.

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

▰ Two 50-foot-deep berths at Seagirt Marine Terminal now allow the Port of Baltimore to accommodate two supersized ships simultaneously. The additional berth and neo-Panamax cranes are part of a $176 million investment by the state in partnership with Ports America Chesapeake (PAC) to provide greater capacity and efficiency in handling increases in container volumes.

▰ The project expanding Baltimore's Howard Street Tunnel broke ground in late 2021. This project will allow for double-stacked container rail cars to travel to and from the Port into the Midwest and South, clearing a longtime hurdle and giving the East Coast seamless double-stack capacity from Maine to Florida.

▰ Maryland committed $28 million in federal infrastructure funding to launch a study of a new Chesapeake Bay crossing and to examine traffic-calming measures in the 22-mile stretch US 50/301 between the Severn River Bridge and the US 50/301 split.

▰ While other U.S. ports were experiencing significant supply chain delays, Maryland's Port of Baltimore handled more than 60 "ad hoc" vessels diverted to Baltimore that were not on a regularly scheduled service call.

▰ In FY 2022, BWI Marshall Airport added airline service from new carriers, including Air Senegal, Play, Icelandair, and Avelo, as well as expanded service from existing carriers including Frontier, Spirit, and Southwest. JetBlue resumed service after a two-year, pandemic-related hiatus. As of June 2022, BWI Marshall Airport averages 259 daily departures to 86 nonstop destinations by 18 airlines.

▰ In 2021, MDOT continued with the construction of the Purple Line, a 16-mile light rail corridor that will provide a vital transit connection between Montgomery and Prince George's counties and drive economic activity across communities in the region.

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

▰ Of the 26 poor-rated MDOT SHA and MDTA bridges, eight are currently in the construction phase, and the remaining are in the design phase with construction funding either in place or pending to address their conditions. This is the lowest level of poor-rated bridges since tracking began and one of the lowest percentages of any state transportation agency in the nation.

▰ Currently, three bridges (two rated poor) are being replaced in the area of the Tradepoint Atlantic development. The improvements will foster economic growth and enhance mobility as the structures are designed to accommodate heavier loads leaving the developed site.

▰ Metro SubwayLink real-time data now allows riders to view live train locations and arrival predictions on Transit App and Google Maps. Additionally, real-time bus crowding information has been added to Transit App for all LocalLink, CityLink and Express BusLink services to give riders transparency and choice in the trip-planning process.

▰ The replacement of the 81-year-old Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge (US 301), began in 2020 and opened in fall 2022 ahead of schedule.

▰ In August 2022, MDOT MTA launched real-time location and predicted arrival information for its Light Rail trains. All MDOT MTA fixed-route services now offer up-to-the-minute information for passengers, fulfilling a commitment the agency made to riders in its strategic plan, *Rebuilding Better*, released in 2021.

▰ MDOT SHA's $89.3 million I-81 Phase 1 improvement project, which included widening and superstructure replacement of the I-81 dual bridges over the Potomac River in Washington County, Maryland, and Berkeley County, West Virginia, earned both a Maryland Quality Initiative (MdQI) Modal Award for Projects Over $5 Million and a Partnering Award for Projects Over $10 Million.

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

◢ In May 2022, MDOT MVA launched Maryland Mobile ID in Apple Wallet, allowing Maryland residents to add their driver license or identification card to their iPhone or Apple Watch. Maryland is the second state in the nation to provide this option.

◢ In November 2021, MDOT launched the expansion of the incenTrip application statewide as a congestion mitigation effort. The purpose of incenTrip is to reduce traffic congestion in the weekday peak periods by encouraging Maryland commuters and employers to increase the use of public transportation, ridesharing, walking, biking, teleworking, and alternative work schedules. Maryland commuters who register and use the application during their commute earn points that can be redeemed for cash rewards.

◢ MDOT MVA's Customer Connect replaced more than a dozen legacy systems with a single integrated portal, providing residents with one-stop digital access to a range of transactions, including online renewals of driver licenses and vehicle registrations, locating auto dealers, and uploading medical records for commercial drivers to support an individual's eligibility for disability plates and placards. The program received the American Association of Motor Vehicle Administrators (AAMVA) award for Innovative Use of Technology and the American Association of State Highway and Transportation Officials (AASHTO) Regional Award for Best Use of Technology & Innovation. MDOT MVA also received both regional and international recognition by AAMVA in the Customer Convenience category for its birth certificate printing program, which provides Maryland-born customers with a certified copy of their birth certificate as proof of identity to get their REAL ID at five branch offices.

◢ In 2022, MDOT SHA and the Federal Highway Administration (FHWA) announced the approval of the Record of Decision for the I-495 and I-270 Managed Lanes Study, marking the final milestone in the National Environmental Policy Act (NEPA) process for the Op Lanes Maryland program. This congestion relief program will benefit some of the country's worst bottlenecks of traffic. It is a historic effort to reduce congestion for millions of Maryland drivers by seeking input from the private sector to design, build, finance, operate, and maintain improvements on both highways.

GOAL: ENSURE ENVIRONMENTAL PROTECTION AND SENSITIVITY

◢ MDTA initiated and completed the Chesapeake Bay Crossing Study Tier 1 NEPA and FHWA approved the Bay Crossing Study Tier 1 combined Final Environmental Impact Statement and Record of Decision (FEIS/ROD) that identifies Corridor 7—the corridor containing the existing Bay Bridge—as the Selected Corridor Alternative.

◢ As part of the 2021 U.S. Infrastructure Investment and Jobs Act (IIJA), MDOT prepared the Maryland State Plan for National Electric Vehicle Infrastructure (NEVI) Formula Funding Deployment, describing how $57 million in federal funds will be allocated to electric vehicle (EV) charging infrastructure in Maryland. The NEVI Plan was approved by the Joint Office of Energy and Transportation in September 2022.

◢ In 2021, MDOT established the Urban Tree Program, providing grant funding to replace trees in communities where transportation construction projects impacted tree cover.

◢ In August 2022, the U.S. Army Corps of Engineers and MDOT signed a $4 billion agreement to use material dredged from Maryland's Port of Baltimore to restore the Mid-Chesapeake Bay ecosystem.

◢ Between July 2021 and July 2022, EV ownership in Maryland increased by more than 46% from 30,080 to 52,966 registrations.

◢ MDOT TSO received a 2022 MdQI Innovation Award for its $3.1 million Smart Ponds project, which installed monitoring and adaptive control features at stormwater ponds to increase retention time and water quality in Aberdeen, Hagerstown, and Fruitland.

◢ In October 2022, MDOT MPA and MDOT SHA were awarded a combined $312,000 through the FHWA Climate Challenge. The grants fund research in ways to cut greenhouse gas (GHG) emissions in transportation-related projects.

GOAL: PROMOTE FISCAL RESPONSIBILITY

◢ In 2021, the MDOT SHA Coordinated Highways Action Response Team (CHART) incident management program saved motorists $1.9 billion in user costs through fuel savings and crash reductions, and helped reduce delays by 39.7 million vehicle-hours.

◢ The MDTA was able to decrease the initial $1 billion price tag of the Nice/Middleton Bridge replacement by more than $300 million by taking a practical design approach to the new bridge, which opened in October 2022.

◢ The MDTA's $188.6 million replacement of the steel bridge on I-895 near the Baltimore Harbor Tunnel captured two awards—an MdQI Modal Award for Projects Over $5 Million and MdQI Project of the Year Over $5 Million. The new I-895 bridge structure replaced the MDTA's only poor-rated bridge in its inventory. This challenging project intersected with 23 railroad tracks, three city streets, three interstate ramps, and I-95, yet it was completed under budget and ahead of schedule.

◢ In fall 2021, MDOT MTA secured a $22 million dollar Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant to advance improvements to the area currently served by the CityLink Blue and Orange lines to provide faster, more reliable transit and improve pedestrian safety. These investments include dedicated bus lanes and transit signal priority.

◢ In summer 2022, MDOT MTA secured a $6 million RAISE grant for multimodal transit station access improvements at Baltimore Penn Station.

◢ MDOT MPA received a FY 2021 Consolidated Rail Infrastructure and Safety Improvements (CRISI) program grant for $15.7 million from the Federal Railroad Administration (FRA) to help build four new working rail tracks and two crane rail beams at the Seagirt Marine Terminal at Maryland's Port of Baltimore. The project will improve the intermodal rail yard and complement the Howard Street Tunnel allowing double-stacked container trains.

GOAL: PROVIDE BETTER TRANSPORTATION CHOICES AND CONNECTIONS

◢ In 2022, Commuter Choice Maryland expanded the Maryland Commuter Tax Credit, a program that gives tax credits to Maryland employers who offer qualified commuter benefits, such as the Guaranteed Ride Home program, vanpool, transit, and cash in lieu of parking to telework, carpool, or utilize active transportation and multimodal commuter last-mile connections.

◢ The $27 million North Avenue Rising Project was completed in summer 2022, which included 5.5 miles of dedicated bus lanes, bus stop improvements, intersection improvements, and bicycle and pedestrian safety projects.

◢ In the first three quarters of FY 2022, 15.5 million passengers flew through BWI Marshall Airport. This is an 89% increase over the same period of FY 2021, indicating a strong rebound in travel demand. Total passenger levels are still below pre-COVID FY 2019 levels, however peak period activity during holiday travel is within a few percent of FY 2018 and FY 2019 levels. As of June 2022, BWI Marshall Airport averages 259 daily departures to 86 nonstop destinations by 18 airlines.

◢ MDOT MTA ridership, while not back to pre-pandemic levels, has increased steadily after falling sharply during the height of the pandemic, with local bus ridership reaching 70% of 2019 levels in March 2022.

MDOT works daily to ensure that the Department delivers safe, sustainable, intelligent, exceptional, and inclusive transportation solutions in order to connect our customers to life's opportunities. MDOT is actively planning, investing in, implementing, and evaluating the state's transportation system to ensure that all efforts and available funds are directed toward creating the most efficient, reliable, fiscally prudent, and safe transportation options. This allows all Maryland communities to access economic opportunities and major regional destinations. The state's strategic approach comprises three documents, which are presented through the State Report on Transportation (SRT):

▰ The Maryland Transportation Plan (MTP) sets a long-range vision for the state's transportation system—this plan was updated in 2019;

▰ The Consolidated Transportation Program (CTP) is updated annually and provides a six-year budget for the state's transportation projects; and

▰ The Attainment Report on Transportation System Performance (AR) evaluates the performance of the state's transportation system and reports on progress toward reaching the seven key goals listed in the MTP. The performance measures in the AR report were updated in 2019.

By continuously collecting and evaluating data, MDOT is positioned to identify any discrepancies or funding shortfalls in order to improve the transportation system, products, and services for all Marylanders.

For more information on the MTP, please visit: **www.mdot.maryland.gov/MTP**

For more information on the FY 2023-FY 2028 CTP, please visit: **www.CTP.maryland.gov**

For more information on the AR, please visit: **www.mdot.maryland.gov/AR**

Maryland remains steadfast in pursuing its commitment to create a transportation system that works for all Marylanders and achieving its goals and objectives to realize the state's vision for a well-connected and safe transportation network. MDOT uses more than 100 performance measures and meticulously tracks data to assess progress toward achieving the Department's goals and objectives, which correspond to the seven goals in the MTP. Performance measures in the AR are updated every five years with an AR Advisory Committee as part of the MTP update. The MTP was updated in 2019 and charts a path to realize Maryland's long-range transportation vision, mission, and goals.

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

Maryland's resolve to continue investing in clean energy, building out the multimodal network, and making sure that all assets remain in a state of good repair have enabled the state to advance its transportation goals and objectives. With increased revenues, Maryland is poised to leverage its resources to make significant gains in creating a safe, equitable, and accessible transportation system that meets Marylanders' travel needs.

In the FY 2023-FY 2028 CTP, Maryland will invest a record $20.5 billion on transportation projects across the state, which is $2.8 billion more than the previous FY 2022-FY 2027 CTP of $17.7 billion. The investment will advance innovation, replace and repair aging infrastructure, expand transit opportunities, assist Maryland's economic recovery, and preserve and expand the state's transportation network. The additional $2.8 billion in funding includes $1.7 billion in additional federal formula funds from the 2021 U.S. Infrastructure Investment and Jobs Act (IIJA).

In November 2021, IIJA was enacted. It includes $567 billion nationally for surface transportation through Federal Fiscal Year 2027. This historic funding re-authorization will significantly bolster Maryland's transportation resources and enable the state to supplement the Transportation Trust Fund (TTF) budget shortfall from FY 2021. IIJA will infuse additional funding for important infrastructure, safety, resilience, and sustainable transportation projects. During the next five years, Maryland will receive more than $4 billion for highway aid, $409 million for bridge replacement and repairs, and $1.7 billion to improve public transit. Maryland also will receive $158 million for airports and $63 million for electric vehicle (EV) charging stations. IIJA includes a significant amount of funding for discretionary competitive grants that have the potential to further supplement the state's transportation funding, helping Marylanders throughout the state.

MDOT TOTAL CAPITAL PROGRAM LEVELS (BILLIONS)*

Fiscal Year	CTP Total Capital Program	CTP Total Capital Program Level Adjusted for Inflation**
12-17	$9.9	$12.3
13-18	$10.1	$12.2
14-19	$15.6	$18.4
15-20	$15.8	$18.2
16-21	$15.7	$17.6
17-22	$14.8	$15.9
18-23	$14.8	$15.5
19-24	$16.4	$16.9
20-25	$16.3	$16.6
21-26	$15.2	$15.2
22-27	$17.7	$18.1
23-28	$20.5	$20.5
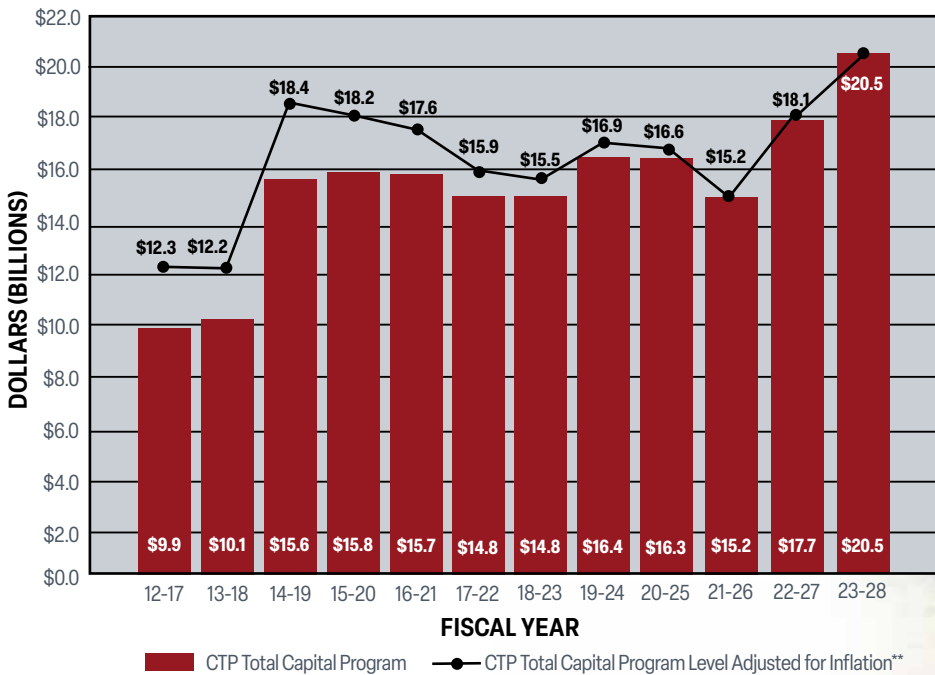
*Index numbers have changed to reflect use of the Construction Cost Index.

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

TRANSPORTATION MOBILITY AND ACCESSIBILITY

Mobility is defined by the ease of traveling along the transportation network, while accessibility describes the ease of reaching desired destinations or activities. Maryland faces a growing population whose transportation patterns are shifting. According to the US Census, Maryland's population grew by 7% between 2010 and 2020, with a current population of more than six million people. By 2045, Maryland's population is expected to reach almost seven million—an increase of more than 11% since 2020. The increase in population is likely to increase Vehicle Miles Traveled (VMT), though the share of commute trips made by driving alone fell nearly 12 percentage points between 2019 and 2021 due to the COVID-19 pandemic. Public transit also plummeted from a share of 8% of commute trips in 2019 to just 3% in 2021. These declines are complemented by the increase in working remotely: from just over 5% in 2019 to 24% in 2021 according to the US Census Bureau.

VMT decreased by approximately 16% in 2020 due to the COVID-19 pandemic, compared to 2019, from 60.1 billion to 50.6 billion. Truck VMT similarly experienced a drop from 2019 to 2020, dropping to 1.46 million in 2020 from 1.77 million in 2019. In 2021, overall VMT recovered by 12%, but the estimated VMT for 2022 is anticipated to reach 58 billion, remaining below the 2019 benchmark. The shift to remote work and the high costs of gas have kept VMT levels lower than before the pandemic. The retail price of gasoline hit more than $5 in the U.S. in June 2022 for the first time ever.

Despite these drops in VMT and high gasoline prices, congestion still persists on Maryland roadways. In 2021, ridership on the transit system started to recover but remained below pre-COVID-19 levels. Congestion for all vehicles is typically around 240 million hours, costing travelers more than $5 billion in time and fuel and releasing over 800K pounds of CO_2. Trucks in Maryland typically experience approximately seven million hours of delay contributing to $350 million in the value of wasted time and fuel.

While MDOT anticipates that VMT will rebound back to 2019 levels in the next two-to-five years, there remains great uncertainty surrounding the exact timeline and speed of the recovery. Planning for growth amidst this uncertainty presents challenges, but MDOT remains committed to maintaining a resilient and adaptive transportation network to suit the needs of its population. To make these choices, MDOT will consider mobility and accessibility within the transportation network.

MDOT is advancing mobility and accessibility of its transportation network by utilizing several strategies. One such initiative is using the Transportation System Management and Operations (TSMO) framework to maximize the service potential and manage roadways as part of a "system," focusing on operational improvements that do not require traditional capacity improvements, such as additional lanes, interchanges, and routes. Systems management requires deployment of sensors, such as cameras, traffic sensors to monitor volume, speed, and density, as well as communication infrastructure (e.g., fiber or 5G), to assess how traffic is moving in real time. That data is then used to actively manage technologies such as ramp meters, dynamic speed advisories, part-time dynamic shoulder use, reversible lanes, and much more to improve both the flow of traffic and the safety of those on the roadway. One TSMO project involves using shoulder and dynamic lane controls to create a new lane of traffic during peak hours for I-695 (Baltimore Beltway) between I-70 and MD 43 (White Marsh Boulevard).

The I-695 TSMO project is one of more than 20 major capital improvement projects that were considered for National Highway Freight Program (NHFP) funding. Another project that was recommended for funding is the MD 4 at Suitland Parkway Interchange Improvement project. The purpose of this project is to construct a new diamond interchange to accommodate increased traffic volumes in the area.

Ensuring mobility and accessibility also includes transportation infrastructure maintenance. As part of its mission to ensure a safe and accessible transportation network, MDOT engages in constant efforts to keep its transportation system—including its bridges and roads—in good repair. In 2022, only 1% of Maryland's bridges (26 bridges out of 2,890) are in poor condition, according to MDOT SHA; 92% of the roadways in the state have acceptable pavement condition after MDOT SHA resurfaced 4.7% of the pavement network in 2021, up from the 3.8% reported in 2020.

As more Maryland residents and businesses use EVs for mobility, MDOT is committed to making sure that the state is ready for the increase in EVs on the road. Between July 2021 and July 2022, EV ownership in Maryland increased by more than 46% from 30,080 to 52,966 registrations. To continue to meet the needs of Maryland drivers, the state is working to deploy a robust EV supply equipment (EVSE) infrastructure of more than 1,200 charging stations and 3,300 charging outlets. MDOT also prepared the Maryland State Plan for National Electric Vehicle Infrastructure (NEVI) Formula Funding Deployment describing how $57 million in federal funds will be allocated to EV charging infrastructure in Maryland, which has been approved by the Federal Highway Administration (FHWA). This charging infrastructure will be placed near the successfully nominated 23 EV alternative fuel corridors (EV-AFCs) under the FHWA's AFC solicitation. MDOT Transportation Business Units (TBUs) are working on electrifying their own internal fleets, with many replacing light duty fleet vehicles with EV models. MDOT MTA is installing charging infrastructure in preparation for introducing zero-emission buses (ZEBs) into the MDOT MTA transit bus fleet. All of these efforts will increase mobility and accessibility of EVs for Maryland residents, businesses, public agencies, and other organizations.

An advancement that has already embedded in the state's transportation infrastructure is new identification technology, which is being used now for passengers at Maryland's Port of Baltimore and at BWI Marshall Airport. At Maryland's Port of Baltimore, facial recognition technology is being used to verify disembarking passengers' identity in partnership with the MDOT MPA and Carnival Cruise Line. At BWI Marshall Airport and Reagan National Airport, Maryland residents can carry a digital version of their driver license or identification card on their phone, then use it to get through security checkpoints. Maryland is the second state to offer this option, joining with Arizona. The technology is available only for passengers at TSA PreCheck® lanes, but the agency is working to expand the capability to other passengers.

BALANCING THE MULTIMODAL APPROACH AND PROVIDING TRANSPORTATION OPTIONS

Maryland is committed to investing resources in projects and programs that will strengthen its multimodal transportation network and support seamless trip planning and travel for all Marylanders. The MTP and the Maryland Bicycle and Pedestrian Master Plan are updated in tandem every five years and have aligned objectives that support multimodal, active, and alternative transportation. Together, these will bolster the offerings of improved facilities for all transportation users—pedestrians, bicyclists, and motorists—to reduce reliance on single-occupancy vehicle (SOV) travel and support transit, biking, walking, ridesharing, and teleworking, along with alternative work hours. In addition to creating safe and accessible multimodal options, sustainable transportation options also help to reduce congestion on roadways, decrease harmful emissions, and improve public health.

In 2021, MDOT continued with the construction of the Purple Line, a 16-mile light rail corridor that will provide a vital transit connection between Montgomery and Prince George's counties and drive economic activity across communities in the region. MDOT prepared the NEVI Plan and outlined how the state plans to spend $57 million in federal funding to install 1,200 EV charging stations and 3,300 charging outlets, many of which will be located at major transit hubs. MDOT MTA is planning facility upgrades and installation of charging infrastructure in preparation for introducing ZEBs into the MDOT MTA transit bus fleet.

Repairing sidewalks and building new bike lanes and trails is a vital component of realizing Maryland's vision to increase the number of people who walk and bike for exercise, recreation, and transportation. In September 2021, MDOT announced $16.8 million in grants to advance 42 bicycle, trail, and pedestrian projects across Maryland. The financial resources are a combination of federal funding through the Transportation Alternatives Program (TAP), Recreational Trails Program (RTP), and state funding through the MDOT Kim Lamphier Bikeways Network Program. This funding will support a variety of vital projects including traffic calming measures, trail maintenance, improving sidewalks and crossings near schools, as well as many other treatments that will make biking and walking more pleasant, better connected, and safer for our most vulnerable road users.

To further leverage investments in the multimodal transportation network, MDOT uses a robust program called Commuter Choice Maryland, which uses Transportation Demand Management (TDM) strategies and principles to change travel behavior and shift SOV trips to sustainable modes such as biking, walking, transit, ridesharing, and teleworking. Employers who adopt TDM principles and offer certain commuter benefits are eligible to receive the Maryland Commuter Tax Credit (up to $100 per participating employee per month).

BIKING AND WALKING IN MARYLAND

The 2040 Maryland Bicycle and Pedestrian Master Plan, which was updated in 2019, sets a bold vision and ambitious goals to improve access and safety for active transportation modes. As more Marylanders start to bike and walk for recreation, exercise, and transportation, the implementation of this plan will play a critical role in leveraging funding and partnerships to achieve the state's objective of creating an accessible and multimodal transportation network. In 2022, MDOT TSO and MDOT SHA completed a statewide bicycle level of traffic stress (LTS) analysis. The LTS analysis evaluates roadway speeds, traffic volumes, and the quality of bicycle facilities to determine how safe bicycle riders feel when biking the roadway. This evaluation will be used to better gauge planned roadway improvements to enable more people to bike for shorter trips.

MDOT SHA has developed a Context Driven Guide that considers factors such as safety, land use, environmental issues, culture and community livability to plan, design, construct, and operate facilities that are safe for pedestrians and bicyclists ranging from rural to urban core landscapes. The guide uses best practices in roadway treatments to shape development of infrastructure to enhance access and mobility, using treatments that will reduce crashes when applied appropriately. Since 2019, MDOT SHA has implemented almost 300 safety improvements using this methodology. Further, MDOT SHA has been developing Maryland's first statewide Pedestrian Safety Action Plan (PSAP), which applies a data-driven approach to identify, prioritize, and recommend strategies to address pedestrian and bicycle safety needs. MDOT SHA's Context Driven framework also includes case studies, education and outreach, and a web portal. During the next several years, MDOT SHA will focus on advancing these components.

MDOT also is committed to achieving the Vision Zero goal of reaching zero roadway fatalities and serious injuries. Traffic fatalities in Maryland decreased from 573 in 2020 to 563 in 2021; however, increased speeding accounts for almost 9,100 crashes and more than 3,900 injuries each year in Maryland. As no life lost is acceptable, MDOT strives to do what it can to eliminate traffic fatalities, working with our federal, state, and local partners daily to evaluate and implement measures to reduce the vulnerability of all users of the transportation system. With federal and state investments, progress is being made on a variety of fronts, and Maryland will continue to lead the way in building a safe and accessible transportation network.

AIR TRAVEL IN MARYLAND

Maryland has 36 public-use airports, the largest being BWI Marshall Airport, which continues to grow. During the last five years (2016-2021), air cargo processed at BWI Marshall Airport has more than doubled. The 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. While passenger growth during the past five years has been dampened by the COVID-19 pandemic, BWI Marshall Airport has seen significant recovery. In 2021, the airport rebounded to 70% of its enplanements compared to 2019, higher than Washington Dulles International (61%) and Ronald Reagan Washington National (58%) airports. Furthermore, in the first three quarters of FY 2022, 15.5 million passengers flew through BWI Marshall Airport. This is an 89% increase over the same period of FY 2021 indicating a strong rebound in travel demand. Total passenger levels are still below pre-COVID FY 2019 levels. However, peak period activity during holiday travel is within a few percentage points of FY 2018 and FY 2019 levels. Additionally, BWI Marshall Airport has remained the busiest airport in the Baltimore-Washington region with a 36% market share, ahead of both Dulles and Reagan National airports.

Maintaining this market share can be explained, in part, by new and returning airline service at BWI Marshall Airport. JetBlue Airways resumed service at BWI Marshall Airport in 2022 after a two-year, pandemic-related hiatus, with three-times daily nonstop flights between BWI Marshall Airport and Boston Logan International Airport. Three new airlines began servicing BWI Marshall Airport in 2022 including Avelo Airlines with flights to New Haven, Connecticut, Orlando, Florida, and Wilmington, North Carolina. Play, a low-cost Icelandic airline, and Icelandair also began new international service to Reykjavik.

The passenger recovery can be explained by several factors. MDOT MAA continues to focus on improving the customer travel experience and route offerings through strategic investment in airport facilities, expanding and modernizing amenities and services, and developing a dedicated and efficient workforce. Ensuring BWI Marshall Airport remains the "Easy Come. Easy Go." airport of choice for the region requires continued collaboration with partner and prospective airlines, local municipalities, sister agencies, and the federal government to provide resilient and fiscally responsible capital infrastructure.

This commitment to customer experience and airport efficiency has been reflected in recent awards. For example, a $1.2 million project to replace two culverts between the main parking lot and overflow lot at BWI Marshall Airport received the Maryland Quality Initiative (MdQI) Modal Award for Projects Under $5 Million. MDOT MAA also captured the MdQI Modal Award for Projects Over $5 Million for its $6.6 million project at BWI Marshall Airport involving the relocation of a portion of Taxiway F, and included the realignment of Taxiway T2.

MARYLAND'S PORT OF BALTIMORE

The Helen Delich Bentley Port of Baltimore generates about 15,300 direct jobs, with almost 140,000 jobs overall linked to Port activities. The Port ranks 1st among the nation's ports for volume of autos and light trucks, roll on/roll off heavy farm and construction machinery, and imported gypsum. It ranks 11th among major U.S. ports for foreign cargo handled and 9th for total foreign cargo value. Overall, it is one of the most diverse cargo ports in the U.S. and a top port in terms of total cargo tonnage and overall, in dollar value of cargo.

In recognition of its work, MDOT MPA has won awards in the past year. The TBU won a planning award for its development of a digital database to track conditions of its terminal lots to predict and plan rehabilitation and repair efforts. MDOT MPA also captured an MdQI Modal Award for Projects Under $5 Million for the demolition and replacement of the vehicle entrance/exit gate at the Dundalk Marine Terminal. In December 2022, the Port received a top U.S. Coast Guard security assessment for the 14th straight year.

The Port received funding towards increased capacity in recent years. More than $15 million in funds from the Federal Railroad Administration (FRA) will help build four new working rail tracks and two crane rail beams at the Seagirt Marine Terminal at Maryland's Port of Baltimore. This modernization project is expected to improve the intermodal rail yard and complement the work on the Howard Street Tunnel to allow double-stacked container trains. That project received $125 million in federal funding and was underway in November 2021. It is scheduled for completion in 2025, which is expected to increase the Port's business by about 160,000 containers annually. It also will generate about 6,550 construction jobs and an additional 7,300 jobs from the increased business. The Port also received funding from FRA for its Rail Capacity Modernization Project, which will build four new rail tracks and two crane beams within the Seagirt Marine Terminal. This project will allow for the easy transfer of shipper containers by truck or rail and is expected to be completed in 2025.

New partnerships and businesses highlight the expansion and importance of the Port for the state and region. The Port is partnering with an intermodal logistics company, RoadOne, to provide drayage services using battery-electric trucks from Nikola in a pilot program to move freight from the Port to the Ikea distribution center in Perryville, Maryland. The Port has expanded its cargo in and out of the Port with the introduction of the Mediterranean Shipping Company Santana service, which now will include port calls in Baltimore and Boston, as well as Da Chan Bay Port in China. The first sailing under the new schedule of this international container service left the Port of Haiphong in Vietnam onboard the MSC Ellen in July. Finally, a new shipping carrier focused on e-commerce, ZIM Shipping Line, has begun operating at the Port. The Israel-based company will begin service from China and Southeast Asia to the U.S. East Coast with stops at the Port every other week. The service may increase frequency to every week in the near future. This service will have the fastest transit time between Asia and Baltimore and products will go directly from the Port to freight facilities in Maryland and other states.

Goal Ensure a Safe, Secure, and Resilient Transportation System

Maintaining the safety and security of the transportation system is a critical mission for MDOT

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

Working toward achieving a safe, secure, and resilient transportation system is one of MDOT's top priorities. The Department's employees work tirelessly to ensure the safe movement of people and goods. MDOT and its Transportation Business Units (TBUs) continue to focus on important issues like reducing speeds and traffic fatalities on Maryland roadways, ensuring that personal and other data remain protected as state services move to online platforms, and repair and retrofit transportation infrastructure to mitigate potential impacts from natural or man-made disasters.

All TBUs are working together to reduce the number of lives lost on Maryland roadways. Traffic fatalities in Maryland have decreased from 573 in 2020 to 563 in 2021. Further, MDOT SHA has been developing Maryland's first statewide Pedestrian Safety Action Plan (PSAP), which applies a data-driven approach to identify, prioritize, and recommend strategies to address pedestrian and bicycle safety needs.

Speeding accounts for almost 9,400 crashes and more than 4,200 injuries each year in Maryland. To raise awareness of safe driving practices, MDOT MVA's Maryland Highway Safety Office (MHSO) expanded the *Be the Driver* campaign to include additional topics such as *Move Over* and *What to Do in a Roadside Emergency*. In response to the growing number of roadside fatalities, these campaigns focus on educating motorists on how to stay safe when they encounter an emergency while driving, as well as providing information on the expansion of the Move Over Law, which requires vehicles to move over or slow down for all vehicles with hazard lights on the side of the road since October 2022. Additional resources and tips for safe driving behavior are listed on Maryland's Zero Deaths website. These include practical advisories and accompanying statistics for distracted driving, impaired driving, pedestrian and bicycle safety, wearing a seatbelt, speeding, and child passenger safety.

Considering high speeds on the roadways, it is particularly important to maintain the highway system in a state of good repair and have a reliable response effort in place to clear incidents. MDOT SHA's Coordinated Highways Action Response Team (CHART) and the MDTA's Vehicle Recovery Units respond to crashes and help stranded motorists. In 2021, CHART responded to 65,839 incidents and disabled vehicles events on Maryland roads. MDTA responded to 6,187 disabled vehicle events and a total of 29,936 incidents on MDTA roads in 2021. The Statewide Operations Center (SOC) in Hanover, which was renovated in 2021, provides 24 hours a day, seven days a week, monitoring of roadways and serves as a comprehensive command and control facility.

Ensuring work zone safety and mobility is another critical component of Maryland's strategy to curb traffic fatalities and serious injuries. MDOT SHA sets policies, technical guidelines, and trainings for interpreting and implementing federal and state safety measures to protect employees on the job.

The State Freight Plan, State Rail Plan, and Rail Grade Crossing State Action Plan include strategies that MDOT is implementing towards improving motorist, truck, and rail safety statewide. Outreach and partnership with local jurisdictions on issues like truck parking are key to improving safety while supporting economic development and supply chain resiliency statewide.

In addition to a coordinated effort to provide a safe and secure transportation system, Maryland continues to implement technology upgrades that are enabling residents to access available services online more easily. In December 2021, MDOT MVA completed its information technology (IT) modernization known as Customer Connect, which enables customers to connect their driver and vehicle accounts in one place. Similarly, a new queueing and online appointment portal called MDOT MVA Appointment Scheduler allows customers to select from a list of services and receive prompt attention at the designated appointment time, which has reduced wait times significantly and enhanced the customer experience.

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

FACING CHALLENGES

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

Legend:
- 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 transit passenger fatalities

TARGET: ≤ 0.858 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

2020 data have been revised from previous report.

ANNUAL NUMBER OF PERSONAL INJURIES*
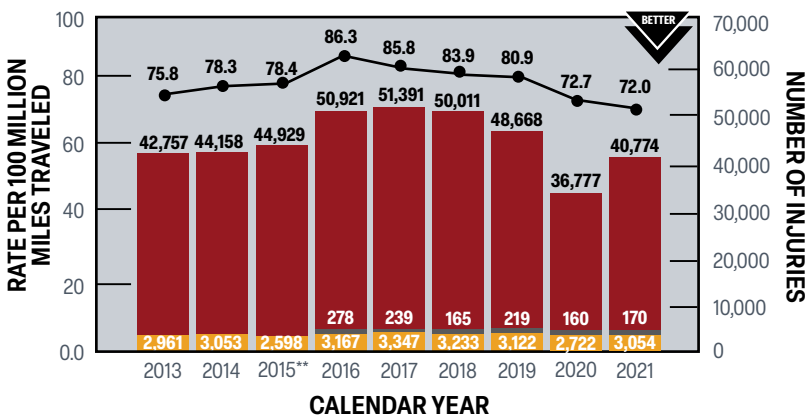
Legend:
- Annual number of personal injuries on all roads in Maryland
- Personal injury rate per 100 million miles traveled on all roads in Maryland
- Annual number of serious personal injuries on all roads in Maryland
- Annual number of transit passenger personal injuries

TARGET*:** ≤ 2,537.8 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

2019 and 2020 data have 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?

- Overall fatalities in Maryland decreased 1.7% while the fatality rate decreased by 12.3%, despite a 12% increase in Vehicle Miles Traveled (VMT) between 2020 and 2021; 2021 VMT was still down by nearly 6% compared to pre-pandemic levels in 2019; trends in Maryland and nationally have demonstrated anomalous outcomes in relation to VMT and fatality trends

- With drivers returning to Maryland roads, increases in overall crashes, injuries, and serious injuries occurred in 2021 compared to 2020, but remain down compared to pre-pandemic years such as 2019 and earlier years when injury crashes were generally trending downward

- While many fatalities and crashes occur on state-maintained roadways, a significant number of crashes happen on locally maintained roadways; achieving Vision Zero in Maryland means achieving zero fatalities and serious injuries in each jurisdiction; currently, Maryland has 12 local safety plans implemented, with another six under development

- Based on observation studies, 2022 seat belt use rates increased to 92.7%, a 1.3% increase from 2021; a higher rate of seat belt usage may have contributed to the slight decline in fatalities seen in the last year; preliminary 2022 fatalities indicate we are on par with the pace of 2021 fatalities

- Research from the National Highway Traffic Safety Administration (NHTSA) confirmed that driving patterns and behaviors changed significantly during reduced travel in 2020 and 2021, and many of those who remained on the road engaged in more risky behavior

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- The 2021-2025 Maryland Strategic Highway Safety Plan (SHSP) builds on the experience, efforts, and successes of previous SHSPs and utilizes a data-driven approach to build effective strategies, create action steps, and establish performance measures to help achieve our goal of zero roadway deaths

- Maryland uses a multi-disciplinary approach to crash prevention and severity mitigation, including strategies that address roadway design, driving behaviors, technology, and policies by working with our wide network of partners across the state; partners who carry out this work include, but are not limited to, academic institutions and staff, agricultural professionals, engineers, first responders, government officials, law enforcement, policymakers, public health professionals, and traffic planners

- In 2022, MDOT MTA finalized their Safety Management System (SMS) transition plan and have begun an organization wide transition; SMS is a top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls, it includes systematic procedures, practices, and policies for the management of safety risk

NUMBER OF BICYCLE FATALITIES AND INJURIES

BETTER

Left axis: NUMBER OF BICYCLE INJURIES (0–800)
Right axis: NUMBER OF BICYCLE FATALITIES (0–16)

Year	Injuries	Serious injuries	Fatalities
2013	556	52	7
2014	639	71	5
2015	682	51	11
2016	681	65	16
2017	726	86	11
2018	597	59	6
2019	687	80	10
2020	582	68	15
2021	587	79	6

CALENDAR YEAR

- ■ 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: ≤ 9.0 bicycle fatalities per year (based on a rolling five-year average) by 12/31/2022, ≤ 65.7 serious bicycle injuries per year by 12/31/2022 (2020-2024 mid-year average target)

NUMBER OF PEDESTRIAN FATALITIES AND INJURIES*

BETTER

Left axis: NUMBER OF PEDESTRIAN INJURIES (0–3,500)
Right axis: NUMBER OF PEDESTRIAN FATALITIES (0–150)

Year	Injuries	Serious injuries	Fatalities
2013	2,343	344	110
2014	2,545	361	102
2015	2,831	321	99
2016	3,203	421	107
2017	3,242	477	111
2018	3,062	468	130
2019	2,843	426	124
2020	2,099	360	131
2021	2,278	414	126

CALENDAR YEAR

- ■ 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: ≤ 11.7 pedestrian fatalities per year by 12/31/2022 (2020-2024 mid-year average target), ≤ 385.6 pedestrian serious injuries per year by 12/31/2022 (2020-2024 mid-year average target)

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

WHY DID PERFORMANCE CHANGE?

▌ Pedestrian fatalities declined by 3.8% though non-motorist deaths represent nearly one in four of all traffic fatalities, and the most recent five-year average (2017-2021) had 17% more fatalities than the previous five-year period (2012-2016)

▌ Pedestrian serious injuries increased by 15% in 2021 compared to 2020, and the most recent five-year average (2017-2021) had 21% more serious injuries than the previous five-year period (2012-2016)

▌ Bicyclist fatalities declined 60% with six fatalities in 2021 compared to 15 in 2020, though serious injuries increased by 16% and the most recent five-year average (2017-2021) had 21% more serious injuries than the previous five-year period (2012-2016)

▌ Mirroring national trends, Maryland has experienced steady increases in fatalities and serious injuries in its most vulnerable road users—non-motorists (pedestrians and bicyclists)

▌ Throughout the pandemic, more people chose, or were forced, to walk or bike more than in previous years, which could be contributing to a shift in exposure and risk to non-motorists

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT SHA has been developing Maryland's first statewide PSAP, which applies a data-driven approach to identify, prioritize, and recommend strategies to address pedestrian and bicycle safety needs

▌ MDOT monitors these trends and works diligently to prevent non-motorist injuries and fatalities by implementing the strategies in the SHSP Pedestrians and Bicyclists Emphasis Area; these strategies cover topic areas including data, enforcement, infrastructure, legislation and policy, outreach, and vehicle engineering and technology
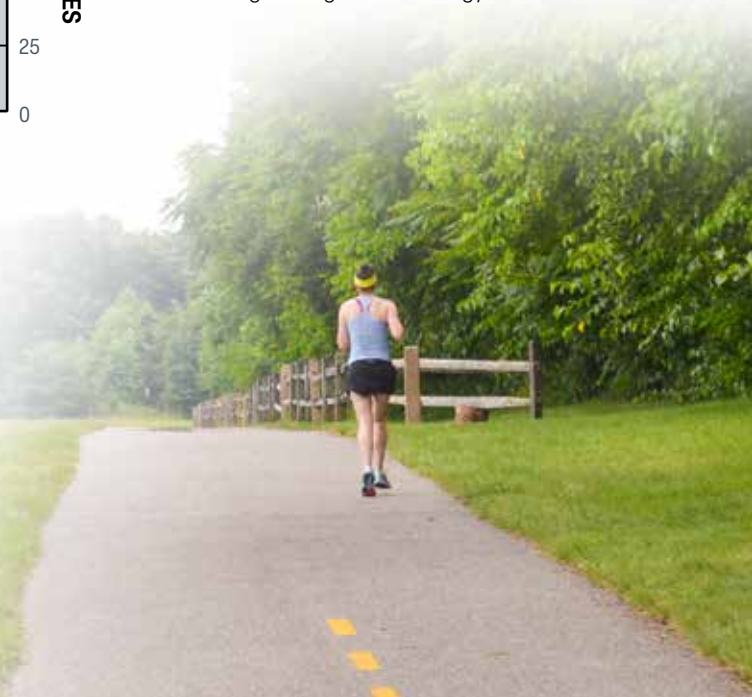
OBJECTIVE: Provide for the secure movement of people, goods, and data

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. MDOT MPA, along with its partners, began using facial recognition technology for disembarking passengers at the Port of Baltimore as it expands its cruise operations. In 2021, MDOT SHA completed the $5.6 million renovation and reimagination of its State Operations Center (SOC), which allows for more efficient responses to safety threats within the transportation system. Additionally, as a result of the COVID-19 pandemic, MDOT MVA permanently moved to an appointment-only operation and expanded online services, including an entire revamp to their website.

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

MAKING PROGRESS

Transportation agencies primarily track safety statistics such as fatalities and serious injuries. However, another vital component of safety is the perception of safety from crime. Perception of safety 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 perception of safety is imperative because people may avoid trips that they do not perceive to be safe, which could result in missing school, medical appointments, or work. Examples of influences on perception of safety include lighting, trash, proximity to people, and graffiti. Perception of safety is just as important in providing access to the transportation system through infrastructure, such as crosswalks and sidewalks. Improving the perception of safety on the Maryland transportation system requires the coordination of several public agencies, including but not limited to the many TBUs and offices throughout MDOT.

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

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

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

MDOT SURVEY QUESTION

I FEEL SAFE ON THE MARYLAND TRANSPORTATION SYSTEM

22%	Strongly Agree
62%	Agree
6%	Disagree
2%	Strongly Disagree
8%	Don't Know/Can't Evaluate
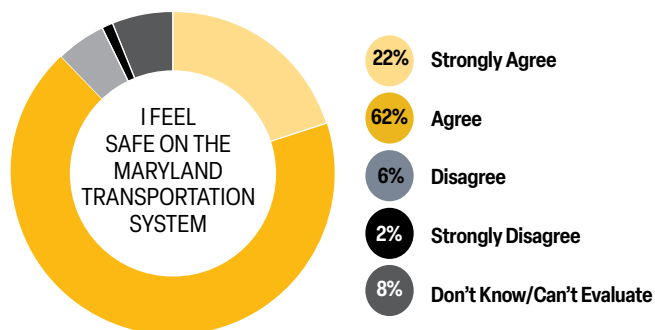
* The survey data reported is 2020 Survey data; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2021 survey data will be published in the 2023 Attainment Report.

PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES

ON TRACK

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.

BETTER ▼

CALENDAR YEAR	2015	2016	2017	2018	2019	2020	2021*	2022	TARGET
PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES									
Local Bus	1.43	1.54	1.54	1.44	1.76	1.50	0.07	0.07	**1.50**
Light Rail	0.14	0.24	0.02	0.03	0.37	0.03	0.01	0.01	**0.25**
Baltimore Metro	0.00	0.06	0.06	0.02	0.01	0.01	0.02	0.02	**0.06**
Paratransit/Taxi Access	0.79	1.04	1.04	0.77	1.32	1.10	0.02	0.02	**1.00**

2021 data have 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

- MDOT ensures all necessary personnel receive emergency preparedness training through the National Incident Management System (NIMS) and the Incident Command System (ICS)

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- Organization-wide implementation of SMS processes and policies, including mandatory training for all MDOT MTA staff on SMS principles; SMS is a top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls; it includes systematic procedures, practices, and policies for the management of safety risk

- 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 tracking performance measures actively

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 several TBU Operations Centers track all incidents and dispatch emergency responders to deal with the situation. The 2021 update of the MDOT SHA SOC provided a technology refresh and physical reconfiguration to meet next-generation Transportation Systems Management and Operations (TSMO) requirements, making responses quicker and more efficient.

MDOT and its employees maintain all essential services and manage 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 2.8 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

FACING CHALLENGES
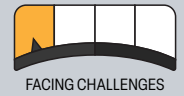
Inevitably, even the best designed transportation system experiences delays due to weather. Maryland experiences snow and ice in the winter that requires a comprehensive response to clear roadways. MDTA, MDOT MAA, and MDOT SHA include operations teams that respond to snow and ice events. The goal of 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.

[Bar chart: HOURS vs FISCAL YEAR]
2015: 3.17
2016: 1.28
2017: 1.64
2018: 1.93
2019: 1.67
2020: 0.78
2021: 1.53
2022: 5.43
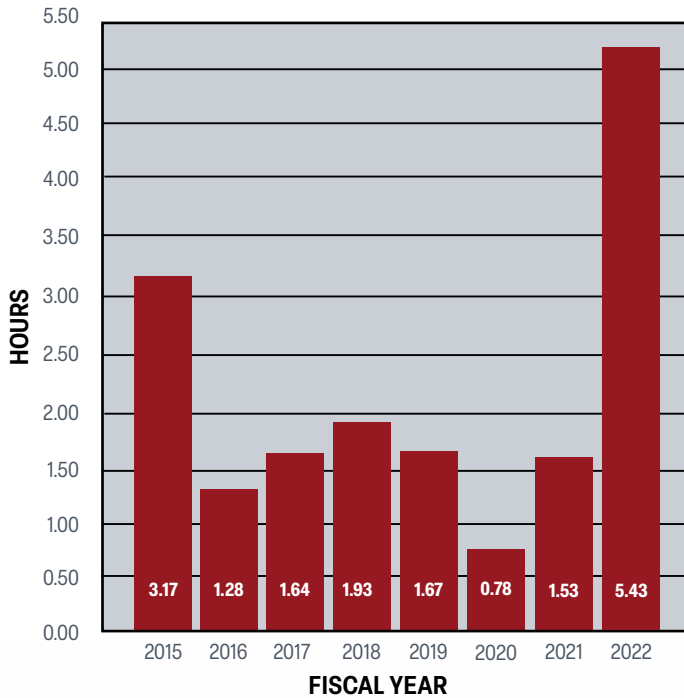
TARGET: 4 hours or fewer to regain bare pavement

WHY DID PERFORMANCE CHANGE?

- In 2022, MDOT SHA regained bare pavement in approximately 5.5 hours, which is higher than the five-year average, and higher than the target of four hours
- With limited internal and contract staffing in some areas of the state that received above average snowfall for a few winter events this season, specifically the Eastern Shore and Southern Maryland, it took longer to regain bare pavement than typical for an average winter event, which raised the overall time to regain bare pavement statewide
- MDOT SHA had a significant turnover in employees responsible for snow removal, causing an increase in time to clear roads

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA is hosting one-day hiring events in an attempt to develop a candidate pool for field maintenance personnel to minimize the impact of employee turnover
- MDOT SHA is conducting Federal Motor Carrier Safety Administration training every other month to aid in obtaining Commercial Driver's License for new employees
- 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 2022 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
- MDOT SHA plans to continue in-person salt management training for field staff responsible for clearing the roadways during winter operations, which will educate the new employees on sensible salt application and practical 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, capital projects, congestion reduction operational strategies, and freight traveler information to reduce freight bottlenecks

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

Maryland's extensive transportation system strengthens economic growth by connecting communities within Maryland, as well as the global economy. The state's nationally significant multimodal network relies on highways, railroads, airports, ports, and pipelines. Maryland serves as a crossroad of freight activity, not just in Maryland but for the entire Eastern Seaboard. Much of Maryland's freight intensive network supports both passenger and freight movements, but Maryland also has nationally significant freight rail infrastructure and connections.

The Helen Delich Bentley Port of Baltimore is one of Maryland's top economic generators. In 2021, the Port's public and private marine terminals handled 43.7 million tons of foreign cargo, 11th highest for any port in the nation, as volumes returned to pre-pandemic levels. The Port is 9th in the nation for cargo value, at $61.3 billion, a record for MDOT MPA. Additionally, 37,300 direct, induced, and indirect jobs are generated by the Port and an additional 101,880 jobs in Maryland are related to port activities.

BWI Marshall Airport is the 25th busiest cargo airport out of both CY 2020 and CY 2021. 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. In 2021, BWI Marshall Airport handled 4% more cargo than the previous year and maintained 55% 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.

There are several highway improvements on the way for the state that will support freight movement and reduce congestion. In April 2022, the Federal Highway Administration (FHWA) approved the Final Environmental Impact Statement and Record of Decision (FEIS/ROD) for the Chesapeake Bay Crossing Study marking the completion of the Tier 1 NEPA Study. In June 2022, the Bay Crossing Study Tier 2 NEPA Study began to relieve congestion for generations to come at the Bay Bridge and along its 22 miles of approach highways.

MDOT SHA, in particular, supported freight mobility through efforts such as updating the Maryland Statewide Freight Plan with new and innovative strategies to support multimodal freight transportations projects and building a connected vehicle ecosystem through intelligent transportation system (ITS) and Transportation System Management and Operations (TSMO) solutions that leverage big data and connected vehicle applications, as well as the Freight Connected and Automated Vehicles (CAV) Working Group, which seeks to coordinate CAV freight opportunities in Maryland, with specific emphasis on potential for truck platooning.

The Transportation Business Units (TBUs) also created visualization tools to support MDOT's customers including metropolitan planning organizations (MPOs), local governments, regional organizations, and the private sector with transparent system performance information that helps identify bottlenecks so that MDOT can work collaboratively with stakeholders to resolve them and used innovative TSMO capacity expansion opportunities to improve freight movements on roadways, such as I-695.

Finally, Tradepoint Atlantic, in a joint investment and partnership with Terminal Investment Limited, will build a new container terminal in Sparrows Point, which will ease capacity issues and boost growth for Maryland's Port of Baltimore. The multiyear project will eventually employ more than 1,000 people and give Maryland's port a substantial competitive advantage compared to other ports on the Eastern Seaboard.

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*

MAKING PROGRESS

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.
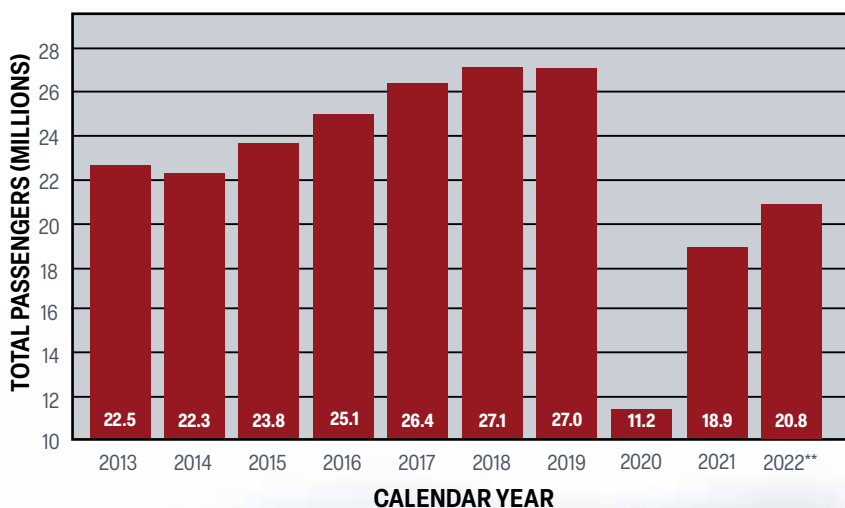
TOTAL PASSENGERS (MILLIONS)

Calendar Year	Total Passengers (Millions)
2013	22.5
2014	22.3
2015	23.8
2016	25.1
2017	26.4
2018	27.1
2019	27.0
2020	11.2
2021	18.9
2022**	20.8

CALENDAR YEAR

2020 and 2021 data have been revised from previous report.

**2022 data is preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

▰ In the first three quarters of FY 2022, 15.5 million passengers flew through BWI Marshall Airport; this is an 89% increase over the same period of FY 2021 indicating a strong rebound in travel demand; total passenger levels are still below pre-COVID FY 2019 levels, however peak period activity during holiday travel is within a few percentage points of FY 2018 and FY 2019 levels

▰ BWI Marshall Airport remained the busiest airport in the Baltimore-Washington region with a 35% market share, ahead of both Dulles and Reagan National airports

▰ In FY 2022 BWI Marshall Airport added airline service from new carriers including Air Senegal, Play, Icelandair, and Avelo, and expanded service from existing carriers including Frontier, Spirit, and Southwest

▰ As of June 2022, BWI Marshall Airport has, on average, 259 daily departures to 86 nonstop destinations by 18 airlines

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ MDOT MAA continues to focus on improving the customer travel experience and route offerings through strategic investment in airport facilities, expanding and modernizing amenities and services, and developing a dedicated and efficient workforce

INTERNATIONAL CRUISES USING MARYLAND'S PORT OF BALTIMORE*

TARGET ACHIEVED

Maryland's Port of Baltimore is one of the busiest cruise ports on the Eastern Seaboard. This measure illustrates cruise-related business activity departing from Maryland's Port of Baltimore to foreign destinations.

FISCAL YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of International Cruises using MDOT MPA's Terminal	93	99	75	94	86	94	94	69	0	67

TARGET: Maintain two year-round cruise line operations as 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.

WHY DID PERFORMANCE CHANGE?

▰ Cruises from Maryland's Port of Baltimore started to resume in September 2021; since December 2021, two cruise lines have been sailing out of Baltimore on a weekly basis; both lines started operations with a limited (~75%) capacity restriction that have since been lifted; both cruise lines now sail at full capacity

▰ Norwegian Cruise Lines is planning to add seasonal cruises out of the Port starting in fall 2023

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ MDOT MPA works with the cruise lines to aggressively market the greater Baltimore-Washington area to cruise customers, as well as markets that are within driving distance to the Cruise Maryland Terminal; this promotes the local "drive-to" market to cruise lines as it seeks to maintain Baltimore's homeport status and increase its port calls

▰ MDOT MPA continues to upgrade the Cruise Maryland facility to make it more accommodating for year-round cruising

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 investments by 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.

Chart: Jobs Supported by MDOT Capital Program by Fiscal Year

Fiscal Year	Jobs Supported
2017	25,584
2018	26,790
2019	25,627
2020	30,679
2021	28,308
2022	20,428
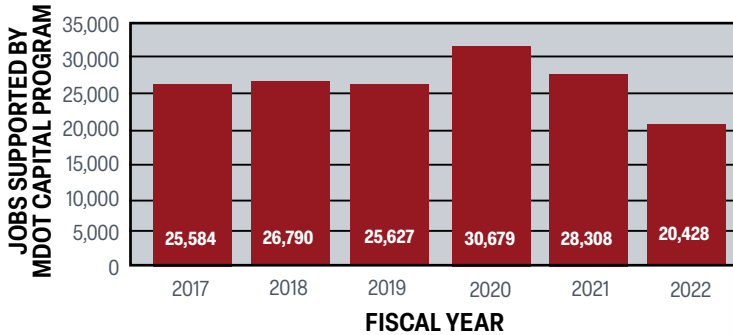
This measure will be reported in the AR until the replacement measure, Change in Market Access and Productivity Due to Improvements in the Transportation Network, is ready for reporting.

OBJECTIVE: Improve the Movement of Goods within and through Maryland by investing in intermodal connections and improvements to reduce freight bottlenecks

WHY DID PERFORMANCE CHANGE?

▟ An increasingly tight labor market and high inflation negatively impacted job creation this year

▟ Construction of the Nice/Middleton Bridge and the Purple Line provided many of the jobs supported by the MDOT Capital Program

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ An increasingly tight labor market and high inflation negatively impacted job creation this year

▟ Continue work on the I-695 TSMO project (project limits are from I-70 to MD 43), which is expected to continue through 2024

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	$6,143	58
Other**	$286	96
Pipeline	$6,794	33,299
Rail	$12,549	21,341
Truck	$296,685	220,765
Water	$540	3,138
All Freight	$389,751	285,206
Multiple Modes & Mail Goods	$66,753	6,509

Source: U.S. Department of Transportation Freight Analysis Framework (FAF5) the FAF version is 5.0, Freight Analysis Framework (FAF) (ornl.gov). FAF 5 is based on 2017 data. This version makes changes from previous versions in that it includes additional modal detail or classification than in the past. Therefore, previous FAF assessments cannot be accurately compared as value and tonnage may be attributed to different modes in previous versions. Prior to this version of FAF, MDOT was using a growth rate relative to GDP and the economy to factor the base year FAF data.

**Category "Other" includes movements not elsewhere classified such as flyaway aircraft, and shipments for which the mode cannot be determined as stated in the documentation for the Freight Analysis Framework Version 5.0.*

Maryland is an important link in global supply chains due to its significant freight infrastructure, including Maryland's 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. In 2021, freight volumes grew nationally and freight movement and related congestion returned to pre-COVID levels. Trucking is estimated to grow and continues to move the most tonnage in Maryland. Growth may be attributed to increased demand, as well as increased growth in e-commerce. Tonnage for rail and water freight is estimated to decrease, which may reflect some of the challenges with global supply chains and back ups due to production shutdowns in 2020. Global delays in shipping and slower logistics activities are expected to continue to improve. Maryland's Port of Baltimore remains the largest auto and roll on/roll off port in the U.S.

To support efficient and safe freight flow, MDOT Is pursuing several activities. First, the state invested in new port infrastructure with a second 50-foot berth at Maryland's Port of Baltimore, which accommodates two large ships at the same time along with four additional supersized cranes that can help move more goods efficiently. The state also is in the process of reconstructing the 125-year-old Howard Street Tunnel. This will improve vertical clearance at 22 bridges for a double-stack rail corridor to and from Maryland's Port of Baltimore and the East Coast, supporting more efficient and expanded use of rail, which can relieve roadway congestion. MDOT has updated the Maryland Statewide Freight Plan with new and innovative strategies to support multimodal freight transportations projects that optimize Maryland's transportation network.

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

MARYLAND'S PORT OF BALTIMORE FOREIGN CARGO AND MDOT MPA GENERAL CARGO TONNAGE*

ON TARGET

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

YEAR	Maryland's Port of Baltimore foreign cargo tonnage (CY)	MDOT MPA total general cargo tonnage (FY)
2013	30.3	9.6
2014	29.5	9.6
2015	32.4	9.7
2016**	31.4	9.8
2017**	38.2	10.3
2018	43.3	11.0
2019	43.6	11.0
2020	37.3	10.4
2021**	43.7	11.0
2022***		10.8
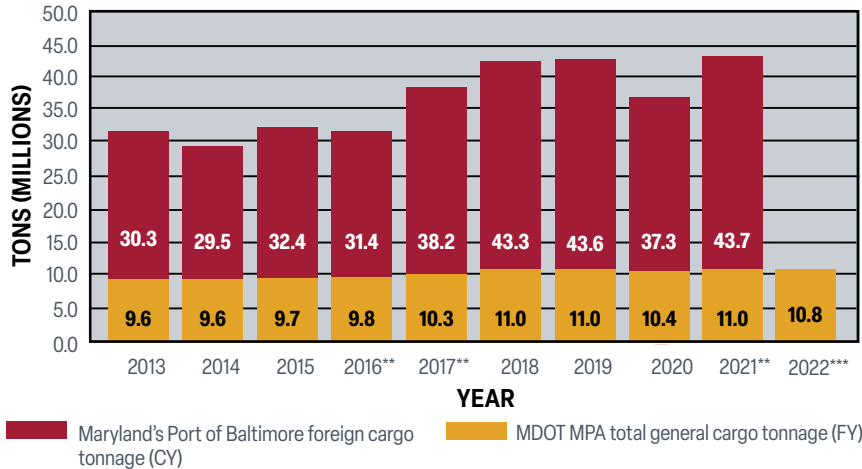
*MDOT MPA cargo data is provided by fiscal year, but Port information is reported using the latest full calendar year because Port statistics combine data for public and private marine terminals that use different fiscal year reporting timeframes. Therefore, 2022 data cannot be reported until early 2023.

**2016, 2017, and 2021 data have been revised from previous report.

***(2022) 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 2022 is not yet available; fiscal data for 2022 is an estimate.

WHY DID PERFORMANCE CHANGE?

▰ Maryland's Port of Baltimore's public and private marine terminals performed well in 2021 as bulk imports and exports both increased

▰ Bulk commodities make up approximately 66% of the foreign cargo that moves through Maryland's Port of Baltimore; export coal, the largest bulk commodity, saw a large rebound from the peak of the COVID-19 pandemic and the Port remains the second largest port in the U.S. for export coal shipments

▰ Maryland's Port of Baltimore remains the largest auto and roll-on/roll-off port in the U.S.

▰ MDOT MPA handled nearly 10.8 million tons of general cargo in FY 2022, which was a 1.4% decrease from FY 2021

▰ Cargo volumes through MDOT MPA terminals had mixed results; overall container tons fell 4.9% as port congestion along the East Coast led to several vessels discharging their Baltimore-bound cargo at other nearby ports to make up time in their vessel schedules; lines chose to skip Baltimore as it did not offer them the option of railing containers to the Midwest on a double-stacked service; automobile numbers also declined because of supply chain shortages; imported forest products and roll-on/roll-off cargo such as construction and farm equipment both showed strong gains over the previous year

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ MDOT MPA continues to promote both the state-owned terminals as well as the privately owned marine terminals to cargo interests

▰ MDOT MPA also works with the U.S. Army Corps of Engineers to ensure that the 50-foot channel system is maintained and dredged on a regular basis to ensure that larger ships are able to access Maryland's Port of Baltimore

▰ Currently, MDOT MPA is working on a new strategic plan focused on the sustainable growth of Maryland's Port of Baltimore and also is executing major projects meant to increase competitiveness and cargo volumes

▰ Maryland's Port of Baltimore is receiving $15.6 million from the Federal Railroad Administration (FRA) Consolidated Rail and Infrastructure Safety Improvements (CRISI) to update the intermodal rail yard infrastructure and support increased demand for double stacked trains of containerized cargo that will be possible due to the Howard Street Tunnel expansion project

ANNUAL HOURS OF DELAY FOR TRUCKS AND TRUCK TRAVEL TIME RELIABILITY (TTTR) INDEX

ON TRACK

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. 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 and track freight bottlenecks 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 TTTR index.

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

Legend: Annual Hours of Delay (thousands) ■ — TTTR Index ●

Chart data:
Calendar Year	Annual Hours of Delay (thousands)	TTTR Index
2019	5,096	1.95
2020	2,057	1.69
2021*	7,021	1.71
2022**	5,100	1.77

BETTER ▼
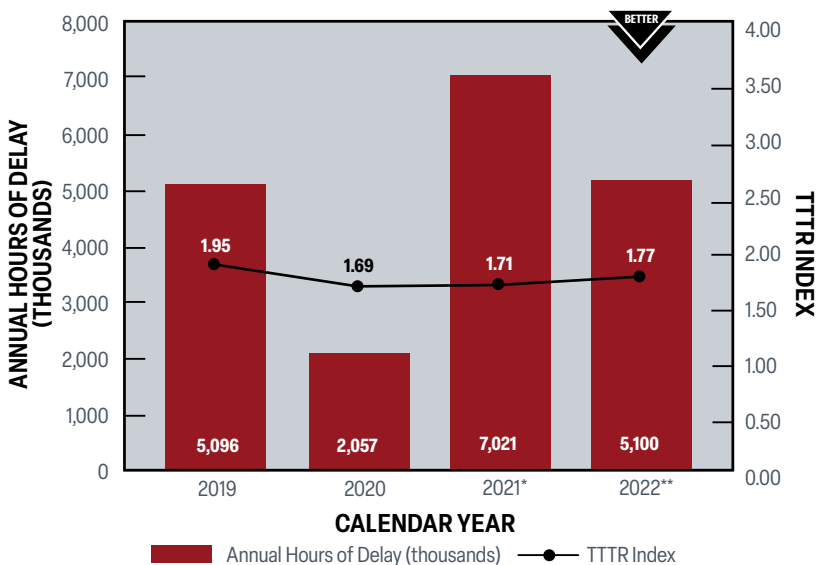
TARGET: 5,300 ($5.3 million) Thousand Hours Of Truck Delay In 2021, TTTR of 1.92 in 2022

2021 data have been revised from previous report.
**2022 data are 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 2021 actual data and requiring revisions to the future estimated data

/ Using freight Vehicle Miles Traveled (VMT) as the measure of correlation, monthly truck activity fluctuated anywhere between 0% to 30% greater in 2021 compared to 2019; however, so far, 2022 is seeing a return to 2019 freight VMT levels with congestion for autos slowly recovering to pre-pandemic levels

/ Freight VMT increased significantly during 2021 in comparison to previous years, while congestion observed in 2021 only moderately increased from levels seen during 2020; this resulted in differing trends seen in hours of delay and reliability index for trucks; see detailed explanation above

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

/ Major TSMO projects like the I-695 TSMO and I-270 Integrated Corridor Management projects as well and the upcoming I-495/I-270 P3 will have a significant positive impact on the network performance.

/ MDOT SHA is completing ongoing research initiatives, including Work Zone Data Exchange (WZDX) and Mobile Road Weather Information System (MARWIS) integration aimed at improving safety and mobility

/ MDOT SHA is facilitating real-time signal timing adjustment to support Eastern Shore Traffic Operations (ESTO) during summer months using Advanced Traffic Signal Performance Measures (ATSPM)

/ The new Nice/Middleton Bridge recently opened with an additional lane in each direction and wider lanes with less steep grades to better accommodate trucks; the enhanced bridge will increase mobility and relieve traffic congestion in the area

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*

MAKING PROGRESS

Chart data:
Calendar Year	Dollars (Billions)
2019	$5.1
2020	$1.8
2021	$4.3
2022**	$4.8

BETTER ▼
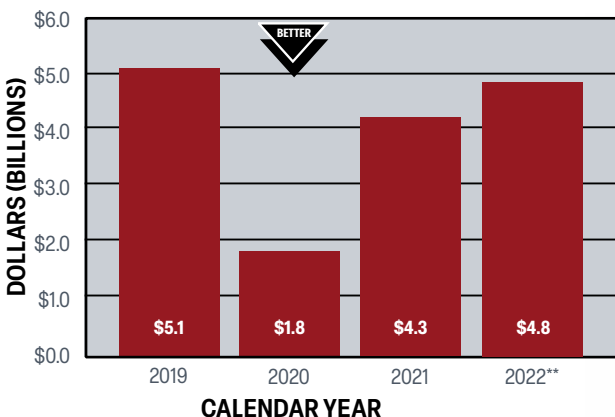
TARGET: 5.1 billion

2019 and 2021 data have been revised from previous report.
**2022 data is preliminary and subject to change.*

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

ANNUAL REVENUE VEHICLE MILES OF TRANSIT SERVICE PROVIDED*

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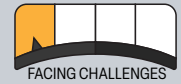
Revenue vehicle miles measure each mile for which a transit vehicle is in service and accepting customers. This measure indicates transit's level of service.

LOCAL BUS

BETTER

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
20.1	20.0	20.1	20.1	20.8	20.9	21.2	20.4	17.8	19.5

LIGHT RAIL

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
3.3	3.3	3.0	3.1	2.9	3.0	3.0	2.6	3.2	3.2

BALTIMORE METRO

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
5.1	5.0	5.0	5.0	4.9	4.6	4.4	3.5	4.7	4.8

MARC

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
6.9	6.3	6.3	6.4	6.5	6.5	6.7	5.6	4.4	5.0

CONTRACTED COMMUTER BUS

2013	2014	2015	2016	2017	2018	2019	2020	2021**,****	2022***,****
5.4	5.4	5.9	6.3	6.5	6.6	6.6	4.9	0.8	5.4

PARATRANSIT & TAXI ACCESS

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
15.6	16.8	18.1	19.5	19.3	21.2	22.7	18.7	12.1	15.1

REVENUE VEHICLE MILES

FISCAL YEAR

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

**2021 data have been revised from previous report.*

***2022 data are preliminary and subject to change.*

****Although we are almost back to pre-pandemic service levels, contracted bus services for 2021 and 2022 reflect a decrease in the number of buses in operation*

WHY DID PERFORMANCE CHANGE?

- MDOT MTA expanded scheduled trips on BaltimoreLink and bus service to select Baltimore City Public Schools, increasing the vehicle revenue miles

- Since Maryland has an aging population, more people are qualifying for and using MobilityLink (paratransit)

- Baltimore Metro SubwayLink continued to perform scheduled track repair and maintenance, having an impact on the revenue miles but little impact on the riding public because these projects were completed during the period of decreased ridership due to the COVID-19 pandemic

- 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

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT MTA is incorporating new technologies and data into a robust environment of operations information to better understand and manage service performance across all modes; this will not only expand real-time passenger information capabilities enabling greater transparency and access to our riders, but also will help better manage service operations

- MDOT MTA is studying how to better connect Towson with Baltimore City and expand service between the two urban centers

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

Keeping a safe and well-maintained transportation system remains critical for MDOT. Without proper maintenance and repair, poorly maintained roads and bridges can lead to more incidents and delays, thus impacting safety as well as economic activity. In FY 2022, MDOT SHA recorded 85% of its network in an overall preferred maintenance condition. MDOT recorded 26 poor-rated MDOT SHA bridges in March 2022—the lowest level since tracking began and one of the lowest percentages of any state transportation agency in the nation. Of the 26 poor-rated bridges, eight are currently in the construction phase, and the remaining are in the design phase with construction funding either in place or pending to address their conditions.

MDOT is making great progress on its commitment to implement technology solutions that facilitate movement. Maryland is the second state to offer a digital version of a driver license or identification card for one's phone, which can be used to get through security checkpoints at two of the Baltimore–Washington region's airports. MDOT MVA has expanded its online services through the Customer Connect system and now is serving more customers online than ever before while continuing to operate under an appointment-based model. As of November 2022, over four million Marylanders are REAL ID ready. All-electronic (cashless) tolling has been provided on roadways across the state to reduce idling and provide better fuel efficiency.

In November 2021, MDOT launched the expansion of the incenTrip™ application statewide as a congestion mitigation effort. The purpose of incenTrip is to reduce traffic congestion in the weekday peak periods by encouraging Maryland commuters and employers to increase the use of public transportation, ridesharing (carpool and vanpool), walking, biking, teleworking, and alternative work schedules.

MDOT continues to be recognized nationally for its efforts to maintain infrastructure quality and safety. MDOT earned a Maryland Quality Initiative (MdQI) Modal Award for Projects Over $5 Million for both the

MDOT SHA's $89.3 million I-81 improvement project, which included widening and superstructure replacement of the I-81 dual bridges over the Potomac River in Washington County, Maryland, and Berkeley County, West Virginia, and MDTA's $188.6 million replacement of the steel bridge on I-895 near the Baltimore Harbor Tunnel. Another $15 million in funding will be funneled to MD 90 to help relieve Maryland's summer beach traffic. MDOT also has committed $28 million in federal infrastructure funding to launch a Tier 2 Study of a new Chesapeake Bay crossing and to examine traffic-calming measures in the 22-mile stretch between the Severn River Bridge and the US 50/301 split.

In November 2022, MDOT completed the $93 million reconstruction of I-270 and MD 85 interchange in Frederick County, replacing two poorly rated bridges.

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

ON TARGET

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 on Maryland's roadways.
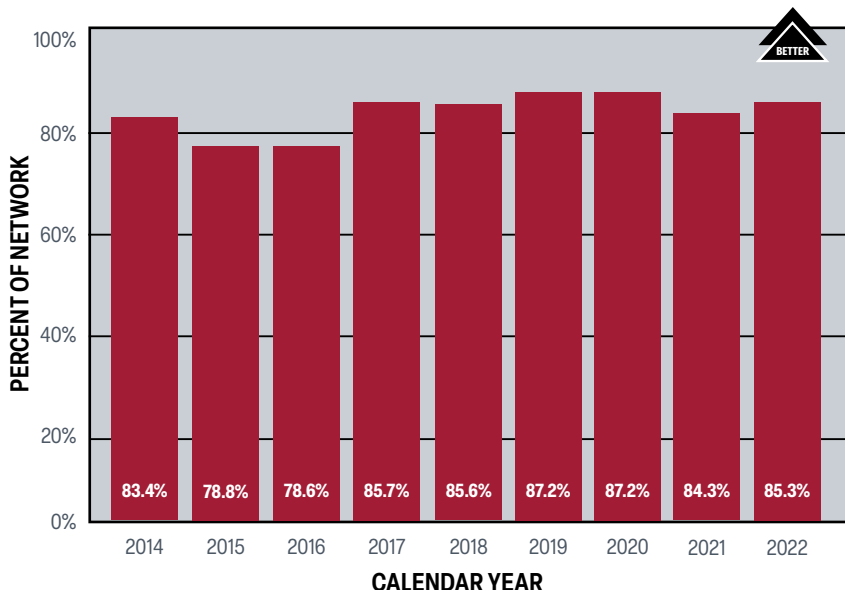
TARGET: 85% Annually

WHY DID PERFORMANCE CHANGE?

- MDOT SHA was able to supplement state workforce with contractors to perform work
- For a fifth straight year, the winter weather was relatively light or average, which minimized damage to assets

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA will continue to seek environmental permits to perform much needed drainage work
- MDOT SHA is continuing to work with the Office of Traffic and Safety (OOTS) to identify and replace critical signs functioning below the desired level of service
- MDOT SHA is working to obtain and direct supplemental funding and continue to seek additional contractors to perform much needed maintenance to roadside vegetation
- MDOT SHA is hosting one-day hiring events in an attempt to develop a candidate pool for field maintenance personnel to minimize the impact of employee turnover
- MDOT SHA will continue to use asset management principles to determine the most appropriate repair/replacement strategies to preserve assets in a state of good repair and make the best use of its available resources

OVERALL ACCEPTABLE PAVEMENT CONDITION*

ON TARGET

Overall pavement condition is based on remaining service life, which is measured on a scale of 0 to 50 years to describe pavement condition. Ride quality, functional cracking, structural cracking, and rutting data are collected utilizing Automated Road Analyzer (ARAN) vehicles; friction data is collected using skid trucks. MDOT conducts yearly roadway inspections to ensure safety, efficiency, mobility, and accessibility in the movement of people and goods.
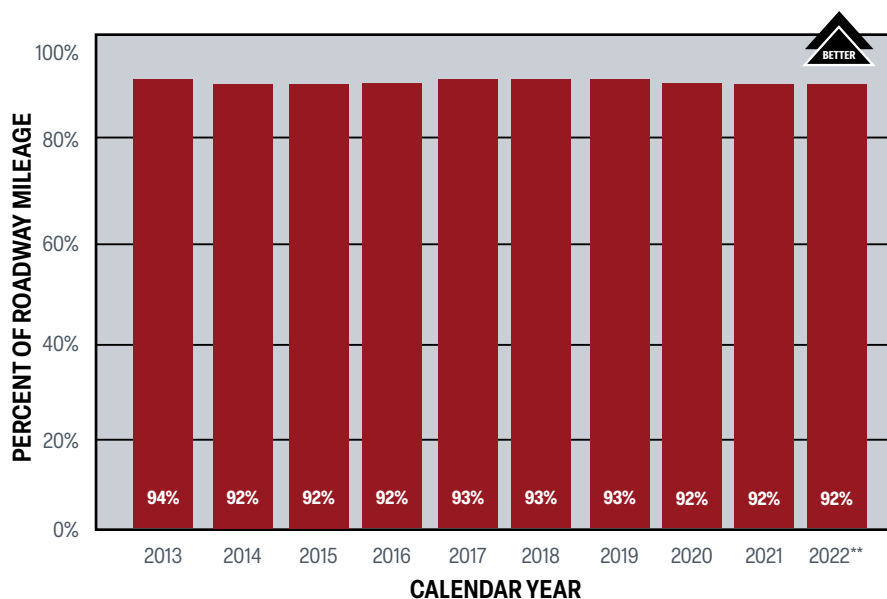
TARGET: 90% Annually

All data have been revised from previous report.

**2022 data is preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

- MDOT SHA resurfaced approximately 4.7% of its pavement network in 2021; preventative maintenance covered an additional 10.4% of the network
- Improvements to the roadway network in 2021 were higher than 2020; it is anticipated that the "percent acceptable" conditions will generally remain steady over the next 1-2 years
- The impact of cracking (a significant cost driver) has remained steady; the biggest driver in the percent acceptable reduction continues to be friction

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA will continue to 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 address friction improvement needs across its roadway network proactively, 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-rerouting problems that can occur when bridges close.

CALENDAR YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Number of MDTA Bridges in Poor Condition	4	1	1	1	1	1	1	1	0	0
Number of MDOT SHA Bridges in Poor Condition	87	81	69	69	67	62	52	36	29	26
Total Number of Bridges in Poor Condition	91	82	70	70	68	63	53	37	29	26

2022 data are preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

▟ MDOT SHA recorded 26 poor rated bridges during their annual condition submission to the Federal Highway Administration (FHWA) in March 2022; 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, perform minor rehabilitation to 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; currently there are 15 active on-call construction crews, which is an increase from nine crews the previous year but a reduction from 30 crews prior to 2020

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ MDOT SHA is continuing with FHWA Special Experimental Project No. 14 (SEP-14) Contracts that use the Indefinite Delivery and Indefinite Quantity (ID/IQ) scopes of work to support the bridge rehabilitation program leaving state funds to be available for emergencies

▟ MDOT SHA continued to develop plans for poor rated bridges that cannot be repaired under the preservation program

▟ MDOT SHA is working to develop plans for major rehabilitation or replacement on several fair rated bridges that are on high volume roadways and have the potential to become poor rated in the near future, this is a proactive approach to have projects ready so that mobility is not impacted by structural condition

▟ 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 has begun 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

▟ Detailed Asset Lifecycle Management Plans are being developed for MDOT SHA and MDTA bridges to document the process of keeping structural assets in a state of good repair

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.

Chart: DREDGED MATERIAL PLACEMENT CAPACITY REMAINING FOR HARBOR & POPLAR ISLAND SITES (MCY) by FISCAL YEAR

Fiscal Year	Harbor Material	Poplar Island Site Material
2013	18.1	15.0
2014	18.1	15.7
2015	16.5	12.3
2016	16.0	9.8
2017	13.2	7.4
2018	12.2	7.4
2019	11.5	10.7
2020	10.8	8.0
2021	8.0	30.3
2022	7.3	29.9

Legend: Harbor Material, Poplar Island Site Material
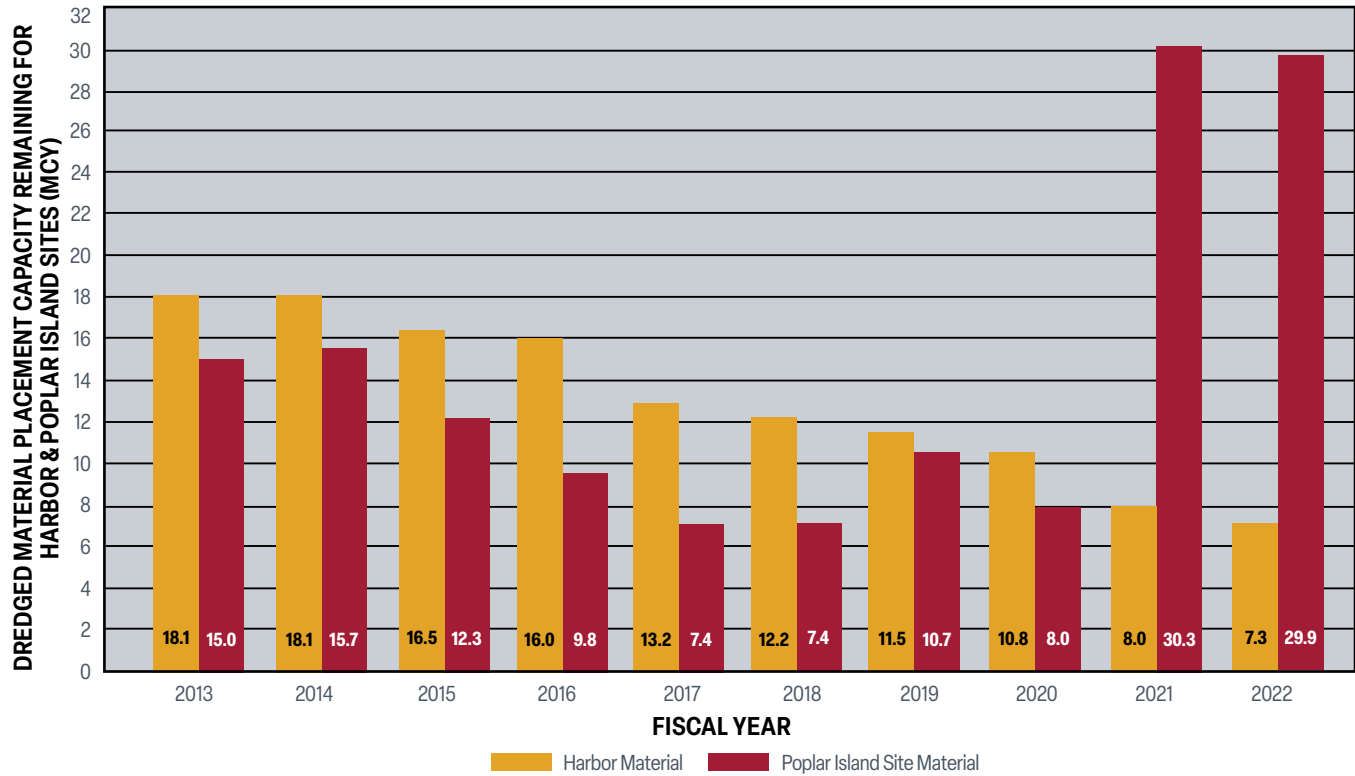
HARBOR TARGET: Maintain a rolling 20-year plan for adequate dredged material placement capacity

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 provides 575 additional acres of dredged material placement, adding storage capacity of 28 million cubic yards (mcy) of material

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ The U.S. Army Corps of Engineers' Mid-Chesapeake Bay Islands Restoration Project will use dredged sediment from Port shipping channels to restore James and Barren islands off Dorchester County

TRANSIT ROLLING STOCK WITHIN USEFUL LIFE BENCHMARK

ON TARGET

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	2022 PERCENT OF VEHICLE STOCK WITHIN USEFUL LIFE	TARGETS
Baltimore Metro	0%	0%
MARC	88%	88%
Light Rail	100%	100%
Paratransit	59%	64%
Local Bus	89%	96%

*Targets have been updated from previous report.

**Baltimore Metro rolling stock is 0 for FY 2022 because all vehicle are past and useful life. New cars will not be inservice until FY 2024, such that target for FY 2023 is 0.

WHY DID PERFORMANCE CHANGE?

▌ MDOT MTA prioritizes reinvestment in safety and service critical assets and focuses 98% of the capital program on renewal; however, year-to-year funding for transit can be uncertain and procurement timelines for new vehicles can be extended by vendors, which impact MDOT MTA's ability to meet near-term targets

▌ In FY 2022 the primary challenge was delayed vehicle deliveries, as noted above, due to the COVID pandemic and subsequent supply chain issues

▌ MDOT MTA has prioritized the replacement of revenue vehicles over non-revenue vehicles, as a result of the target setting process and funding constraints

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?

▌ As additional federal funding for transit is anticipated in FY 2023, MDOT MTA will prioritize SGR reinvestment to meet vehicle replacement schedules

▌ Supply chain impacts and inflation are expected to continue to impact the capital program in FY 2023, potentially delaying delivery of vehicles and decreasing the purchasing power of MDOT MTA's funding

▌ Continued staffing difficulties limit the amount of work that can be done on a yearly basis to improve the conditions of aging facilities

▌ As physical inspections of facilities are completed during the next several years, the baseline for understanding facility condition will shift and performance numbers may continue to change, physical condition will provide more accurate information for prioritizing investments and addressing maintenance

AVERAGE TRUCK TURN TIME A SEAGIRT MARINE TERMINAL

TARGET ACHIEVED

Keeping Maryland's 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 2022, the average truck turnaround time was 60 minutes, down significantly from 73 minutes in 2020, but only slightly quicker than the average of 61 minutes in 2021.

WHY DID PERFORMANCE CHANGE?

▌ Turn times fell as improvements, such as weigh-in motion scales, have helped speed the processing of trucks entering Seagirt Marine Terminal

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT MPA and Ports America Chesapeake (PAC) will continue to apply for additional federal funding that will allow PAC to offset part of the costs for other capital projects that will help improve efficiencies on Seagirt Marine Terminal

BETTER

2018	2019	2020	2021	2022*
89	86	73	61	60

MINUTES / **CALENDAR YEAR**
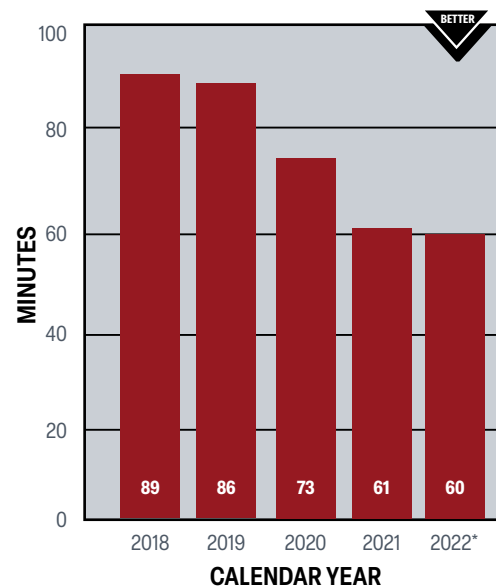
TARGET: 60 minutes

*2022 data is preliminary and subject to change.

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

MAKING PROGRESS

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

PERCENT

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Line (sidewalks in urban areas)	21.5%	21.9%	19.8%	20.0%	20.2%	20.2%	20.4%	20.6%	20.7%
Bar (ADA compliance)	66%	67%	67%	67%	68%	69%	69%	71%	71%

FISCAL YEAR
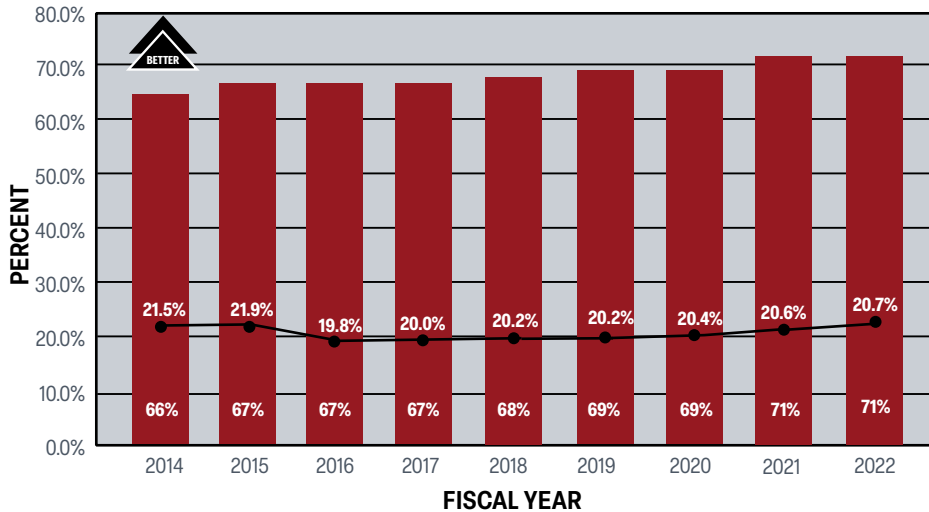
▬ Percentage of sidewalks that meet ADA compliance

—●— 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 $2.2 million in FY 2022 to design and construct new sidewalks, including the construction of new directional miles of sidewalk in MD 424 in Anne Arundel County and design to address the sidewalk gap in US 1 between Crestmount Road to Cedar Avenue

▸ MDOT invested $3.0 million in FY 2022 to design and construct sidewalk improvements to address ADA accessibility, including the reconstruction of sidewalks for ADA compliance in several locations in Baltimore, Carroll, Frederick, Harford, Prince George's, Queen Anne's, Talbot, and Worcester counties

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▸ MDOT SHA is partnering closely with other partners and stakeholders to leverage federal funding sources to facilitate further projects; MDOT SHA also will evaluate further mechanisms to address gaps in priority corridors proactively

▸ Continue the implementation of 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

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

MDOT is committed to implementing the Strategic Asset Management Plan (SAMP), which was developed in coordination with MDOT's Asset Management working group. The Department Asset Management Policy provides policy direction to MDOT TSO, the Transportation Business Units (TBUs), and MDTA as they implement the plan to help Maryland understand the condition of its assets and be able to allocate funding strategically for maintenance and repairs of transportation infrastructure. MDOT has 10 principles for asset management that guide the department's plan including data-driven decision making, accessible and integrated information systems to facilitate information sharing, and using resources wisely. Asset management is a collaborative effort and requires coordination among various TBUs and MDTA. Assets in the transportations system include pavement on roadways, administrative and other types of buildings, passenger and freight rail, roads and tunnels, buses, signals, and lighting.

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

Millions of Maryland residents and visitors drive a vehicle, take public transit, walk, bike, and use Maryland's transportation system and services to get where they need to go. Meeting the needs of all customers is vital and MDOT strives to provide efficient, quality service. To enhance customer experience, MDOT MVA recently completed its information technology (IT) modernization project, known as Customer Connect, which expands information access and allows customers to conduct more online transactions than ever before. Customer Connect also provides customers and employees with a complete view of the customer's status and history with MDOT MVA by linking their driver and vehicle accounts. Since December 2021, more than half a million Marylanders have created a myMVA eServices account. With a myMVA account, customers can conveniently and efficiently manage their MDOT MVA business 24 hours a day, seven days a week. The completion of Customer Connect helped MDOT MVA achieve a near 10-minute reduction in wait time in the fourth quarter of FY 2022; the current average is 11 minutes, compared to 20 minutes in FY 2021. MDOT MVA also has partnered with other Maryland agencies to become a "one-stop-shop" for many services. The Department of Natural Resources, MDTA, and the Department of Veteran Affairs all have opened customer service centers within multiple MDOT MVA branches across the state and offer their products on MDOT MVA's eServices store and kiosks.

MDOT MTA's program Fast Forward: Customer Experience Enhancement Program, a $43 million initiative improving transit reliability, travel times, and customer safety and access, is expected to be completed by the end of 2023. This program will design and construct additional dedicated bus lanes, create new and enhanced transit hubs, add more bus shelters, make Americans With Disabilities Act (ADA) and pedestrian

safety improvements at and near bus stops, improve real-time signs, and enhance wayfinding at Light Rail stations by the end of 2024. MDOT MTA also has improved accessibility to real-time information for transit riders. Customers now can view live train locations and arrival predictions on the Transit App and Google Maps for all transit modes. This sets the stage for the planned addition of arrival predictions on digital signage inside Metro stations in 2023. Additionally, real-time bus crowding information has been added to the Transit App for all LocalLink, CityLink, Light Rail, Express BusLink, and MARC services to give riders transparency and more choices in the trip-planning process.

MDTA continues to improve the customer experience for all-electronic (cashless) tolling. Since cashless tolling was made permanent statewide in August 2020, allowing drivers to pay tolls via *E-ZPass®*, Pay-By-Plate, or Video Tolling, MDTA has converted toll plazas on I-95 and at the Hatem, Key, Nice/Middleton, and Bay bridges to highway-speed, all-electronic tolling.

MDOT MAA strives to be a "good neighbor" within the community and has been participating in the Federal Aviation Administration's (FAA) voluntary CFR Part 150 Airport Noise Compatibility Program since the mid-1980s. Under this program, the sound insulation of eligible residences and schools intends to mitigate aircraft noise impacts to within federally accepted levels which in turn will improve the quality of life for citizens and help preserve the long-term operational sustainability of the airport. To date, more than 700 homeowners and four schools have participated in the BWI Marshall Airport noise program. MDOT MAA is working on the next phase of the program, which includes sound insulation for up to 136 single-family homes and 17 multifamily structures (comprised of 344 units).

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

ON TARGET

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.

BETTER

PERCENT OF TRANSACTIONS

Fiscal Year	Percent
2013	49.7%
2014	51.6%
2015	55.8%
2016	57.5%
2017	59.4%
2018	65.9%
2019	67.2%
2020	69.4%
2021	70.8%
2022	74.5%

FISCAL YEAR
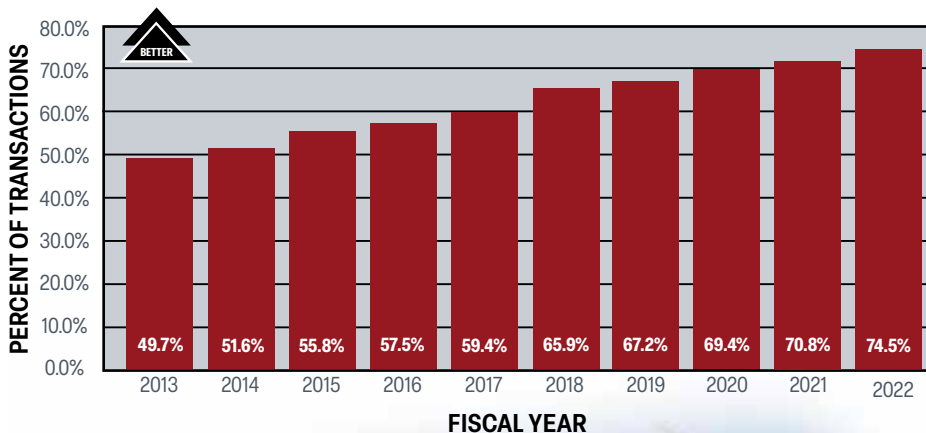
TARGET: Short-Term: 77.4% (FY 2023); Long-Term: 80.2% (FY 2024)

WHY DID PERFORMANCE CHANGE?

▌ MDOT MVA recently has completed its system modernization project, Customer Connect, as of December 2021; this fully integrated system has provided MDOT MVA the ability to capture more precise performance measures to better serve customers

▌ The completion of Customer Connect has allowed even more customers to carry out a transaction by a method other than coming in person to an MDOT MVA branch location

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT MVA will promote the use of ASD systems, including myMVA—the online eServices delivery system, standalone kiosks, and expand the menu of online service options to complete transactions, submit documentation, and obtain account information on demand

PERCENT OF TOLL TRANSACTIONS COLLECTED ELECTRONICALLY*

TARGET ACHIEVED

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

BETTER

TOLL TRANSACTIONS (MILLIONS) / PERCENT OF ELECTRONIC TOLL TRANSACTIONS**

Fiscal Year	Total toll transactions	Electronic toll transactions as a percent of total**
2014	134.0	74%
2015	144.8	75%
2016	158.2	81%
2017	165.2	81%
2018	167.0	83%
2019	168.4	81%
2020	150.6	80%
2021	106.8	93%
2022	162.8	100%

FISCAL YEAR

■ Total toll transactions ● Electronic toll transactions as a percent of total**

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

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

**Data has been revised from previous report.*

WHY DID PERFORMANCE CHANGE?

▌ MDTA launched *DriveEzMD,* moving completely to all-electronic tolling; this 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®,* Pay-By-Plate option, and video tolling

▌ Difficulties arose during the pandemic, causing delays in receiving all of the transactional data

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ Construction continues on the I-95 Express Toll Lanes℠ (ETL) Northbound Extension to relieve traffic congestion and improvements on overall travel along the I-95 corridor into Harford County and MD 24

▌ Currently, research is being conducted for new strategies to assist with collecting unpaid tolls and civil penalties from out-of-state drivers in the coming years

OVERALL SATISFACTION WITH MDOT

ON TARGET

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.

Chart: Percent of Respondents by Calendar Year

CALENDAR YEAR	Very Satisfied	Satisfied
2018	22%	66%
2019	24%	62%
2020	24%	62%
2021	22%	67%

BETTER ▲
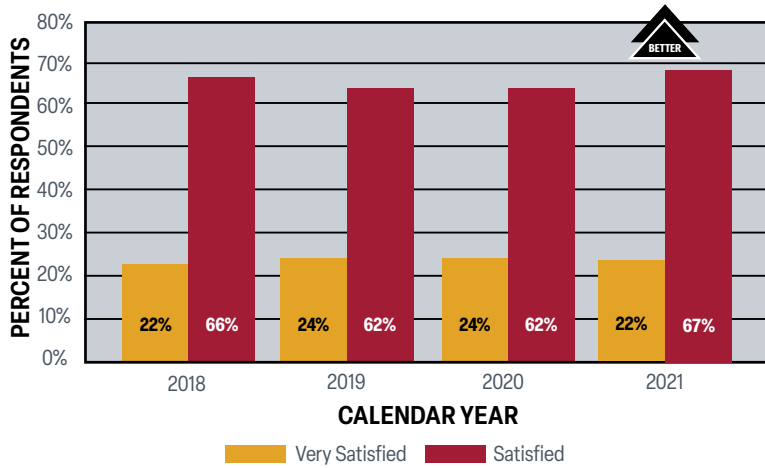
*The survey data reported are through 2021; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2022 survey data will be published in the 2024 Attainment Report.

WHY DID PERFORMANCE CHANGE?

▌ MDOT MVA completed Customer Connect in 2021, which has allowed customers to conduct more transactions online than ever before

▌ MDOT MVA also has expanded online services through MyMVA, a service that allows customers to look up notices, letters, and receipts related to their vehicle, check their REAL ID status, and view any MDOT MVA correspondence related to their vehicle since July 2020 without stepping foot into a branch office

▌ MDOT SHA handled 128,069 events, including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events

▌ MDOT SHA also commenced work on the I-695 Transportation System Management and Operations (TSMO) project (project limits are from I-70 to MD 43) to reduce congestion along the west and north sides of the Baltimore Beltway

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT MAA continues to focus on improving the customer travel experience and route offerings through strategic investment in airport facilities, expanding and modernizing amenities and services, and developing a dedicated and efficient workforce all to ensure that BWI Marshall Airport remains the accessible and hassle-free airport of choice for the region

▌ MDOT completed the draft of the Statewide Freight Plan and the State Rail Plan in 2022, which will help ensure that Maryland maintains a safe and reliable multimodal freight system

▌ MDOT SHA is focusing on three areas in future years: 1) asset management, which utilizes a system-preservation philosophy and also seeks to gain the best return on investment for future generations, 2) accessibility, to ensure all kinds of travelers have access to life's opportunities, and 3) mobility, which is about taking advantage of technology and data-driven systems to improve the efficiency of our existing footprint
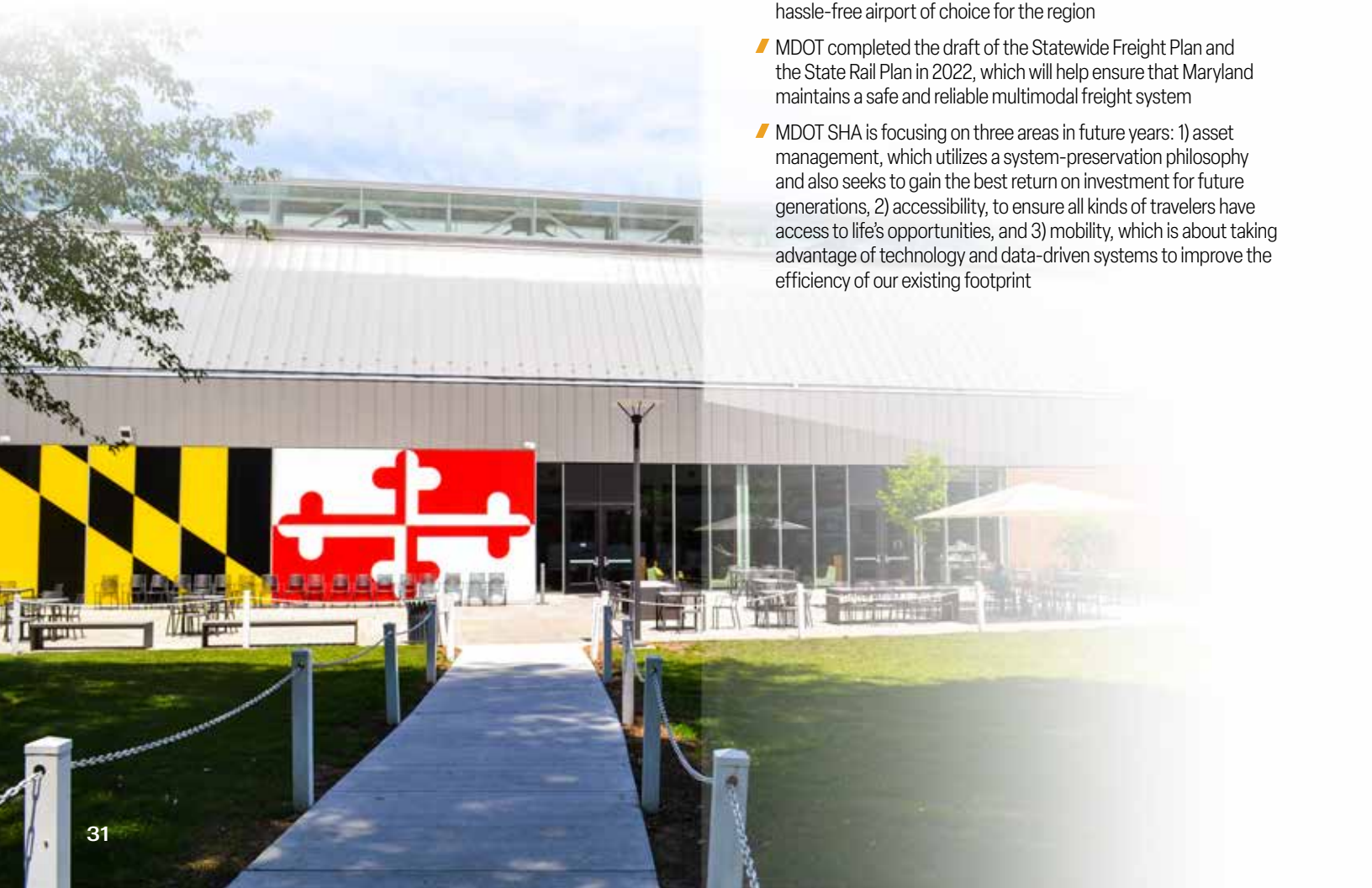
MDOT MVA BRANCH OFFICE CUSTOMER WAIT AND VISIT TIME VERSUS CUSTOMER SATISFACTION RATING

ON TARGET

MDOT MVA's average customer wait and visit time is a key indicator of the quality and efficiency of service delivery to customers and is related to customer satisfaction (i.e., as MDOT MVA branch customer wait and visit time decreases, customer satisfaction increases).
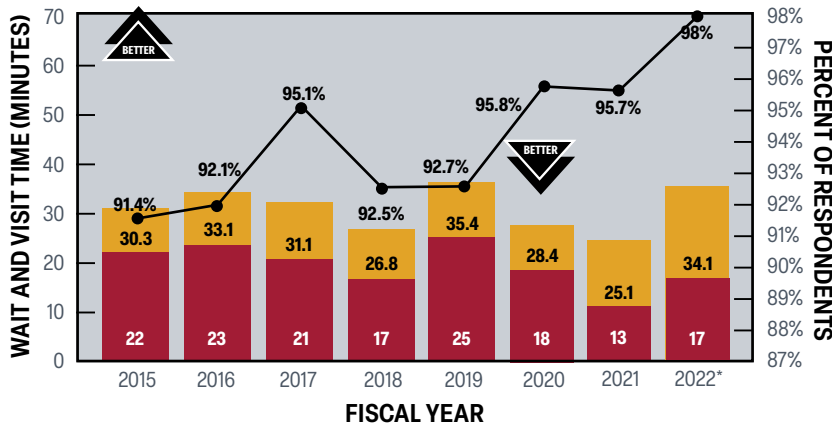
Average Branch Office Customer Wait Time In Minutes
Average Branch Office Customer Visit Time In Minutes (includes Wait Time)
Percent of Branch Office Customers Rating Service as "Good" or "Very Good"

TARGET: Average branch office customer visit time (minutes) Short-Term: 31.5 (FY 2023); Long-Term: 28.2 (FY 2024)

TARGET: Average branch office customer wait time (minutes) Short-Term: 15.2 (FY 2023); Long-Term: 11 (FY 2024)

2022 data are preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

▰ MDOT MVA saw almost a 10-minute reduction in wait time in fourth quarter of FY 2022 at an average of 11 minutes, compared to FY 2021 at 20 minutes

▰ The recently completed modernization project, Customer Connect, included a new queuing and scheduling system that helps select the exact type of appointment the customers need and allows MDOT MVA staff to prepare for the customer before their arrival

▰ MDOT MVA moved to an appointment-only model, allowing for better control over customer flow and arrival patterns to accommodate the needs of the business while meeting customer demand

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ MDOT MVA will optimize appointment durations to match anticipated transaction times and create appointment schedules appropriate for each location's staffing levels, with flexibility to address temporary and seasonal demand and capacity issues

▰ MDOT MVA will continue to use real-time performance data reports to manage customer flows minute-by-minute to reduce wait time and identify opportunities for service improvements

OBJECTIVE: Minimize travel delays and improve predictability of travel times on Maryland's transportation system

PERCENT OF TRANSIT SERVICE PROVIDED ON TIME

ON TARGET

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

MODE*	2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022	LONG-TERM TARGET
Local Bus	82%	81%	81%	85%	77%	68%	69%	74%	74%	74%	**85%**
Light Rail	97%	96%	97%	98%	96%	94%	95%	96%	92%	96%	**96%**
Baltimore Metro	97%	96%	95%	96%	96%	94%	94%	71%	90%	96%	**96%**
MARC	93%	92%	92%	94%	91%	91%	87%	92%	94%	92%	**96%**
Mobility Paratransit & Taxi Access	89%	91%	88%	92%	93%	93%	86%	89%	76%	91%	**95%**

Besides Local Bus, 2022 data is estimated and subject to change.

**2021 data has been revised from previous report.*

WHY DID PERFORMANCE CHANGE?

▰ OTP has been fairly steady across modes, except for an increase in 2022 for Mobility Paratransit and taxi access to 91% after a drop to 76% in 2021

▰ The recently completed North Avenue Rising Project, which includes 5.5 miles of dedicated bus lanes, bus stop improvements, intersection improvements, and bicycle and pedestrian safety projects, will benefit the OTP of buses in Baltimore traveling along the corridor

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ MDOT MTA is incorporating the use of increasingly sophisticated technologies to help us better understand customer demand patterns while also enabling us to build better schedules and routes

▰ MDOT MTA now has real-time information available on all transit modes, but will continue to improve real-time communications with our customers, which will allow for a better riding experience by enabling customers to plan their trips more accurately

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

ON TARGET

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 DURING THE EVENING PEAK HOUR

BETTER ▼

Year	Freeways/Expressways	Arterials
2014	24.2%	12.8%
2015	27.6%	13.2%
2016	26.4%	13.2%
2017	29.2%	13.5%
2018	29.0%	12.7%
2019	31.4%	13.6%
2020	7.3% / 4.1%	6.9%
2021**	11.0%	6.9%
2022***	26.7%	12.7%

CALENDAR YEAR

■ 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: Percent of VMT in Congested Conditions on Arterials in Maryland During the Evening Peak Hour 13.4%

TARGET: Percent of VMT in Congested Conditions on Freeways/Expressways in Maryland During the Evening Peak Hour Short-Term: 26.7% (CY 2022) Long-Term: 31.2% (CY 2025)

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.

**2021 data have been revised from previous report.*

***2022 data are preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

▮ Due to the uncertainty related to the COVID-19 pandemic and recovery, the estimation of the levels of traffic volumes has been difficult to determine, thereby affecting the 2021 actual data and requiring revisions to the future estimated data

▮ Evening peak hour traffic volumes have decreased by approximately 2.5% for the first half of 2022 from 2019 levels

▮ MDOT SHA's Coordinated Highway Action Response Team (CHART) handled 65,839 events during 2021 in relation to clearing incidents and aiding disabled vehicles

▮ As traffic volumes continue to rebound from peak pandemic levels, the total number of crashes and incidents continue to remain high

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▮ MDOT SHA will carefully monitor truck and other vehicle-type congestion and reliability trends to invest strategically in freight corridors and highway networks as Maryland continues to recover from the COVID-19 pandemic

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

TARGET ACHIEVED

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 above capacity at peak hours. This measure tracks MDOT SHA and MDTA performance in reducing congestion on the state highway system. 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 better able to predict 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 allows MDOT to determine when system changes need to be made.

ANNUAL HOURS OF DELAY (THOUSANDS) / **PERCENTAGE OF RELIABLE TRAVEL TIME**

BETTER ▲

Year	Annual Hours of Delay (thousands)	Travel Time Reliability
2019	78,215	87%
2020*	31,750	94%
2021*	72,150	9%
2022**	74,300	12%

CALENDAR YEAR

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

TARGET: 77,650 hours of delay in 2022; 13% travel time reliability 2022

2021 data have been revised from previous report.

***2022 data are preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

▮ Traffic volumes decreased by approximately 10% for most of CY 2021 from CY 2019 levels due to the COVID-19 pandemic

▮ MDOT SHA's CHART handled approximately 65,839 incidents and disabled vehicle events during 2021 in relation to clearing incidents and aiding disabled vehicles

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▮ The development and streamlining of active traffic management and integrated corridor management capabilities

▮ Evaluation of the CHART patrol program to determine continuing improvements in reduction in roadway delays and user cost savings

▮ Advancement of major TSMO projects, such as the planned deployment of peak-hour shoulder use along I-695, ramp-metering along I-270, deck rehabilitation and joint modifications on I-95, and work on the Bay Bridge Automated Lane Closure System (ALCS)

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

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

MAKING PROGRESS

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.

MDOT CUSTOMER SATISFACTION WITH ACCURACY OF INFORMATION

REAL-TIME SURVEY RESULTS (MDOT SHA/MDTA)*

Accuracy of Information

83% SATISFIED
17% NOT SATISFIED

The survey data reported is 2021 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. 2022 survey data will be published in the 2024 Attainment Report.

REAL-TIME SURVEY RESULTS (MDOT MAA SHUTTLES AND PARKING)*

Accuracy of Information

92% SATISFIED
8% NOT SATISFIED

The survey data reported is 2021 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. 2022 survey data will be published in the 2024 Attainment Report.
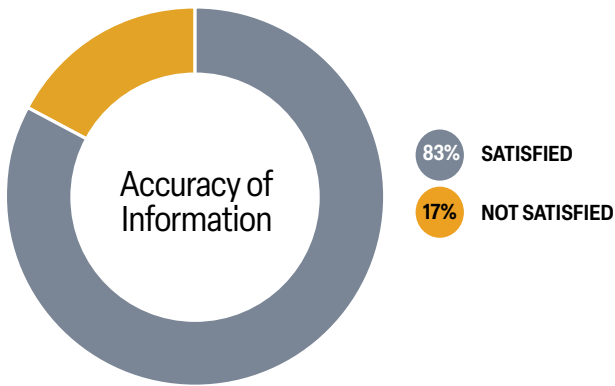
WHY DID PERFORMANCE CHANGE?

- MDOT MTA now allows riders to view live transit vehicle locations, arrival predictions, and crowding information on Transit App and Google Maps
- MDOT leveraged "Beyond the Bus Stop" federal grant funds to provide real-time digital signage pilot at three major transit hubs
- In August 2021, MDOT MAA opened a FirstCall Medical Center at the BWI Marshall Airport, which provides health care services for the traveling public and airport staff

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA is facilitating real-time signal timing adjustment to support Eastern Shore Traffic Operations (ESTO) during summer months using Advanced Traffic Signal Performance Measures (ATSPM)
- To make way for enhanced TSMO and the deployment of Connected and Automated Transportation Systems (CATS), the Office of Transportation Mobility and Operations installs advanced traffic management system (ATMS) and advanced traffic information system (ATIS) technologies on interstate highways and arterials statewide as an ongoing effort; these include, but are not limited to, cameras, traffic detectors, weather sensors, Dynamic Messaging Signs (DMS), highway advisory radios (HAR), connected vehicle roadside units, websites, and telecommunication networks
- MDOT MTA's program Fast Forward: Customer Experience Enhancement Program, a $43 million initiative improving transit reliability, travel times, and customer safety and access, is expected to be completed by the end of 2023; this program will design and construct additional dedicated bus lanes, create new and enhanced transit hubs, add more bus shelters, make ADA and pedestrian safety improvements at and near bus stops, improve real-time signs, and enhance wayfinding at Light Rail stations by the end of 2024
- To meet the growing need for traveler WiFi and cellular connectivity, MDOT MAA embarked on a program to improve service throughout the BWI Marshall Airport terminal; as of FY 2022, MDOT MAA continues to expand and improve the services provided and Airport Service Quality (ASQ) passenger survey scores for BWI Marshall Airport's WiFi/Cellular service are on the rise

REAL-TIME SURVEY RESULTS (MDOT MTA MARC, LIGHT RAIL, METRO SUBWAY, AND BUS)*
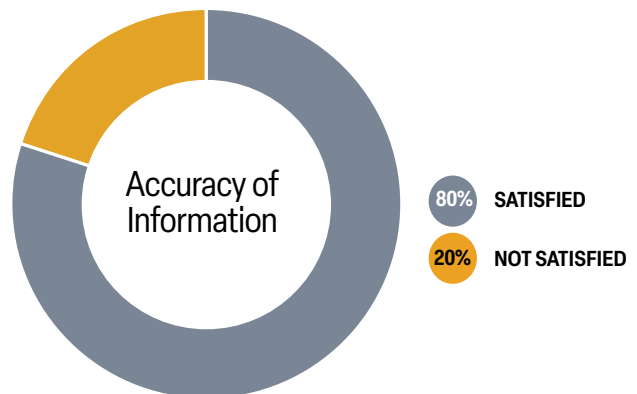
Accuracy of Information

80% SATISFIED
20% NOT SATISFIED

The survey data reported is 2021 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. 2022 survey data will be published in the 2024 Attainment Report.
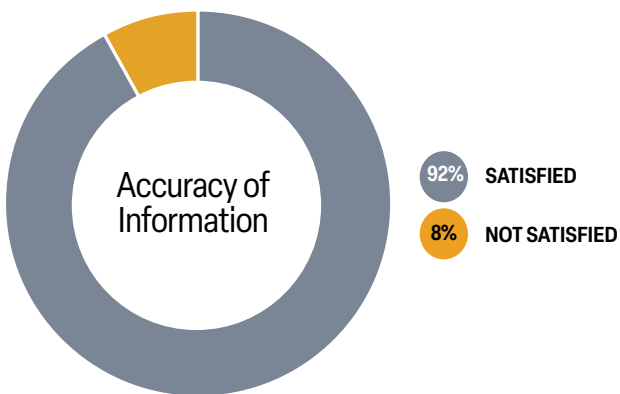
Goal Ensure Environmental Protection and Sensitivity

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 the 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's actions encompass climate change mitigation by reducing GHG emissions, increasing climate adaptation and resiliency, and conservation of resources for more sustainable operations and service delivery. MDOT's Transportation Business Units (TBUs) continue to reduce the 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. An example of this is the conversion to more energy efficient vehicles. MDOT MPA's Dray Truck Replacement Program has replaced 275 older dray trucks with newer, cleaner-running engines that reduce emissions. The Diesel Equipment Upgrade Program has replaced or retrofitted diesel cargo-handling equipment such as forklifts, top loaders, locomotives, and tugs with cleaner engines. Other MDOT TBUs are replacing light duty fleet vehicles with electric vehicle (EV) models in response to legislation passed in 2021 and 2022. MDOT MTA, also in response to legislation mandates passed in 2021 and 2022, is planning facility upgrades and installation of charging infrastructure in preparation for introducing zero emission buses (ZEBs) into the MDOT MTA transit bus fleet. MDOT MAA is planning to replace parking lot shuttle buses at BWI Marshall Airport with electric models.

Maryland continues to be a leader in zero emission vehicles (ZEV) and ZEV infrastructure. In 2022, Maryland was ranked as the 6th best state by the American Council for Energy-Efficient Economy for its policy and program efforts supporting electrification deployment. Maryland also was among the first states in the nation to submit their National Electric Vehicle Infrastructure (NEVI) Plan to the Joint Office of the U.S. Department of Transportation (U.S. DOT) and the U.S. Department of Energy ahead of the August 1, 2022, deadline. The NEVI plan, as required by the 2021 U.S. Infrastructure Investment and Jobs Act (IIJA), and federally approved in September 2022, describes how $57 million in federal funds will be allocated to EV charging infrastructure in Maryland. This plan is vital to support the growing number of EVs in Maryland and in the country. As of June 30, 2022, there are more than 52,300 registered EVs in Maryland—a 50% increase from the previous year. Currently, there are more than 1,200 charging stations with more than 3,300 outlets, of which 20% are DC Fast chargers (DCFCs), in Maryland.

Maryland is dedicated to protecting and enhancing its natural resources. In 2021, MDOT established the Urban Tree Program, providing grant funding to replace trees in communities where transportation construction projects impacted tree cover. MDTA initiated and completed the Chesapeake Bay Crossing Study Tier 1 National Environmental Policy Act (NEPA), and the Federal Highway Administration (FHWA) approved the Bay Crossing Study Tier 1 combined Final Environmental Impact Statement and Record of Decision (FEIS/ROD) that identifies Corridor 7—the corridor containing the existing Bay Bridge—as the Selected Corridor Alternative. MDOT also is committed to preserving cultural resources by identifying important historic site locations along our transportation system. MDOT supports the preservation and study of significant historic sites along scenic byways including Harriet Tubman's Birthplace in Dorchester County. Recent discoveries on the Tubman family are incorporated into public interpretive signage and exhibits located along the Harriet Tubman Underground Railroad Byway.

MDOT ENVIRONMENTAL INITIATIVES

MDOT MAA: Working collaboratively with the Maryland Department of Natural Resources (MDNR), MDOT MAA finalized a Forest Conservation Easement (FCE) encompassing more than 122 acres, which includes 84 acres of wetlands of special state concern (WSSC). The FCE benefits rare, threatened, and endangered (RTE) species located within the easement and MDOT MAA by serving as forest mitigation to support ongoing development at BWI Marshall Airport. Also at BWI Marshall Airport, the Kitten Branch Stream Restoration is a compensatory mitigation project that was constructed in 2014, which MDOT MAA continues ongoing monitoring and adaptive management. Project objectives of channel stability, vigorous vegetative establishment, and low invasive species coverage continue to improve. In FY 2022, a Phase 3 Adaptive Management Repair Project was completed to enhance geomorphic stability. MDOT MAA also is implementing lighting improvements at four facilities at Martin State Airport. These improvements, funded with a 71% Baltimore Gas & Electric (BGE) grant, are estimated to reduce annual energy use in those facilities by 63% and save more than $5,600 per year in operating expense.

MDOT TSO: In response to IIJA, MDOT prepared the Maryland State Plan for NEVI Formula Funding Deployment, describing how $57 million in federal funds will be allocated to EV charging infrastructure in Maryland. This plan has become more necessary as between July 2021 and July 2022, EV ownership in Maryland increased by more than 46% from 30,080 to 52,966 registrations. In 2021, MDOT established the Urban Tree Program, providing grant funding to replace trees in communities where transportation construction projects impacted tree cover. MDOT TSO received several awards in 2022, including a Maryland Quality Initiative (MdQI) Innovation Award for its $3.1 million Smart Ponds project, which installed monitoring and adaptive control features at stormwater ponds in Aberdeen, Hagerstown, and Fruitland to increase retention time and water quality and the Electronic Product Environmental Assessment Tool (EPEAT) Purchaser Award in four product categories, highlighting the commitment to sustainable electronics purchasing. MDOT is the only state DOT in the world to be recognized for this.

MDOT MTA: MDOT MTA is planning facility upgrades and installation of charging infrastructure, in preparation for introducing ZEBs into the MDOT MTA transit bus fleet. To support the growing demand for EV charging infrastructure, Maryland is working to deploy a robust EV supply equipment (EVSE) infrastructure of more than 1,200 charging stations and 3,300 charging outlets. Of these, 24 EV charging stations are available at Light Rail, Metro, bus, and MARC train stations, providing an EV-to-transit connection by allowing EV drivers to charge their vehicles at the transit station while completing their trips using transit.

MDTA: MDTA initiated and completed the Chesapeake Bay Crossing Study Tier 1 NEPA, and the FHWA approved the Bay Crossing Study Tier 1 combined FEIS/ROD that identifies Corridor 7—the corridor containing the existing Bay Bridge—as the Selected Corridor Alternative. MDTA also won an environmental award for Carsins Run Stream Restoration. MDTA also opened the 924/24 Park and Ride with bus shelters accommodating Harford Transit Blue Line service and sidewalks installed to create pedestrian access connection to MDOT MTA 410 bus transit line.

MDOT MPA: In 2022, MDOT MPA and the U.S. Army Corps of Engineers signed a Project Partnership Agreement (PPA) for the $4 billion Mid-Chesapeake Bay ecosystem restoration project to rebuild the James and Barren islands using dredged materials. MDOT MPA also convened the Mid Bay Resiliency Working Group, a collaborative effort across state and federal resource agencies and stakeholders to maximize the coastal resiliency benefits of the project. The Barren Island restoration will create 72 acres of wetlands habitat, protect and preserve sub-aquatic vegetation, and improve water quality.

MDOT MVA: In December 2021, MDOT MVA completed its information technology (IT) modernization project known as Customer Connect, which enhanced the customer's experience by providing greater access to information, security, and the ability to conduct more online transactions than ever before. Customer Connect provides customers and employees with a complete view of the customer's status and history with the MDOT MVA by linking their driver and vehicle accounts. MDOT MVA also is becoming a "one-stop-shop" by partnering with other Maryland agencies, including MDNR, MDTA, Department of Veteran Affairs, and most recently the Maryland Department of Health to issue birth certificates of Maryland-born customers at select MDOT MVA branch offices to assist with the federal REAL ID document requirements. These innovations and collaborations increase efficiencies and reduce required trips for customers.

MDOT SHA: MDOT SHA is identifying opportunities in operations and maintenance to meet specific GHG emissions reductions and direct emissions targets at MDOT SHA facilities. MDOT SHA also will coordinate with partners and stakeholders to review legislation establishing GHG performance measures and, if enacted, coordinate with partners and stakeholders to establish performance targets. MDOT SHA also funded a Freight AV Feasibility Study for FY 2023 to identify civil projects for AV freight vehicles, which will support the reduction in fuel consumption by heavy vehicles.

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* **

ON TARGET

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 by CALENDAR YEAR

Year	Acres
2013	87
2014	68
2015	95
2016	60
2017	10
2018	209
2019	2
2020	22
2021	21
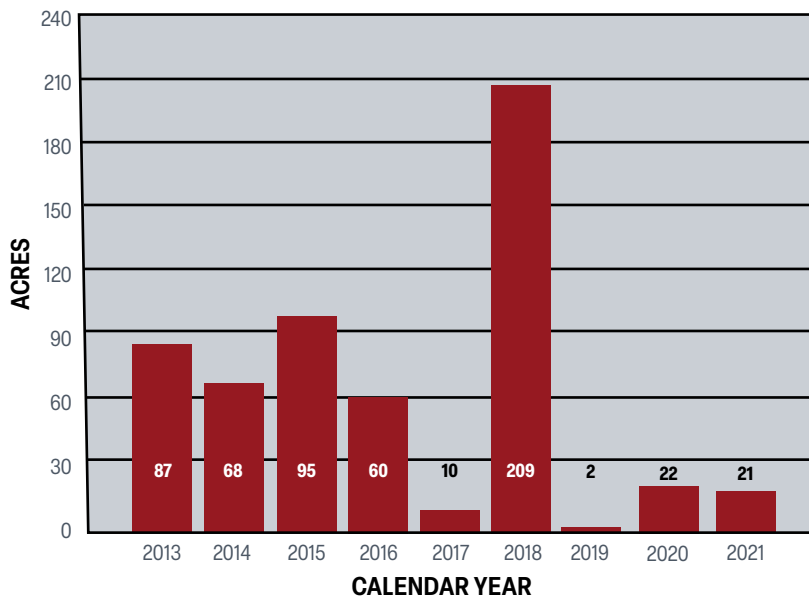
Acres created, restored, or improved depend on the amount of mitigation obligated by project permits in a given year, as well as the construction completion date for the mitigation projects. Data is a sum of acres of wetlands or wildlife habitat created, restored, or improved by MDTA, MDOT MPA, or MDOT SHA.

***Due to newly available data, data have been revised from previous reports.*

WHY DID PERFORMANCE CHANGE?

▌ The amount of wetland and/or wildlife habitat acres created, restored, or improved annually by Office of Environmental Design (OED) mitigation projects is dependent on the amount of mitigation obligated by project permits in a given year; several OED mitigation projects are under development currently and will continue to deliver required mitigation during the next several years

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT MPA looks to create wetlands and/or wildlife habitat through its Dredged Material Management Program (DMMP); Poplar Island was recently expanded to be a dredged material facility through the early 2030s, which will create an estimated 700+ acres of wetland and wildlife habitat; when Poplar Island is no longer able to accept dredged material, the Mid-Chesapeake Bay Island Restoration Project will restore more than 2,000 acres of wildlife and wetland over its lifetime

▌ MDOT SHA will continue to identify environmental impacts during project development and meet mitigation requirements as obligated in the project permits

▌ MDTA will be using existing Nice/Middleton bridge materials for artificial reef habitat creation on the lower Potomac River

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

TARGET ACHIEVED

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 / PERCENTAGE by FISCAL YEAR

TARGET: 4,621

Fiscal Year	Acres of Impervious Surface Restoration	Percentage of Restoration Goal Achieved
2017	2,631	57%
2018	3,006	65%
2019	3,416	74%
2020	7,291	158%
2021	8,100	175%
2022	8,692	188%
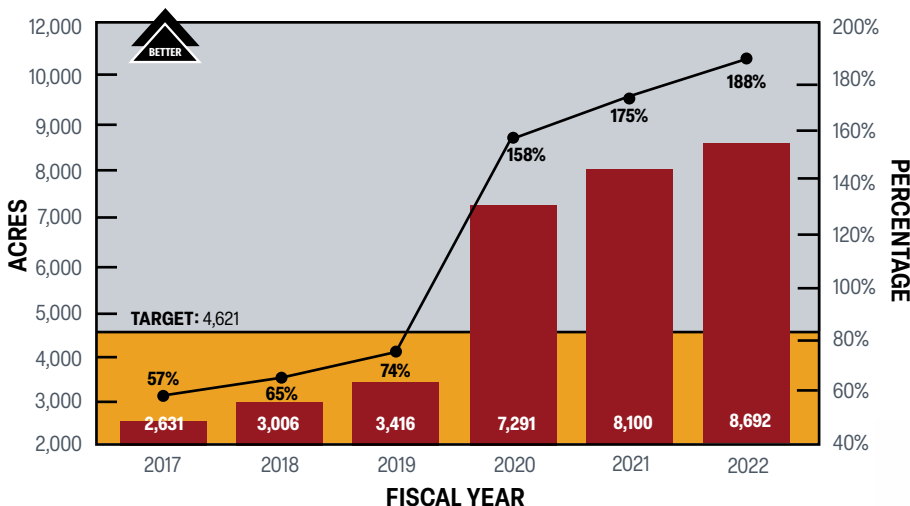
Acres of Impervious Surface Restoration ■   Percentage of Restoration Goal Achieved ●—

TARGET: 4,621 acres by October 2020

Data is reported cumulatively.

***Restoration best management practices (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 achieved 188% of the permit goal (20%) by treating its impervious surfaces not previously treated by stormwater management controls; approximately 8,692 impervious acres were treated by MDOT SHA through October 2021 to reduce pollution entering local waterways and ultimately the Chesapeake Bay

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▌ MDOT SHA's permit has been administratively continued and is in the planning phase preparing for the issuance of the next 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*

ON TARGET

For years, MDOT has been working to minimize waste, reuse materials, and reduce GHG emissions through energy efficiencies and alternative energy sources. This measure tracks this progress for asphalt, metals, and concrete from maintenance activities and construction/ demolition projects. These combined efforts will save money and make Maryland communities more livable for decades to come.

TONS

	2017	2018	2019	2020	2021
Concrete	2,531	31,358	9,085	532	22,019
Metals	2,604	1,707	1,408	1,077	1,642
Asphalt	158,929	85,332	138,332	106,078	185,394

CALENDAR YEAR

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

WHY DID PERFORMANCE CHANGE?

▟ The use of recycled asphalt pavement (RAP) materials in Hot Mix Asphalt (HMA) in CY 2021 was 22.5%, which is consistent with usage in previous years (20%-22%); the variations in the tonnages per year reflect the changes in the yearly tonnage of asphalt mix place; so far in CY 2022, the average RAP used in state paving projects are 29% and this could go down to around 25% as we use more specialty mixes for interstate paving

▟ Contractors can choose recycled concrete-graded aggregate base (RC-GAB) instead of conventional GAB material, provided the material specifications are met

▟ The tonnage of RC-GAB used in CY 2018 (10,180 tons) was greater than the average for the period 2012-2018 (8,997 tons); RC-GAB usage increased in 2019 to 12,490 tons and subsequently decreased during the COVID-19 pandemic
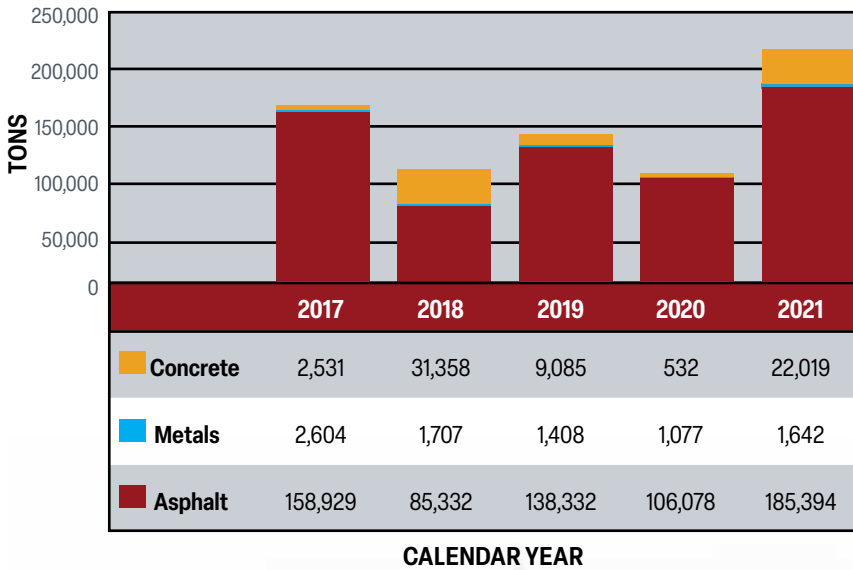
▟ During the COVID-19 pandemic, MDOT SHA increased its number of mill and pave asphalt projects so there was not enough scope to use RC-GAB as much as expected when completing full-depth pavement rehabilitation projects; as more full-depth pavement rehabilitation projects are done, it is expected that RC-GAB usage will increase if more than one Qualified Plant produces RC-GAB

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ MDOT SHA is trying to implement balanced mix design technologies on an experimental basis in asphalt paving projects starting from CY 2023, this could increase the usage of recycled materials in asphalt paving projects without compromising the pavement performance

UTILITY ELECTRICITY USE AND RENEWABLE ENERGY GENERATION

MAKING PROGRESS
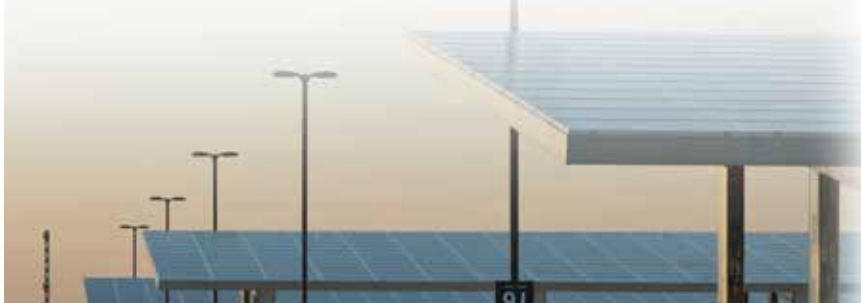
MDOT is committed to reducing electricity consumption through efficiency measures and renewable energy sources to help Maryland reach its clean energy and GHG reduction goals. Reducing energy consumption and generating renewable energy can save Maryland taxpayers money, generate revenue, and decrease 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)	2017	2018	2019	2020	2021
Electricity Use	364	379	367	338	343
Renewable Energy Generation	1.629	1.431	1.275	1.127	1.155

WHY DID PERFORMANCE CHANGE?

▟ Electricity use has decreased overall over time due to energy efficiency measures implemented across MDOT

▟ The COVID-19 pandemic caused many MDOT staff members to work from home, reducing MDOT's in-office electricity consumption; this number rose slightly in 2021 as more staff went back to working in the office, but still follows an overall decrease since pre-pandemic

▟ Many buildings across the state did see an increase in natural gas consumption as COVID-related HVAC policies required more outdoor/"fresh" air to be used; now that MDOT staff have returned to state-owned buildings, usage is more consistent with previous years of decreased electricity use

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ Maintenance projects are planned for several photovoltaic (PV) systems, which will increase renewable energy generation statistics in the future

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

TRANSPORTATION-RELATED EMISSIONS BY REGION

ON TARGET

Emission reduction strategies foster transportation alternatives to single occupancy vehicle travel, including bicycle and pedestrian projects, transit improvements, and other travel demand management (TDM) strategies, such as telecommuting, alternative work schedules, and carpooling. These transportation alternatives are promoted through MDOT's Commuter Choice Maryland program. Providing reliable, safe transportation alternatives helps to reduce fuel consumption, improve air quality, and improve public health.

TONS PER DAY / CALENDAR YEAR

BETTER

— Baltimore — Washington* — Other
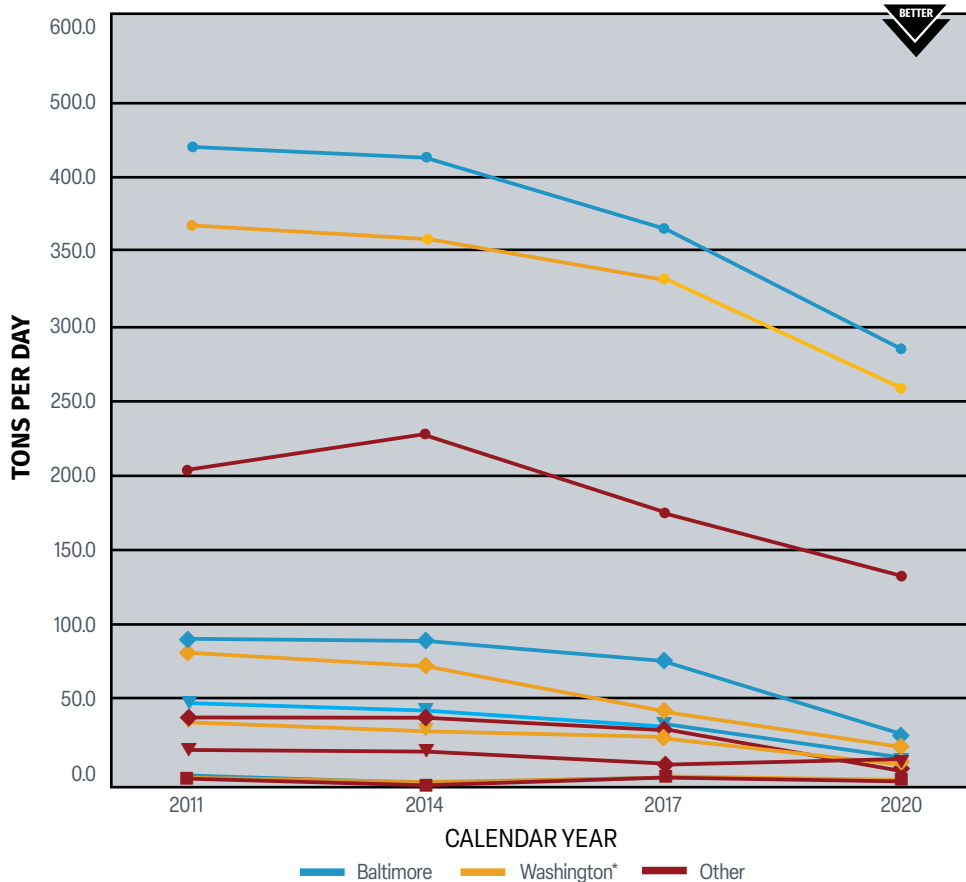
WHY DID PERFORMANCE CHANGE?

▮ The number of EVs registered in Maryland continues to grow and in 2022 topped 1% of vehicles on the road, exceeding 52,000 EVs in June

▮ Through the Congestion Mitigation and Air Quality (CMAQ) program, MDOT invested more than $1 million on three new projects in federal FY 2021, and more than $45 million on continuing projects; CMAQ funding supported traffic signal systemization, ride sharing, transit improvements, transit bus replacements, and Metro rail-car upgrades

▮ Maryland's Port of Baltimore has been successful at securing grants for emissions reduction projects, including from the U.S. Environmental Protection Agency's (EPA) Diesel Emissions Reduction Act (DERA) Program, allowing the conversion of Dray Trucks to cleaner engines

▮ In the Washington region, the Purple Line Capital Crescent Trail is funded for construction; MDOT continues to invest in bicycle and pedestrian projects with grant awards through the Transportation Alternatives and Kim Lamphier Bikeways Network programs

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▮ Investments in projects that benefit air quality by MDOT MTA, MDOT MAA, and MDOT MPA are planned or underway, including programs to convert vehicles and equipment to electric models

PERFORMANCE MEASURE	REGION	CALENDAR YEAR			
		2011	2014	2017	2020
▼ Volatile Organic Compound (VOC) Tons per Day	Baltimore	45.5	41.3	25.9	18.9
	Washington*	39.2	35.4	23.9	16.8
	Other	20.7	21.1	13.4	8.8
◆ Nitrogen Oxide (NOx) Tons per Day	Baltimore	89.5	79.5	53.7	33.4
	Washington*	74.4	63.3	45.3	27.7
	Other	44.4	44.2	32.8	20.1
● Carbon Monoxide (CO) Tons per Day	Baltimore	445.1	431.8	365	283.8
	Washington*	363.6	352.6	335.5	257.1
	Other	202.4	229.1	180.1	145.3
■ Particulate Matter (PM2.5) Tons per Day	Baltimore	3.5	3.4	2.2	1.3
	Washington*	2.9	2.7	1.9	1.1
	Other	1.4	1.5	1.1	0.6

*Maryland portion of Washington region includes Montgomery, Prince George's, Frederick, and Charles counties.

TRANSPORTATION RELATED GREENHOUSE GAS (GHG) EMISSIONS

MAKING PROGRESS

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

BETTER

Calendar Year	On-Road Mobile Source GHG Emissions (MMT)
2014	29.98
2015	29.69
2016	29.21
2017	28.62
2018	27.93
2019	27.58
2020	22.92
2021***	26.45
2022****	26.45

CALENDAR YEAR
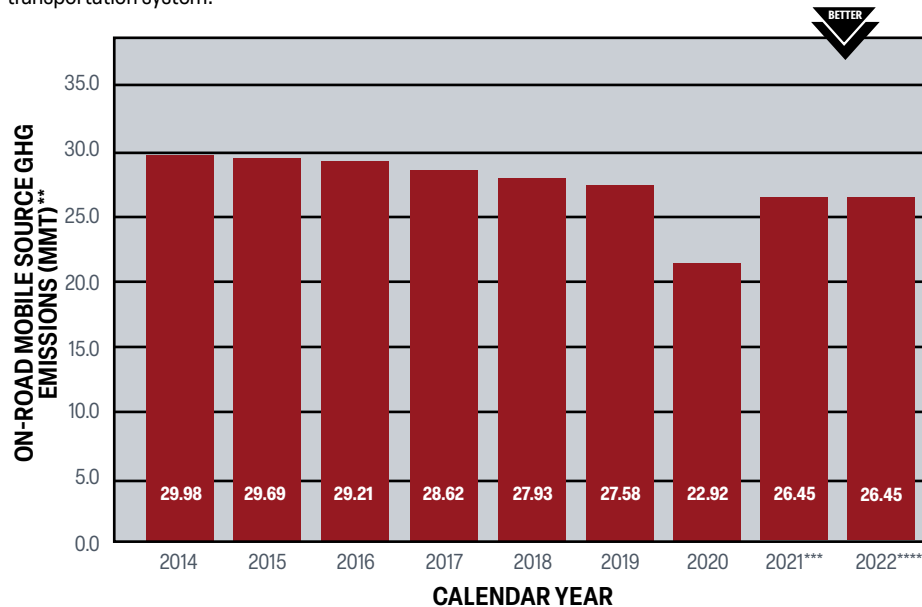
TARGET: 25% below 2006 emissions by 2020. For on-road transportation, the goal equals 23.5 mmt CO2e in 2021 and 40% below 2006 emissions by 2030*

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 EPAs MOVES model available at time of analysis. MOVES2014a is used for analysis year 2016, 2017, 2018, and 2019. HPMS VMT.*

****2021 data has been revised from previous report.*

*****2022 is preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

/ The pandemic affected changes in travel behavior as people and industries adapted to disruptions; telework continued a steady trend upward as more employers adopted telework arrangements; freight activity also has increased as more people rely on e-commerce

/ MDOT's Commuter Choice Program launched the incenTrip mobile app and continued to promote alternative commute options to employers and commuters through a variety of outreach activities

/ Efficiency of the on-road vehicle fleet continued to improve as older vehicles were replaced with newer vehicles that meet more stringent emission standards

/ EVs were a growing share of the on-road fleet and in 2022 topped 1% of vehicles on the road

/ MDOT maintains more than 100 Park-and-Ride lots across the state, which enable drivers to access buses, rideshare, and other forms of transit; MDOT SHA's Ride Share program offers an online interactive map to users who wish to access the location, space availability, Americans With Disabilities Act (ADA) features, and amenities of each Park-and-Ride lot

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

/ To meet a 40% reduction in GHG emissions by 2030, a reduction of 18.43 million metric tons of CO2 equivalent is needed; MDOT is taking a multi-pronged approach to achieve this goal

/ Implementation of congestion mitigation measures to improve travel and freight reliability is one strategy employed to reduce GHG emissions; this includes all initiatives under the Transportation System Management and Operations (TSMO) umbrella

/ Another strategy is the adoption of vehicle and fuel technologies that reduce consumption of fossil fuels, including Intelligent Transportation System (ITS), Connected and Automated Vehicles (CAVs), and EVs

/ Continued investment in infrastructure for non-motorized forms of transportation is vital, including bicycle and pedestrian options

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

Encouraging the adoption of EVs among Maryland residents requires communication of the benefits of EVs, education about the charging options available, and publicity about charging station locations. MDOT has an important role to play with other public agencies and the private sector to build-out the charging infrastructure strategically in a manner that allows for easy charging along corridors people commonly traverse. State and federal agencies, along with utility companies, provide financial incentives for EVs through tax benefits and rebates. As of June 2022, there were more than 52,000 registered EVs in Maryland—a 50% increase from the previous October. These vehicles are supported by a growing network of charging stations. In Maryland, there are more than 1,200 charging stations with more than 3,300 outlets, of which 20% are DCFCs.

MD EV charging corridors

68 70 81 83 95
97 270 495 695 795
4 5 32 100 200 140 295 528
1 13 15 50 301

NUMBER OF VEHICLES

FISCAL YEAR	BEV**	PHEV**	Total
2018	5,495	7,712	13,207
2019	10,938	9,784	20,722
2020	14,930	10,812	25,742
2021	21,076	13,765	34,841
2022	33,230	19,089	52,319

BETTER
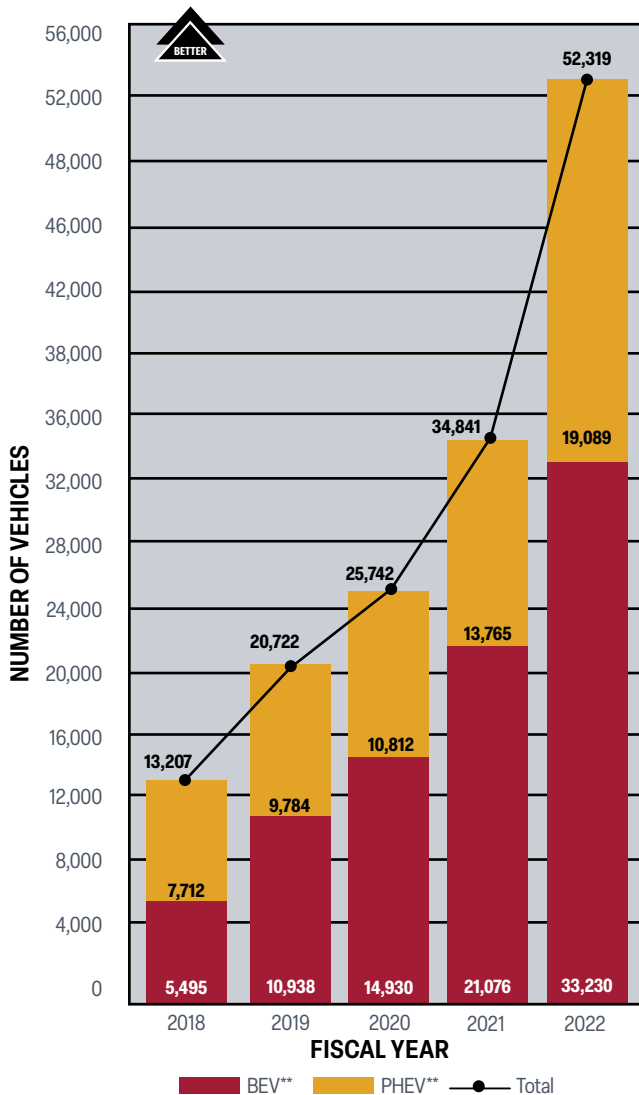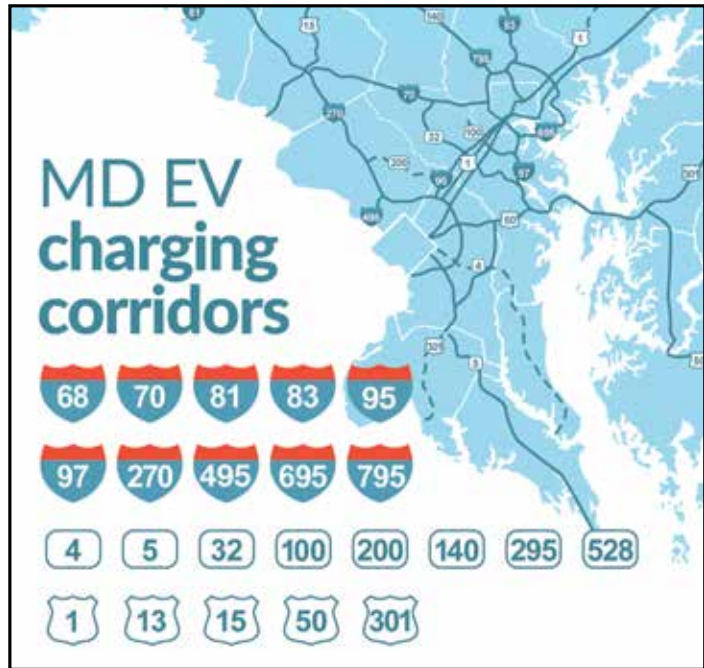
TARGET: 300,000 by 2030

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 23 electric vehicle alternative fuel corridors (EV-AFCs), with the newest corridor, the Intercounty Connector/MD 200, nominated in May 2022; EV drivers can find publicly accessible EV charging stations in close proximity of EV-AFCs

▰ In FY 2021 and FY 2022 combined, MDOT TBUs purchased 55 Hybrid EVs (HEVs), nine Plug-in Hybrid EVs (PHEVs), and one Battery Electric Vehicle (BEV); these purchases were among the 130 EVs purchased for the state fleet in FY 2021 and FY 2022

▰ The number of publicly accessible EV charging stations in Maryland grew to 1,241 stations and 3,373 outlets by the end of June 2022, in response to growing demand and more EVs on the road

▰ Through a pilot program authorized by the Public Service Commission, Maryland's public utilities are installing EV charging stations at sites across the state; as a result of this pilot program, EV charging stations are now located at BWI Marshall Airport, at the Bay Bridge *E-ZPass*® Office, at certain MDOT MVA facilities, at the North Linthicum Light Rail station, and at several MDOT SHA facilities and Park-and-Ride lots

▰ Public interest in EVs continues to grow, affected by the cost of gasoline, automaker commitments to bring more EV models to market, heightened interest in climate change, and new federal commitments to electrification

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ In response to the NEVI Program established by the Bipartisan Infrastructure Law (BIL), MDOT prepared the NEVI Plan describing how $57 million in federal funds will be allocated to EV charging infrastructure in Maryland during the next five years

▰ The focus of NEVI Formula Funding in the short-term will be on building out and certifying Maryland's 23 EV-AFCs; long-term focus will be building out community charging in rural and disadvantaged communities

▰ In addition to NEVI Formula funds, discretionary NEVI funds are expected to become available in late 2022

▰ MDOT continues to lead the Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC), which provides a public forum for discussion and information-sharing from interested parties and stakeholders engaged in expansion of ZEV infrastructure in Maryland as well as conversion of state fleets

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

MAKING PROGRESS

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

Chart: MINUTES/COMPLIANCE RATE (%) and NUMBER OF VEHICLES TESTED (THOUSANDS) by FISCAL YEAR

Fiscal Year	Compliance rate	Wait time (minutes)	Vehicles tested
2013	88%	5	1,699
2014	92%	6	1,736
2015	92%	5	1,795
2016	93%	5	1,790
2017	95%	5	1,813
2018	95%	5	1,792
2019**	91%	3	1,715
2020**	87%	3	1,087
2021**	65%	5	1,397
2022***	95%	5	1,881

Legend: Number of vehicles tested at VEIP — VEIP compliance rate — Average Customer Wait Time in Minutes

*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.

**2019, 2020, 2021 data have been revised from previous report.

**2022 data are preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

▰ All MDOT MVA VEIP stations were fully operational during FY 2022; as a result, testing volumes increased from previous years as customers not testing during 2021 and 2022 because of COVID-19 returned to the testing pool

▰ As testing volumes increased statewide, compliance rates and wait times normalized to pre COVID-19 levels due to all MDOT MVA VEIP stations being fully operational, appropriate staffing levels to support operations, and a higher percentage of customers using the 24-hour self-serve VEIP kiosk

▰ MDOT MVA modernized IT systems to allow for both the agency and customers to have more rapid and reliable access to VEIP testing information and better communication regarding testing and compliance requirements

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ Continue to modernize VEIP to improve customer service benefits and preserve air quality progress achieved by the state; MDOT MVA and the Maryland Department of the Environment (MDE) continue to monitor the ongoing advancements with an emphasis in technology and innovation in vehicle manufacturing and vehicle emissions testing industries

▰ Issue new VEIP contract to further improve VEIP performance and customer convenience

Goal Promote Fiscal Responsibility

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

OBJECTIVES:

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

◢ Provide transportation services and solutions that maximize value

◢ Ensure a consistent revenue stream and ample financing opportunities

As financial custodians of the revenues and user fees that fund Maryland's transportation system, MDOT must maximize the value of its transportation investments while addressing the needs of all users. Fiscal responsibility is realized through thoughtful project and asset management, innovative project delivery, and effective fund management and reallocation. MDOT continues to identify ways to modernize project delivery and fund cost-effective and valuable projects. MDOT MVA's Alternative Service Delivery (ASD) initiative is one example. ASD methods include online and kiosk services, which are now used by 74% of customers to complete a transaction. Allowing customers to conduct MDOT MVA business in multiple ways saves costs for MDOT in the long run.

MDOT SHA made a large investment in the past year to improve incident management. In 2021, MDOT SHA completed the $5.6 million renovation and reimagination of its Statewide Operations Center (SOC). The original SOC, one of the first such centers in the nation, opened and served the state of Maryland for 25 years. The new layout nearly doubles the original footprint and features an innovative concept called the "operations football," with operators sitting closer together and not directly facing a central video wall. This concept improves communication and collaboration among team members during traffic incidents, emergencies, and storms. Technological advances include an operator's ability to highlight dashboards, weather maps, and web pages on wall monitors, enabling operators to focus on the day's most essential emergencies, such as severe weather and major traffic incidents. The new consoles also provide each workstation with an additional monitor to manage critical situations.

To best utilize available resources to fund critical repairs, replacement, or expand infrastructure, Maryland utilizes innovative alternative delivery methods. Public-Private Partnerships (P3s), Design-Build (DB), Construction Management at Risk Projects (CMAR), and other delivery methods are evaluated for each major project. P3s require underlying revenue sources through state or federal agencies, such as tolls, fares, rents, user fees, or availability payments to the private sector partner.

There are several successful examples of P3s across the state. One example is the high occupancy toll (HOT) lanes project on portions of I-270 and I-495, which is to be managed as a P3 with Australian toll road operator Transurban, who will finance, build, and manage the lanes. This project's environmental impact statement was approved recently by the Federal Highway Administration (FHWA) and will provide congestion relief to some of the country's worst traffic bottlenecks. The P3 agreement with Ports America Chesapeake (PAC) continues to solidify the Port of Baltimore's position as Maryland's economic engine. As a result of continued growth in business, PAC invested in the second 50-foot-deep berth project at Seagirt Marine Terminal. This $122.1 million investment includeded $105 million from PAC, $10.5 million from the state and $6.6 million in federal funding. MDTA partnered with Areas USA for the redevelopment and subsequent operations and maintenance of two travel plazas along the I-95 corridor in Harford and Cecil counties. Areas USA financed the $56 million project completed in 2014 and continues to operate and maintain these plazas through a long-term, 35-year agreement.

There also are valuable P3 examples of DB and CMAR projects. When replacing the 81-year-old Nice/Middleton Bridge with a new, wider, and safer Potomac River crossing, the MDTA was able to reduce the initial $1 billion price tag by more than $300 million by taking a practical design approach to the new bridge, which opened three months early in October 2022. The original two-lane, narrow bridge caused almost daily congestion and any routine maintenance and large-scale preservation efforts caused significant traffic impacts. MDOT MAA has embarked on a major terminal improvement program to improve operations and customer service at BWI Marshall Airport through the CMAR delivery method. The project will provide a new state-of-the-art baggage screening system to remove constraints to airline growth, a direct walking path between concourses A and B for connecting passengers, and a host of concessions and passenger improvements. The design is nearing completion as of late FY 2022 and initial enabling tasks, such as fuel hydrant and utility relocations, are under construction.

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

MDOT's transportation needs are assessed thoroughly to identify the best delivery method. P3, DB, 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 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. MDOT MTA also delivered Camden Station via CMAR. Construction on the MARC Riverside Heavy Maintenance Building was completed in December 2022, and MDOT MTA is planning to deliver the new Eastern Bus Facility. 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 DB alternative delivery on two major projects. The Nice/Middleton Bridge Replacement project opened to traffic in October 2022. The I-95 and Belvidere Road Interchange project completed planning activities and recently had a groundbreaking in October 2022. MDOT MVA has pursued an innovative delivery approach with the reconstruction of their Glen Burnie headquarters. They are securing a CMAR contract to renovate and consolidate ground floor operations with the ultimate goal of improving customer flow and enhancing customer service.
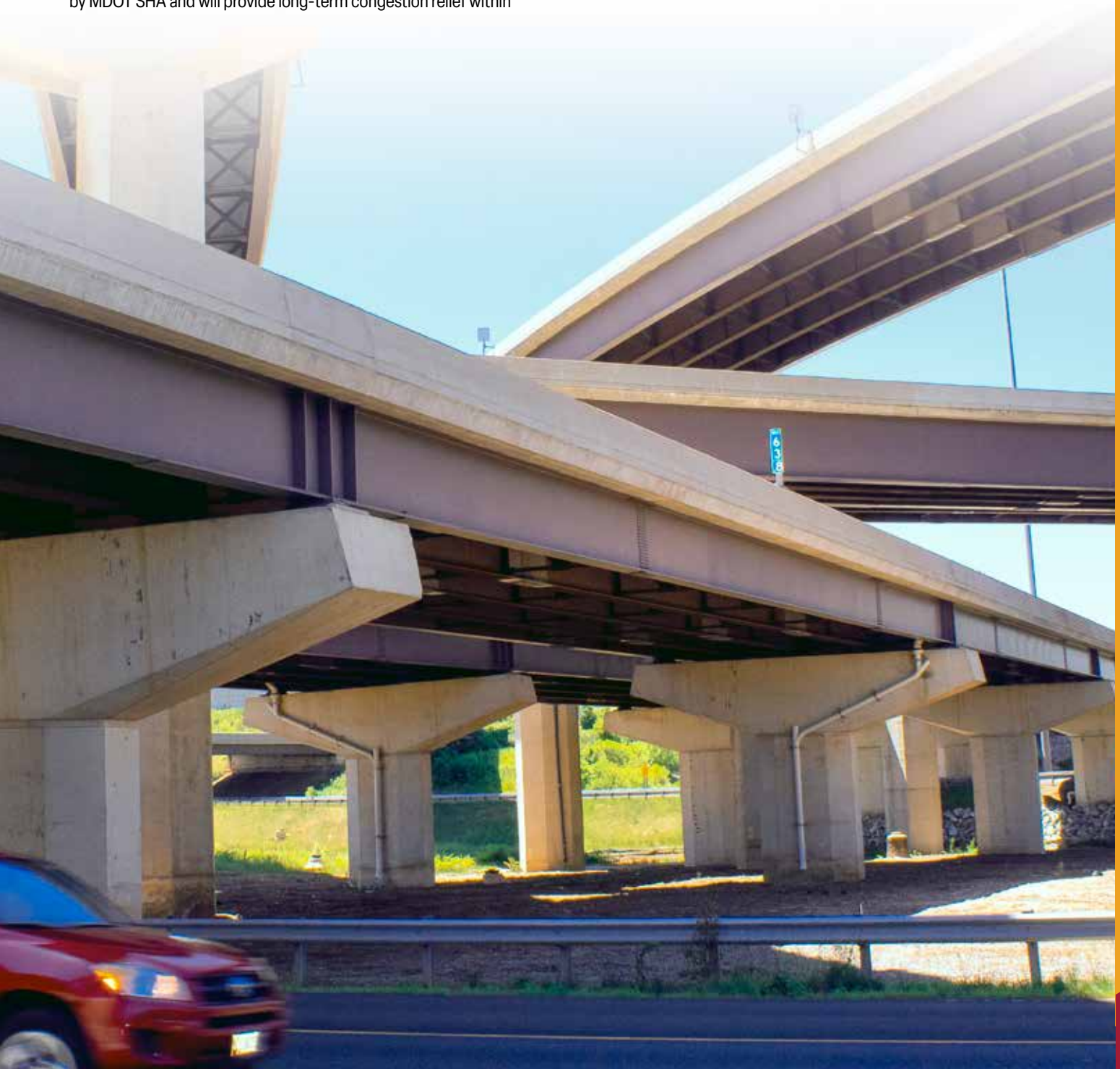
NUMBER OF NONSTOP AIRLINE MARKETS SERVED

TARGET ACHIVED

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.

WHY DID PERFORMANCE CHANGE?

▟ The number of nonstop markets served from BWI Marshall Airport has recovered to 86 destinations with new service from Air Senegal, Play, Icelandair, and Avelo and expanded service from existing carriers Frontier, Spirit, and Southwest

▟ Total passenger levels are still below pre-COVID FY 2019 levels and airlines have not rebuilt their route networks fully, particularly international destinations

▟ Several international airlines like Air Canada, Condor, and British Airways have resumed some service

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ BWI Marshall Airport continues efforts to be the most accessible and least complex airport to use in the region

Chart: NUMBER OF NONSTOP MARKETS SERVED by FISCAL YEAR

Fiscal Year	Number
2013	73
2014	74
2015	77
2016	79
2017	83
2018	85
2019	90
2020	93
2021	86
2022	86

BETTER

TARGET: 73 nonstop markets served

AIRLINE COST PER ENPLANED PASSENGER (CPE)

TARGET ACHIEVED

Airline operation costs, such as landing fees, fuel flowage fees, and terminal rents, support BWI Marshall Airport's competitiveness in a highly competitive region. BWI Marshall Airport is in a region with 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.

Chart: DOLLARS by FISCAL YEAR

Fiscal Year	BWI Marshall Airport CPE	Comparable Airports CPE mean amount
2013	$9.50	$17.38
2014*	$9.82	$17.01
2015	$9.86	$16.99
2016	$9.51	$16.10
2017	$9.34	$15.21
2018*	$9.33	$14.72
2019	$9.33	$14.03
2020*	$12.55	$26.57
2021	$11.95	$15.96

██ BWI Marshall Airport CPE   ██ Comparable Airports CPE mean amount
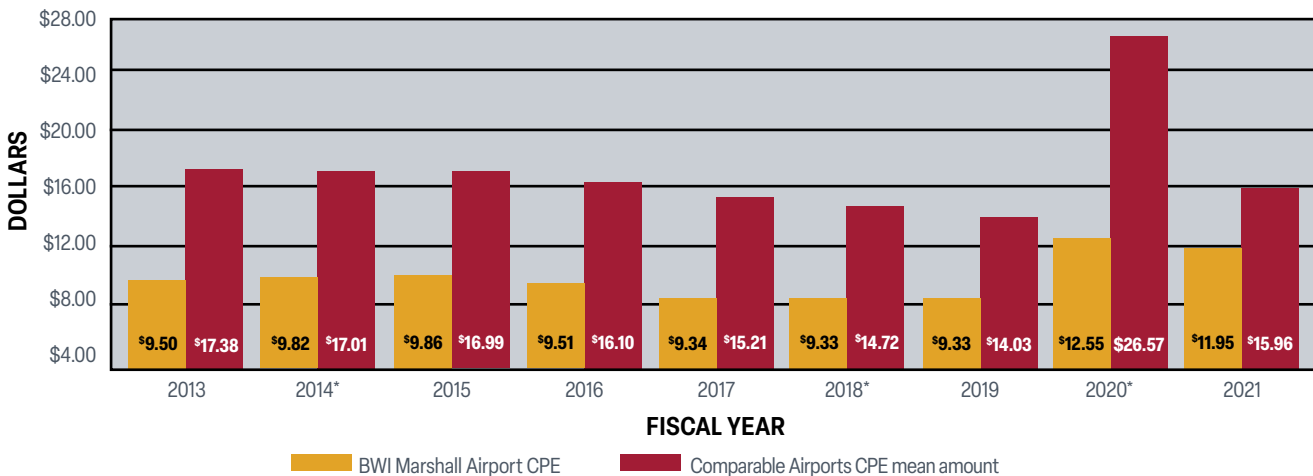
TARGET: BWI Marshall Airport CPE below the mean CPE of comparable airports**

Data have been revised from previous report.

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

WHY DID PERFORMANCE CHANGE?

▟ Enplanements at BWI Marshall Airport declined in FY 2021 due to the impacts of the COVID pandemic; as a result, airline operating costs were spread across a smaller number of airport enplanements, which increased CPE in FY 2021

USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT

TARGET ACHIVED

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.

DOLLARS (MILLIONS)

BETTER

Year	Value
2013	$1,163
2014	$1,264
2015	$1,356
2016	$1,512
2017	$1,500
2018	$1,312
2019	$1,393
2020	$1,080
2021*	$1,875
2022**	$1,350

CALENDAR YEAR
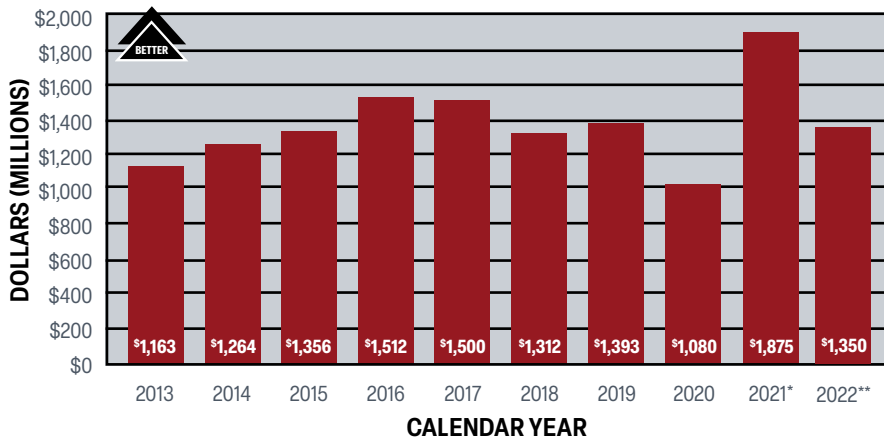
TARGET: $1,350 ($1.35 billion) million annually

2021 data has been revised from previous report.

**2022 data is preliminary and subject to change.*

WHY DID PERFORMANCE CHANGE?

◢ Incident management saved roadway users $1.87 billion in CY 2021, an increase in savings from CY 2020 ($1.08 billion) and handled 128,069 events, including incident responses, assistance with disabled vehicles, and traffic management operations for special and weather-related events

◢ Completed Traffic Message Channel (TMC) Signal Operations Concept of Operations with a view to integrate Freeway and Arterial Management Concept statewide and initiated ramp metering on I-270

◢ Partnered with the Office of Traffic and Safety (OOTS) as part of the TMC Signal Review Group to geocode all the traffic signals for better integration, searchability, and visibility and also to address peak travel congestion and Eastern Shore Traffic Operations (ESTO)

◢ MDOT SHA and MDTA employees are still responding to many incidents each year; in 2021, CHART responded to 65,839 incidents and disabled vehicles events on Marylands roads; in CY 2021, MDTA drivers patrolled more than 1.1 million miles, assisted drivers of 6,015 vehicles and changed 5,933 flat tires; they also removed 6,761 disabled vehicles from roadways

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

◢ Complete ongoing research initiatives, including Work Zone Data Exchange (WZDX), Mobile Road Weather Information System (MARWIS) integration, etc., aimed at improving safety and mobility

◢ Facilitate real-time signal timing adjustment to support ESTO during summer months using Advanced Traffic Signal Performance Measures (ATSPM)

◢ Continue to deploy field ITS assets (Closed Circuit Television Cameras, Traffic Detectors, etc.) to improve traffic monitoring and traveler information

◢ Continue to collaborate with Office of Highway Development to finalize the scope of Transportation System Management and Operations (TSMO) System 1 and initiate the next steps for deployment

OPERATING COST PER REVENUE VEHICLE MILE

MAKING PROGRESS

OPERATING COST PER REVENUE VEHICLE MILE

BETTER ▼

LOCAL BUS

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
$11.85	$13.30	$13.64	$13.55	$13.68	$14.65	$16.03	$16.50	$16.60	$16.80

LIGHT RAIL

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
$11.60	$12.98	$15.11	$13.82	$13.96	$14.70	$15.80	$17.80	$22.32	$20.13

BALTIMORE METRO

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022*
$10.12	$11.18	$11.25	$10.56	$10.67	$13.78	$17.80	$16.90	$18.52	$17.50

MOBILITY PARATRANSIT

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
$6.06	$5.14	$5.16	$4.57	$4.98	$5.48	$5.82	$6.80	$6.90	$7.10

TAXI ACCESS

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
$5.37	$5.27	$6.05	$4.95	$4.54	$6.01	$8.00	$8.50	$16.90	$15.20

MARC

2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022*
$17.56	$22.30	$22.70	$22.73	$23.63	$24.74	$24.82	$28.80	$37.90	$37.10

CONTRACTED COMMUTER BUS

2013	2014	2015	2016	2017	2018	2019	2020	2021***	2022*
$9.95	$10.02	$9.32	$8.91	$9.00	$9.96	$9.79	$11.60	$125.40	$10.02

CALENDAR YEAR

WHY DID PERFORMANCE CHANGE?

⬧ In general, operating costs have remained largely static, while ridership has declined or not yet recovered compared to last year

⬧ Ridership has recovered for MARC, Commuter Bus, Light Rail and Metro, so operating costs remain above 2019 pre-pandemic levels

⬧ Bus and paratransit ridership has recovered quicker, so operating costs are closer to 2019 levels

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

⬧ MDOT MTA continues to adjust and improve route alignments and schedules to best meet passenger demand, while accommodating the evolving fleet and workforce

⬧ MDOT MTA is investing in fleet modernization across all modes to improve operations and passenger experience, including replacement of Metro railcars and the signal systems and obtaining several 60-foot articulated low or no emissions vehicles through a federal grant

*2022 data are preliminary and subject to change.
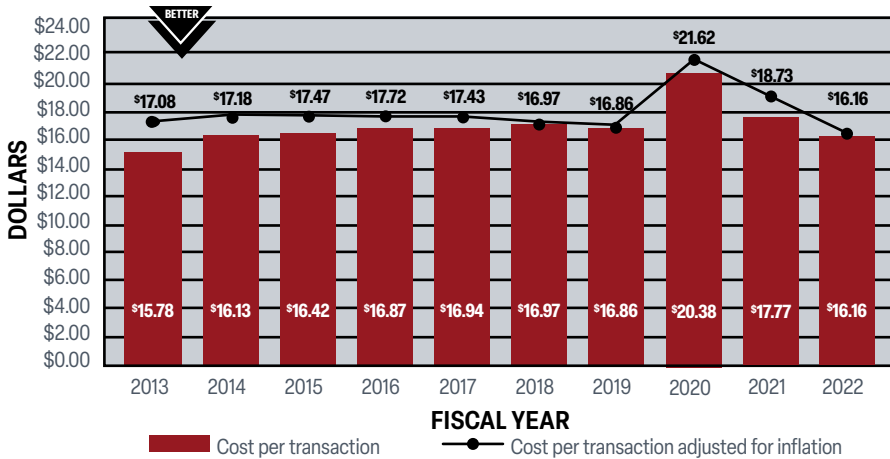
**2021 data have been revised from previous report.

***The spike in this metric is related to the commuter bus service changes resulting in ridership impacts from the pandemic. This measure will normalize as service starts to resume in future years.

MDOT MVA COST PER TRANSACTION*

MAKING PROGRESS

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

BETTER

FISCAL YEAR	Cost per transaction	Cost per transaction adjusted for inflation
2013	$15.78	$17.08
2014	$16.13	$17.18
2015	$16.42	$17.47
2016	$16.87	$17.72
2017	$16.94	$17.43
2018	$16.97	$16.97
2019	$16.86	$16.86
2020	$20.38	$21.62
2021	$17.77	$18.73
2022	$16.16	$16.16

DOLLARS

TARGET: Short-Term $17.26 (FY 2023); Long-Term: $17.31 (FY 2024)

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

WHY DID PERFORMANCE CHANGE?

▟ Average cost per transaction decreased from $17.77 to $16.16 this fiscal year

▟ As MDOT MVA branches have rebounded from the COVID-19 disruptions, the number of total transactions also rebounded, lowering the cost per transaction

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ MDOT MVA completed its system modernization project, Customer Connect, in December 2021; this fully integrated system has provided MDOT MVA the ability to capture more precise performance measures to better serve its customers

OBJECTIVE: Ensure a consistent revenue stream and ample financing opportunities

MDOT has used a variety of tactics to finance important infrastructure projects and ensure they are completed at reduced costs. The Howard Street Tunnel Expansion Project is a good example. Double-stack capability from Maryland's 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 on this project began in November 2021.

Another example is the Nice/Middleton Bridge over the Potomac River. Construction concluded on the MDTA's $463 million project to build a new US 301 bridge to replace the 81-year-old bridge. In March 2022,

the U.S. Department of Transportation (U.S. DOT) approved a $200 million federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loan to finance part of the nearly $463 million replacement project. The new, wider crossing opened to traffic in October 2022 and doubles the vehicle capacity with four 12-foot-wide lanes, replacing the original bridge's two 11-foot-wide lanes. It also eliminates lane-shifting safety issues with the removal of the toll booths by replacing them with all-electronic (cashless) tolling and enables tall ships to pass beneath its 135-foot clearance.

One final example is the I-695 TSMO project to reduce congestion and delay, which is utilizing the DB project delivery method. This method reduces time and money by using only one contractor that encourages innovation and collaboration. The project already has been awarded to a DB team who received a Notice to Proceed. Once complete, the project will relieve congestion on six of the top 15 most congested roadway segments in Maryland.

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

A goal for MDOT is to provide infrastructure, programs, and policies to maximize residents' travel choices. Maryland invests strategically in multimodal transportation projects to improve connectivity, reliability, safety, and access to the transportation network. The continued construction of the Purple Line, a 16-mile light rail corridor, the upcoming completion of the Maryland State Freight and Rail Plans, and ongoing outreach through partners, as well as the Commuter Choice Maryland program are ensuring that Marylanders have a plethora of travel options and current information about how to use these services.

While transit ridership is still below pre-pandemic levels, MDOT and regional stakeholders have implemented innovative measures to improve the rider experience and entice people back onto public transit. Maryland prioritized incentives and flexible fare options that provide access to public transit and reward customers for taking alternatives to driving alone. For instance, MDOT expanded incenTrip, an application created in partnership with the University of Maryland, which leverages behavior change science to reduce peak period drive alone trips. This statewide program acts as a congestion mitigation measure. All commuters can download the incenTrip application and redeem points for financial rewards when they choose alternative modes of travel instead of driving alone during peak travel times. Additionally, recognizing changing travel patterns, MDOT MTA launched the CharmFlex pass in August 2021 to better accommodate workers and other travelers who want to continue to use transit, but whose schedules may have changed. CharmFlex passes are 3- and 10-day passes within the CharmPass app that can be used on non-consecutive days, on Local Bus, Light Rail, Metro Subway, Commuter Bus, and MARC Train.

In early 2022, the Washington Metropolitan Area Transit Authority (WMATA) began a redesign of its Metrobus network that offers bus service into Montgomery County and Prince George's County. This project will include a robust equity analysis to ensure bus service meets the needs of all users and has the potential to improve access to transit of residents in those two counties significantly.

With a focus on completing and improving sidewalks, and creating a safe bicycle network, Maryland is committed to be a more walk- and bike-friendly state. In 2022, Maryland was able to fund more than $122 million for bicycle- and pedestrian-related projects. These included more than $14.7 million for retrofitting sidewalks and awarded $2.6 million to projects through the Kim Lamphier Bikeways Network program.

Increasing access to transit by offering more travel options and adapting services to customers' changing travel needs, as well as educating customers about available commuter benefits, is helping Marylanders integrate daily trip planning with available options. In MDOT's 2021 annual survey of Perceptions of Multimodal Connectivity, 86% of respondents replied that they are "very satisfied" or "satisfied" with the range of transportation options MDOT offers.

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

TOTAL VEHICLE MILES TRAVELED (VMT) AND VMT PER CAPITA

ON TARGET

VMT refers to the total number of miles traveled on the roadways by passenger vehicles and freight vehicles. This figure is used to track and measure many important transportation metrics such as safety, incidents, congestion, mobility, and emissions. Maryland's population is growing steadily and, while population numbers fluctuate in some areas of the state, overall we can expect increased economic activity, changes in land use, and increased demand for existing transportation infrastructure. As the state's population grows, we can expect an increase in more trips and longer trips as well as more VMT. An increase in VMT usually leads to more congestion, emissions, and impacts on air quality. By addressing factors such as mobility, access to transportation, more frequent bus service, and improved bike facilities, MDOT can continue to work toward reducing VMT.
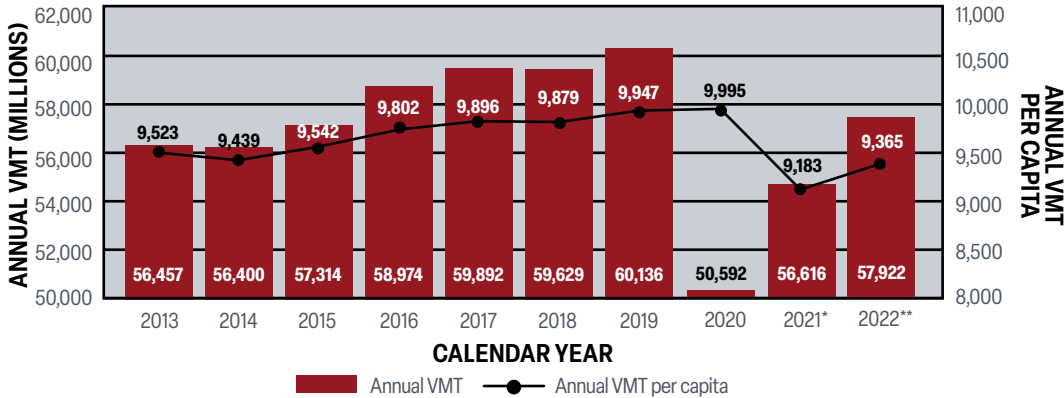
WHY DID PERFORMANCE CHANGE?

▰ Annual VMT increased by 2.3% and annual VMT per capita increased by 2% from 2021 to 2022 as Marylanders started to drive more toward the tail end of the COVID-19 pandemic

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ Continue promoting Transportation Demand Management (TDM) programs, such as Commuter Choice Maryland and the incenTrip mobile application, to raise awareness of transportation options and help Marylanders take more trips via transit, biking, and walking

[Bar and line chart: ANNUAL VMT (MILLIONS) vs CALENDAR YEAR, with ANNUAL VMT PER CAPITA]

Calendar Year	Annual VMT	Annual VMT per capita
2013	56,457	9,523
2014	56,400	9,439
2015	57,314	9,542
2016	58,974	9,802
2017	59,892	9,896
2018	59,629	9,879
2019	60,136	9,947
2020	50,592	9,995
2021*	56,616	9,183
2022**	57,922	9,365

Legend: Annual VMT (bar) — Annual VMT per capita (line)

*2021 have been revised from previous report.
**2022 data are preliminary and subject to change.

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

TARGET ACHIEVED

Last year, MDOT transitioned from using the Bicycle Level of Comfort (BLOC) to using the LTS for measuring the bike-ability 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, and on-street parking presence. The chart below 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	Enthused 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 (PSAP).

WHY DID PERFORMANCE CHANGE?

▰ MDOT transitioned from BLOC to LTS to reflect more accurately conditions experienced by people riding bicycles; with more accurate measures, MDOT can plan more inviting bicycle facilities that attract more riders

▰ Invested $1.7 million in FY 2022 for design and construction of dedicated bicycle retrofit projects, including the construction of the US 1 Rhode Island Trolley Trail project in Hyattsville and design for bicycle and pedestrian improvements on MD 450 around the Naval Academy in Annapolis, Maryland

▰ Collaborated with stakeholders including bicycle and pedestrian advocacy organizations, local governments, and agencies to continue the implementation of MDOT SHA's Context Driver Guide

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ Deliver bicycle infrastructure projects that reduce conflicts between bikes and vehicles, improve safety, and fill gaps in the bicycle network

▰ Disburse $16.8 million in grants to municipalities for bicycle, trail, and pedestrian projects

▰ MDOT will continue to measure LTS and develop bicycle facility recommendations based on Context Driven solutions

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.

After a significant drop in transit ridership during the COVID-19 pandemic, ridership started to rebound slowly. In 2022, unlinked passenger trips (UPT)[1] across all MDOT MTA services–direct–operated and contracted services and lots–increased as compared to 2021. WMATA and MDOT MTA are working hard to adjust to new travel patterns, offer incentives to entice riders back on transit, and maintain a safe rider experience. In 2022, WMATA began a Bus Network Redesign project to adjust service and increase more equitable access to its Metrobus service. This project has the potential to have a positive effect on bus reliability and access to transit for Maryland residents in for Maryland residents in Montgomery County and Prince George's County.
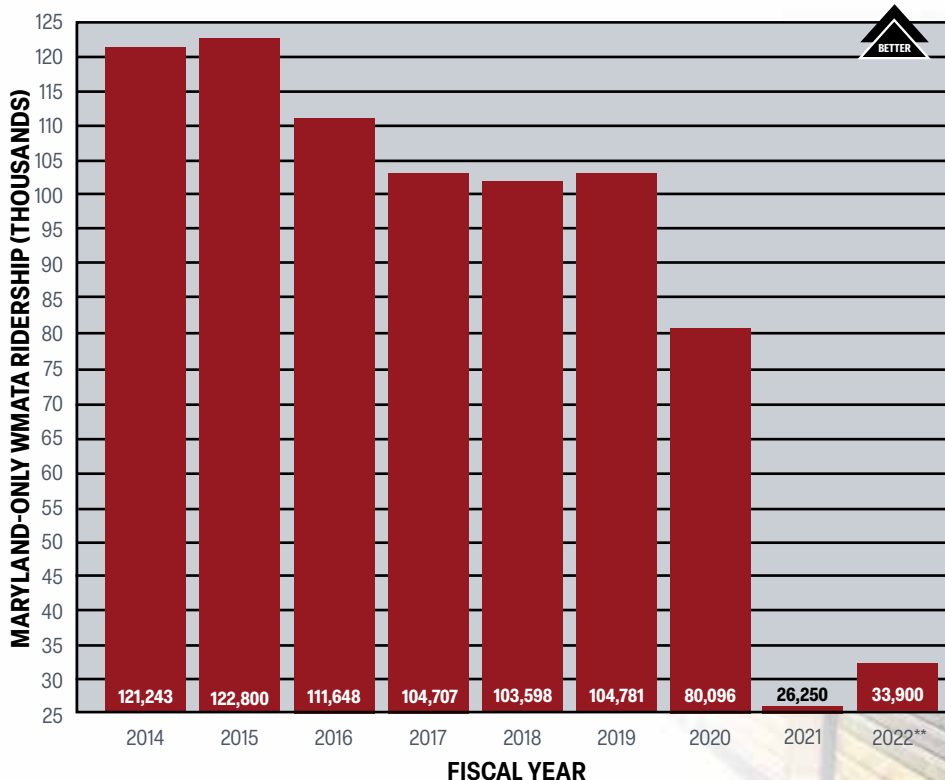
FISCAL YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022**
TRANSIT RIDERSHIP–MDOT MTA DIRECT-OPERATED SERVICES (THOUSANDS)										
Local Bus	80,071	75,780	78,697	75,619	69,587	63,730	63,989	55,439	35,370	40,163
Baltimore Metro	15,208	14,632	13,901	12,222	10,960	8,738	7,275	5,864	1,616*	2,252
Light Rail	8,647	8,106	7,657	7,431	7,414	7,401	6,966	4,682	2,454*	2,910
TRANSIT RIDERSHIP–CONTRACTED SERVICES AND LOTS (THOUSANDS)										
MARC	9,062	9,168	9,246	8,962	9,185	9,322	9,191	6,677	846*	2,271
Contracted Commuter Bus	4,187	4,017	4,034	3,928	3,866	3,841	3,623	2,619	431*	809
Mobility Paratransit & Taxi Access	2,084	2,289	2,495	2,555*	2,745*	2,941	2,974	2,492	1,576*	1,831
Local Operating Transit System (LOTS)	40,281	42,500	39,441	38,476	39,818	41,096	32,866*	25,412	14,977*	16,538

1 Unlinked Passenger Trips (UPT): The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.
*Data have been revised from previous report.
**2022 data are preliminary and subject to change.

MARYLAND-ONLY WMATA ANNUAL RIDERSHIP (THOUSANDS)*

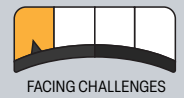| Fiscal Year	Ridership (thousands)
2014	121,243
2015	122,800
2016	111,648
2017	104,707
2018	103,598
2019	104,781
2020	80,096
2021	26,250
2022**	33,900

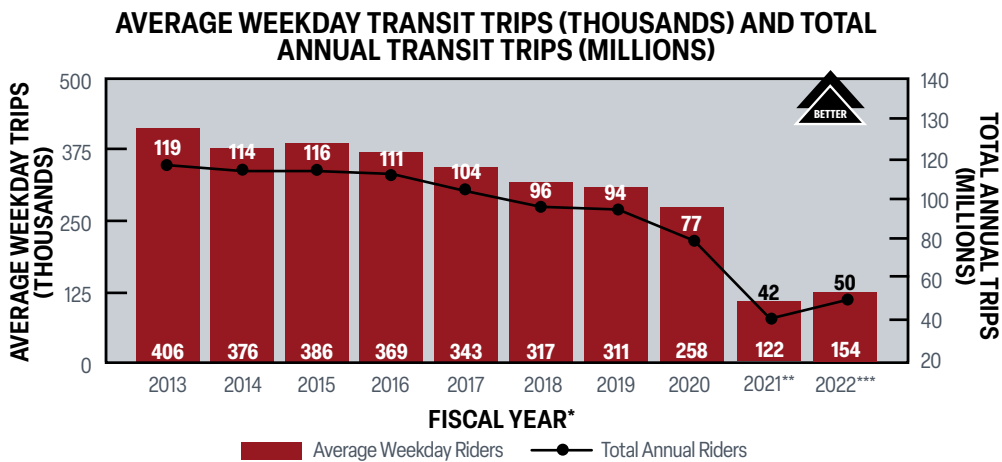*2019 , 2020 and 2021 data have been revised from previous report.
**2022 data is preliminary and subject to change.

MDOT MTA TRANSIT RIDERSHIP

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

AVERAGE WEEKDAY TRANSIT TRIPS (THOUSANDS) AND TOTAL ANNUAL TRANSIT TRIPS (MILLIONS)

Fiscal Year	2013	2014	2015	2016	2017	2018	2019	2020	2021**	2022***
Average Weekday Trips	406	376	386	369	343	317	311	258	122	154
Total Annual Riders	119	114	116	111	104	96	94	77	42	50

Legend: Average Weekday Riders ■ | Total Annual Riders ●

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.

**2021 data have been revised from previous report.

***2022 data are preliminary and subject to change.

WHY DID PERFORMANCE CHANGE?

▮ Real-time bus crowding information has been added to Transit App for all LocalLink, CityLink, Light Rail, MARC, and Express BusLink services to give riders transparency and choice in the trip-planning process

▮ MDOT MTA launched the CharmFlex pass in August 2021 to better accommodate workers and other travelers who want to continue to use transit, but whose schedules may have changed

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▮ MDOT MTA was awarded more than $7 million through the USDOT competitive All Stations Accessibility Program (ASAP) to develop plans for the future renovation of the Martin Airport station on its Penn commuter rail line to make it safer and fully accessible

▮ Completing and rolling out the Future Fare System project to make paying for transit easier and more convenient for customers in Baltimore and the surrounding areas
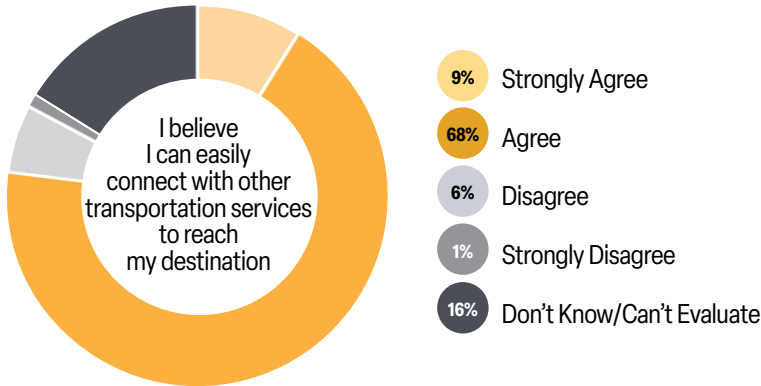
OBJECTIVE: Increase and enhance multimodal connections to improve movement of people and goods within and between activity centers

MDOT SURVEY—PERCEPTIONS OF MULTIMODAL CONNECTIVITY*

MAKING PROGRESS

This MDOT survey measures the public's perception of connectivity, highlighting where MDOT and the 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. More than 75% of respondents agreed or strongly agreed with the statement "I believe I can easily connect with other transportation services to reach my destination," and 86% were either satisfied or very satisfied with the transportation options.

MDOT SURVEY QUESTION:

I believe I can easily connect with other transportation services to reach my destination

- **9%** Strongly Agree
- **68%** Agree
- **6%** Disagree
- **1%** Strongly Disagree
- **16%** Don't Know/Can't Evaluate

MDOT SURVEY QUESTION:

When it comes to getting where you need to go, how satisfied are you with the range of options you have?

- **24%** Very Satisfied
- **62%** Satisfied
- **7%** Not Very Satisfied
- **4%** Not Satisfied At All
- **4%** Don't Know/Can't Evaluate

WHY DID PERFORMANCE CHANGE?

▰ Leveraged "Beyond the Bus Stop" federal grant funds to provide real-time digital signage pilot at three major transit hubs

▰ Real-time data allows riders to view live stations locations and arrival predictions on Transit App and Google Maps

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▰ Implementing MDOT MTA's Statewide Transit Plan to create a better-connected transit system, improve access to transit, and advance equitable and innovative mobility

▰ Continue soliciting feedback from the public and identifying areas for improvement
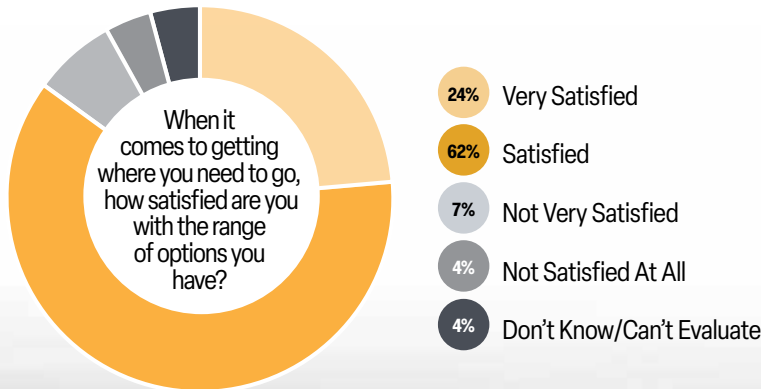
The survey data reported is 2021 survey data; survey data reporting is delayed by a year due to the survey for the current year not being closed/completed at the time of publishing. 2022 survey data will be published in the 2024 Attainment Report.

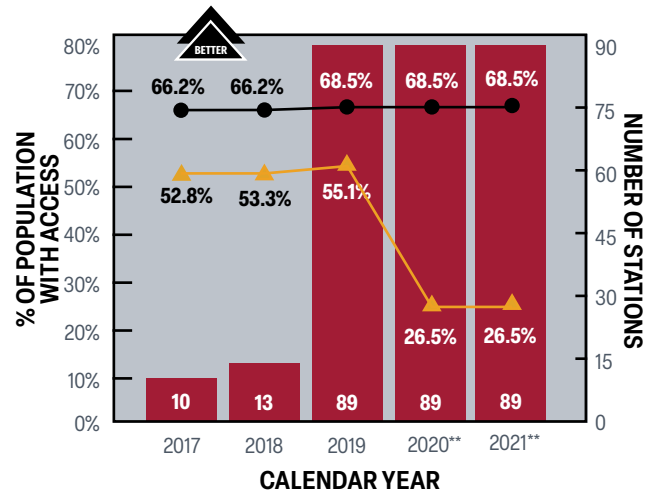## ACCESS TO TRANSIT AND BICYCLE ACCESS TO TRANSIT*

ON TARGET

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

WHY DID PERFORMANCE CHANGE?

◢ Increasing access to transit remains an important measure and progress is slow as it takes time to add new bicycle facilities and sidewalks

◢ As of July 1, 2022, commuter benefit offerings expanded to include telework, carpool, active transportation, and multimodal commuter last mile connections to make access to transit easier for Marylanders

◢ In 2022, MDOT MTA secured a $6 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant for multimodal transit station access improvements at Baltimore Penn Station including dedicated bus lanes on Charles Street, curb extensions on Charles and St. Paul streets, and bicycle and pedestrian improvements

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

◢ The continued construction on the 16-mile Purple Line light rail corridor to connect Montgomery and Prince George's counties will improve access and connectivity to transit

◢ Implement MDOT SHA's Context Driven Guidelines to ensure that bicycle facilities are safe and support multimodal needs

Chart: % OF POPULATION WITH ACCESS / NUMBER OF STATIONS by CALENDAR YEAR

	2017	2018	2019	2020**	2021**
Percentage of stations equipped with bike-share	66.2%	66.2%	68.5%	68.5%	68.5%
Percent of population within walk/bike distance	52.8%	53.3%	55.1%	26.5%	26.5%
Number of stations equipped	10	13	89	89	89

▲ Percent of population within walk/bike distance of fixed route transit or multimodal center***

● Percentage of stations equipped with bike-share infrastructure and/or equipment

■ Number of stations equipped with bike-share infrastructure and/or equipment

*Methodology for this measure changed in 2019 to include any stations with bike racks, bike storage, and other bike-sharing facilities.
**2021 data are preliminary and subject to change.
***Data have been revised from previous reports.

OBJECTIVE: Inform and educate customers on transportation options and benefits

TRANSPORTATION DEMAND MANAGEMENT (TDM) AND COMMUTE MODE SHARE

MAKING PROGRESS

TDM strategies and policies are an impactful and cost-effective way to offset vehicle congestion and reduce VMTs by promoting alternatives to driving alone such as taking transit, carpool, vanpool, walking, biking, teleworking, Maryland Commuter Tax Credit, and Guaranteed Ride Home. Commuter Choice Maryland is MDOT's TDM program and provides options to maximize travel choices and deliver solutions that can reduce congestion, conserve energy, facilitate economic opportunity, and enhance the life of all Marylanders. In 2020, Maryland saw a significant increase in working from home as more people started to telework during the height of the COVID-19 pandemic. In 2021, working from home grew to an unprecedented 24.1% as more employers across Maryland continued offering telework policies and more employees settled into established telework routines. Commuter Choice Maryland also continues to provide resources, tips, and tools to facilitate teleworking and other TDM strategies in 2021. Visit **www.commuterchoicemaryland.com** for more information.
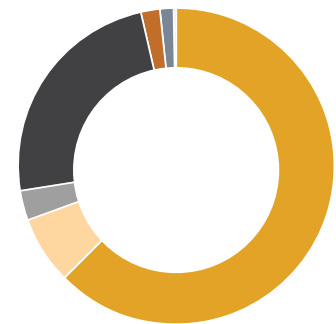
	2013	2014	2015	2016	2017	2018	2019	2020*	2021**
☐ **DRIVE ALONE**	73.5%	73.6%	73.6%	73.7%	73.7%	73.9%	73.9%	72.1%	62.2%
☐ **CARPOOL**	10.0%	9.8%	9.8%	9.3%	9.5%	9.0%	8.9%	8.6%	7.0%
☐ **TRANSIT**	8.9%	8.9%	8.9%	8.9%	9.0%	8.6%	8.4%	7.4%	3.0%
☐ **WORK AT HOME**	4.2%	4.2%	4.2%	4.4%	4.2%	4.7%	5.0%	8.1%	24.0%
☐ **WALK**	2.4%	2.3%	2.3%	2.4%	2.4%	2.3%	2.3%	2.1%	1.8%
☐ **OTHER***	0.8%	0.9%	0.9%	1.0%	0.9%	1.1%	1.2%	1.3%	1.8%
☐ **BICYCLE**	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%

- 62.2% Drive Alone
- 7.0% Carpool
- 3.0% Transit
- 24.0% Work at Home
- 1.8% Walk
- 1.8% Other
- 0.2% Bicycle

*2020 data in in previous report was unavailable due to the pandemic.
**2021 American Communities Survey (ACS, U.S. Census) uses ACS 1-year tables and should not be compared with other ACS data (5-year).
***Other includes motorcycle, taxicab, and "other" in the ACS data.

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	85,845	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 Baltimore-Washington 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	13, 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 (last updated in 2019 AR).*

WHY DID PERFORMANCE CHANGE?

▟ Employees' interest in telework increased substantially in the last two years, and continues to impact the population's transportation patterns

▟ Continued to provide information about commuter options and employ marketing strategies to restore confidence in transit and ridesharing

▟ Expanded incenTrip and the Maryland Commuter Tax Credit for employers to provide additional incentives to commuters and businesses; more information at **mdot.maryland.gov/incenTrip**

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

▟ Support Maryland employers' efforts to implement commuter benefits through the Employer Partner Program and expansion of the Maryland Commuter Tax Credit; more information is available at **www.commuterchoicemaryland.com**

▟ Respond to changing travel patterns by connecting Marylanders to transportation options during off-peak hours as well to meet travel demand

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).
Freight Analysis Framework (FAF)	The FAF creates a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. The FAF integrates data from a variety of sources. Starting with data from the Commodity Flow Survey (CFS) and international trade data from the Census Bureau, FAF incorporates data from agriculture, extraction, utility, construction, service, and other sectors. The FAF is produced through a partnership between the USDOT Bureau of Transportation Statistics (BTS) and Federal Highway Administration (FHWA).
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.
Infrastructure Investment and Jobs Act (IIJA)	The IIJA (also known as the Bipartisan Infrastructure Law, or BIL) was signed into law by President Biden on November 15, 2021, authorizing $1.2 trillion for transportation and infrastructure spending with $550 billion of that total going toward "new" investments and programs.
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.
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℠ (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)	ZEEVIC was established by state legislation in 2011 (and expanded in 2019 to include zero emission vehicles). 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 a crash	MDOT MTA	15
OBJECTIVE: IMPROVE ROADWAY CLEARANCE TIMES AND FACILITATE EFFICIENT AND COORDINATED RESPONSES TO EMERGENCY AND DISASTER EVENTS THROUGHOUT THE TRANSPORTATION SYSTEM			
Restoring Transportation Services: Average Time to Restore Normal Operations After a Weather Event	Illustrates the efficiency of MDOT SHA and MDTA in reducing the impact of winter weather events by quickly restoring normal operations on primary and interstate roadways	MDOT SHA and MDTA	16
FACILITATE ECONOMIC OPPORTUNITY AND REDUCE CONGESTION IN MARYLAND THROUGH STRATEGIC SYSTEM EXPANSION			
OBJECTIVE: PURSUE CAPITAL IMPROVEMENTS TO THE TRANSPORTATION SYSTEM THAT WILL IMPROVE ACCESS TO JOBS AND TOURISM AND LEVERAGE ECONOMIC GROWTH OPPORTUNITIES			
BWI Marshall Airport Total Annual Passengers	Measures number of annual passengers using the BWI Marshall Airport	MDOT MAA	18
International Cruises Using Maryland's Port of Baltimore	Number of international cruises using Maryland's 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
Maryland's Port of Baltimore Foreign Cargo and MDOT MPA General Cargo Tonnage	Measures the amount of foreign and general cargo moving through Maryland's 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 Transportation Emissions Reduction Measures (TERMs)	Measures the reduction in VMT resulting from Commuter Choice Maryland programs	MDOT	55

IMPLEMENTING THE MARYLAND TRANSPORTATION PLAN AND CONSOLIDATED TRANSPORTATION PROGRAM

2023 Annual Attainment Report
On Transportation System Performance

MARYLAND DEPARTMENT OF TRANSPORTATION

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

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

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MARYLAND DEPARTMENT OF TRANSPORTATION