



**MDOT**  
MARYLAND DEPARTMENT  
OF TRANSPORTATION



Implementing the Maryland Transportation Plan and Consolidated Transportation Program

# 2024 Annual Attainment Report

## On Transportation System Performance

Wes Moore  
Governor

Aruna Miller  
Lt Governor

Paul J. Wiedefeld  
Secretary



## Governor's Message

Marylanders deserve a transportation system that offers physical mobility, and provides accessibility to affordable housing, jobs, food, healthcare, amenities and other critical services needed for their everyday living. Our communities are expanding, our jobs are growing and we need to make sure that everyone in the region can get from where they live to where opportunity lies.

From rural towns on the Eastern Shore to the urban areas of Baltimore and everywhere in between, we need a transportation system that provides accessible, equitable and sustainable options across the entire state, connects people to quality jobs and training and opens doors to economic opportunity and prosperity.

The information collected in this Attainment Report will help us guide the transportation needs in this state for generations to come and make the transportation decisions that are game changers for the ways we live, work and play.

I want to sincerely thank all MDOT employees for your dedicated work. Thanks to you, we will propel the state toward a bolder, brighter future where no one is left behind!

*Wes Moore*  
Governor



## Secretary's Message

The Maryland Department of Transportation (MDOT) is poised to take transportation to a different place — one where we support larger societal goals, partner with the communities we serve and promote social equity, environmental protection and sustainable communities. We are committed to transparency and listening to ALL of our customers — internal and external — because together we can ensure a safe, balanced system that meets the needs of all Marylanders and Governor Moore's vision of a bolder, brighter future where no one is left behind.

The facilities and services that we provide are central to the quality of life of every Marylander, delivering critical access to day-to-day mobility needs, such as employment, health care, economic opportunity and leisure activities. Simply put, MDOT is a multimodal agency that is "Taking you places!" We are a place to ride, walk, bike, drive, fly and cruise. We are a place to do business. We are a place to work where you can make a difference. We connect people to communities. And we connect people to life's opportunities.

As we look to the future, this Attainment Report on Transportation System Performance is an invaluable tool to measure progress in meeting our goals and guide our decision making. It allows us to identify successes, challenges, and strategies using historical performance data, recent actions taken and strategies planned to improve performance further.

Achieving a future where no one is left behind requires commitment. Please be assured that we are up to the challenge and will remain dedicated to this effort to transform our transportation system and take it to the next level.

Thank you for your continued support and contributions that made this Attainment Report possible.

*Paul J. Wiedefeld*  
Secretary

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## 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 modal 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 Department 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.

## Modal Administrations

ACRONYM	MODAL ADMINISTRATION
TSO	The Transportation Secretary's Office
MAA	Maryland Aviation Administration
MPA	Maryland Port Administration
MTA	Maryland Transit Administration
MDTA	Maryland Transportation Authority
MVA	Motor Vehicle Administration
SHA	State Highway Administration
THE STATE OF MARYLAND ALSO SUPPORTS:	
WMATA	Washington Metropolitan Area Transit Authority

MDOT thanks the 2023 Attainment Report Advisory Committee (ARAC) for their time and dedication to updating the performance measures for this report.



## List of Performance Measures by Goal

### GOAL ENHANCE SAFETY AND SECURITY: PROTECT THE SAFETY AND SECURITY OF ALL RESIDENTS, WORKERS AND VISITORS

Annual Number of Fatalities on All Maryland Public Roads	6
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# INTRODUCTION GUIDING MARYLAND'S TRANSPORTATION SYSTEM, MDOT 2050 MTP GOALS SUMMARY

MDOT works to provide safe, reliable, accessible, equitable and sustainable transportation options to Marylanders across the state. Active planning, evaluation, investment and implementation of Maryland's transportation system ensures that all efforts and available funds are directed towards creating and sustaining the most efficient, reliable and fiscally prudent transportation options. This allows all Maryland communities to access economic opportunities and connect Maryland with destinations to live, work and play.

## MDOT VISION STATEMENT

Provide safe, reliable, accessible, equitable, and sustainable transportation options to Marylanders across the state.

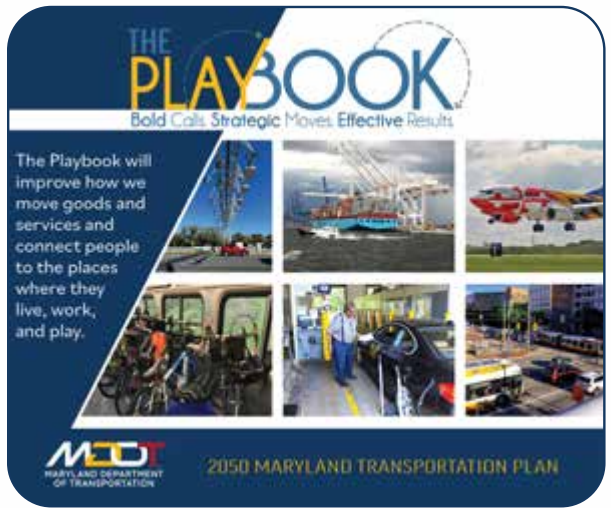
The state's strategic approach are contained in three documents, which are presented annually through the State Report on Transportation (SRT):

- The Maryland Transportation Plan (MTP), called "The Playbook" for the 2024 update, which sets the long-range vision for the state's transportation system, and is updated every five years;
- The Consolidated Transportation Program (CTP), which is updated annually and provides a six-year capital budget for the state's transportation projects; and
- The Attainment Report on Transportation System Performance (AR), which evaluates the performance of the state's transportation system and reports on progress toward reaching the four key goals outlined in the MTP. The performance measures in the AR report were recently updated in 2023, as were the short and long-term targets.

Maryland remains steadfast in pursuing its commitment to create a transportation system that works for all Marylanders and achieves its goals and objectives to realize the state's vision to provide safe, reliable, accessible, equitable and sustainable transportation options to Marylanders across the state. By continuously collecting and evaluating data, MDOT is well positioned to identify any areas of concern in order to allocate resources to course-correct trends in advance of impacts to Maryland's transportation system, products and services. MDOT meticulously tracks data to assess progress toward achieving its goals and objectives.



In order to ensure that performance measures are relevant, effective and modern, performance measures in the AR are updated every five years by a Governor-appointed **AR Advisory Committee (ARAC)** as part of the MTP update, or the Playbook. For this 2024 AR, MDOT reviewed and updated more than 50 performance measures in accordance with the recently updated MTP, or the Playbook, which charts a path to realize Maryland's long-range transportation vision, mission and goals. This 2050 MTP, or the Playbook, refined the goals for the MTP, which are used to organize the performance measures. These four new goals outline MDOT's priorities and plans for the next five years, 20 years, and beyond:



- **Enhance Safety and Security:** Protect the safety and security of all residents, workers and visitors
- **Deliver System Quality:** Deliver a reliable, high-quality, integrated transportation system
- **Serve Communities and Support the Economy:** Expand transportation options to allow Maryland's diverse communities to access opportunities and to support the movement of goods
- **Promote Environmental Stewardship:** Minimize and mitigate the environmental effects of transportation

The Playbook also introduced five guiding principles for MDOT to utilize in decision making to support the goals. These principles are:

- **Equity:** Integrate equity considerations in all aspects of transportation planning, programming and operational processes
- **Preservation:** Preserve the condition of the existing transportation system assets to provide safe and efficient movement
- **Resilience:** Improve the transportation system's ability to provide reliable service throughout natural weather events and man-made threats
- **Modernization:** Transform the transportation system by using proven technological improvements and exploring innovative new ideas
- **Experience:** Improve the experience of all transportation system users

For more information on the MTP, please visit:  
[www.mdot.maryland.gov/MTP](http://www.mdot.maryland.gov/MTP)

For more information on the CTP FY 2024–FY 2029, please visit:  
[www.CTP.maryland.gov](http://www.CTP.maryland.gov)

For more information on the AR, please visit:  
[www.mdot.maryland.gov/AR](http://www.mdot.maryland.gov/AR)



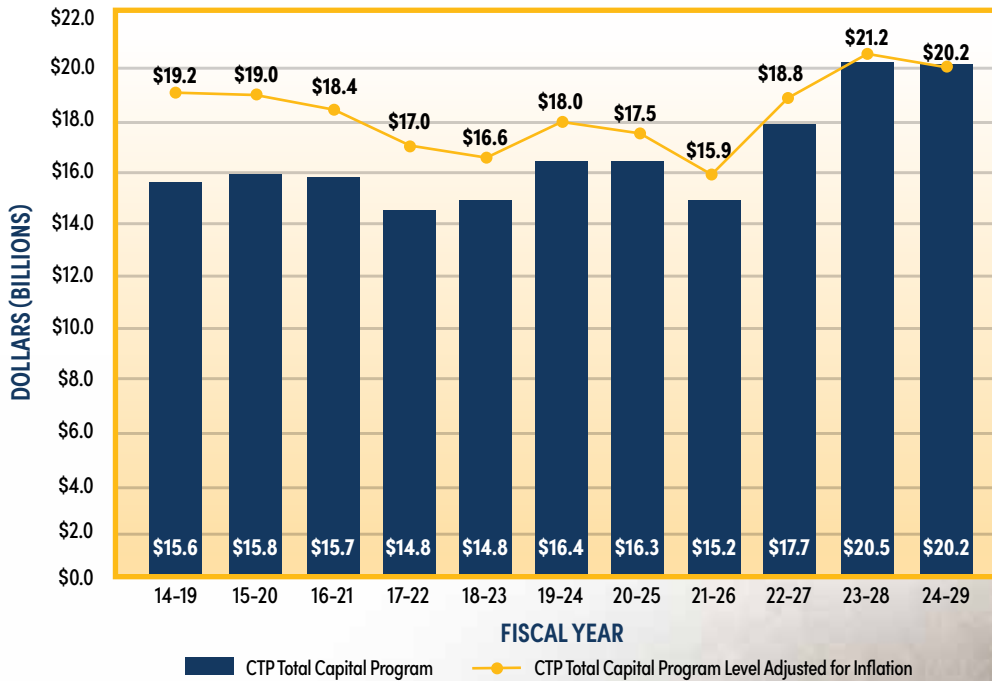
# Maryland's Investment in Transportation

MDOT 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. MDOT has released its FY 2024-FY 2029 CTP, which is aligned with the vision, principles and goals of the Playbook. The \$20.2 billion program outlines capital investments in each mode funded by the Transportation Trust Fund, down from \$20.5 billion in the FY 2023-FY 2028. These investments will strive to maintain the system we have already built while reflecting the tough choices to address the revenue gap. The CTP continues targeted investments in key future projects and programs, such as safety projects, the Purple Line project, the Baltimore Red Line Project, replacement of the Frederick Douglass Tunnel, improvements to the Howard Street Tunnel, Transit Oriented Development (TOD), the Complete Streets Program and the transition to zero-emission transit buses, as well as other carbon reduction and resiliency programs, noting some funding changes and delays in schedule. However, this FY 2024 - FY 2029 CTP resolves a funding gap of more than \$2.1 billion. Current funding levels do not provide the

investment levels needed to transform the system to meet the state's goals and desired outcomes or targets. Challenges to the state's resources are multilayered: inflation has eroded funding available for transportation investments and the increased fuel efficiency of vehicles and the growing adoption of EVs challenges Maryland's—and the nation's—reliance on motor fuel tax revenues to fund transportation. Though Maryland has continued to leverage both formula and discretionary funding made available from the 2021 U.S. Infrastructure Investment and Jobs Act (IIJA), federal pandemic relief funding provided to the states over the last few years will be fully spent this year.

In August 2023, the 31-member **Maryland Commission on Transportation Revenue and Infrastructure Needs (TRAIN)** began their work in an effort to collaborate more fully on the direction of transportation resources. The legislatively-established panel is tasked with reviewing, evaluating and making recommendations on how transportation projects should be prioritized and funded.

CTP TOTAL CAPITAL PROGRAM LEVELS (Billions)\*



\*Index numbers have changed to reflect the use of the MDOT Capital Inflation Factors.





## Transportation Mobility and Accessibility

Transportation mobility is the ease of traveling throughout the transportation network, whereas accessibility is the ease of reaching desired destinations or activities. An accessible and efficient transportation system enhances physical mobility, as well as economic mobility. As the population of Maryland grows, there is growing demand for accessibility to jobs, parks, schools, hospitals and to each other.

### PROVIDING MULTIMODAL TRANSPORTATION OPTIONS

As per the US Census data, the population of Maryland increased by 7% from 2010 to 2020 and saw a slight decrease from 6.17 million in 2021 to 6.16 million in 2022. By 2050, Maryland's population is expected to reach above seven million. The increase in population is likely to increase the Vehicle Miles Traveled (VMT). As Marylanders began to drive more toward the tail end of the COVID-19 pandemic, annual VMT increased by 15% and annual VMT per capita increased by 13% from 2020 to 2023. The share of public transit decreased from 8% of commute trips in 2019 to 6.4% in 2021. Moreover, the percentage of people working remotely rose from over 5% in 2019 to 11.9% in 2021, according to the American Community Survey (ACS) 5-year estimates. MDOT is working to adjust to the new travel patterns and deliver an efficient transit system with new options, added incentives and increasing on-time performance (OTP). After the sharp decline in transit ridership due to the COVID-19 pandemic, the MTA ridership has increased significantly between 2021 and 2023. To increase the accessibility of the transit system and improve access to work, housing and other activities, MDOT is investing in Transit Oriented Development (TOD). TOD will not only create better transportation choices, but also support environmental protection by promoting active transportation, reducing the demand of personal vehicles and reducing greenhouse gas (GHG) emissions.

### PROMOTING TRANSPORTATION EQUITY AND REDUCING CARBON EMISSION

MDOT is committed to equity in its transportation initiatives. MDOT will ensure that all communities, especially those that are historically overburdened or underserved, have equitable access to safe, reliable and efficient transportation systems. MDOT is reducing disparities by promoting outreach and education in more communities. MDOT also will ensure better transit connectivity and provide investment in the areas that are overburdened and underserved. Overall, Maryland is committed to investing resources in projects and programs that will strengthen the multimodal transportation network and support seamless trip planning and travel for all Marylanders. To leverage investments in the multimodal transportation network, MDOT uses Transportation Demand Management (TDM) strategies to offset vehicle congestion and reduce VMT by promoting alternatives to driving alone, such as taking transit, carpooling, walking, biking, teleworking, and taking advantage of Maryland Commuter Tax Credit and Guaranteed Ride Home. The Commuter Choice Maryland program 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.

MDOT has adopted several other initiatives to improve the mobility and accessibility of its transportation network. For example, modernizing the transportation infrastructure by incorporating Intelligent Transportation System (ITS) technology and improving Transportation Systems Management and Operations (TSMO).

Maryland is committed to a 60% reduction in GHG emissions by 2031 and achieving net-zero emissions by 2045 based on the Climate Solutions Now Act (CSNA) of 2022. To achieve that, MDOT is making sure that the state is ready for the increase in EVs on the road. From July 1, 2022 to June 30, 2023, EV ownership in Maryland increased by 45% from 52,319 to 75,861 registrations. MDOT also submitted the Maryland State Plan for National Electric Vehicle Infrastructure (NEVI) to the U.S. Joint Office of Energy and Transportation (Joint Office) in July 2022 and a required annual update in August 2023. MDOT will release its NEVI Program Round 1, with a goal of awarding contracts for installations of direct-current (DC) fast chargers along Maryland's 23 EV Alternative Fuel Corridors (EV-AFCs). MDOT will support the establishment of an interconnected network through the NEVI Program that will facilitate data collection, equitable access and network reliability.

### ENSURING SAFETY OF ROAD USERS

MDOT also is committed to achieving the Vision Zero goal, i.e., reaching zero roadway fatalities and serious injuries on its roadway network. In August 2023, Governor Wes Moore allocated more than \$11.5 million in federal highway safety grants to 85 organizations across Maryland to prevent motor vehicle crashes and eliminate roadway fatalities. MDOT also has allocated \$75 million to address the safety of vulnerable road users, which includes pedestrians and bicyclists. To improve the access and safety for active transportation modes, and improve multi-modal access across the state, MDOT announced the state's first Pedestrian Safety Action Plan (PSAP) in May 2023. Additionally, MDOT has recently updated the **Statewide Bicycle and Pedestrian Master Plan (BPMP)**. The goals and recommendations put forth in the new 2050 BPMP support the overarching goals of the 2050 MTP.





# GOAL ENHANCE SAFETY AND SECURITY: PROTECT THE SAFETY AND SECURITY OF ALL RESIDENTS, WORKERS AND VISITORS

Key Outcomes: The four objectives and 12 performance measures outlined here will enhance safety and security. By protecting the safety of all residents, workers and visitors, we will achieve zero traffic-related fatalities and serious injuries.

Safety is a priority for MDOT. Vision Zero states a clear, unified purpose to use a multi-disciplinary approach to crash prevention and severity mitigation. For our roadways, this includes strategies that address roadway design, driving behaviors, technology and policies by working with our wide network of partners across the state. MDOT takes a data-driven approach to reach Maryland's goal of zero roadway fatalities and serious injuries. The Vision Zero Implementation Act of 2022 requires SHA to examine the infrastructure for every pedestrian or bicyclist fatality that occurs on a state highway, or at the intersection of a state highway and a municipal or county road. This came after 2020, when the nation and the state saw an increase in fatalities and serious injuries despite lower Vehicle Miles Traveled (VMT). Strategies are underway to improve work zone safety under the Work Zone Safety and Mobility Program using Intelligent Transportation System (ITS) technologies, providing appropriate training and partnering with the law enforcement and the construction industry.

MDOT will continue towards significant progress in meeting its future safety targets through its 2021-2025 Strategic Highway Safety Plan (SHSP) and its update to the Statewide Bicycle and Pedestrian Master Plan (BPMP). MDOT and its partners have identified six safety emphasis areas and developed action plans to improve safety for each emphasis area and improve performance towards MDOT's safety targets.

## Performance Measures

OBJECTIVES	PERFORMANCE MEASURE	RATING
Reduce the number of lives lost and injuries sustained on Maryland's transportation system	Annual Number of Fatalities on All Maryland Public Roads	FACING CHALLENGES
	Annual Number of Serious Injuries on All Maryland Public Roads	FACING CHALLENGES
	Annual Number of Bicycle and Pedestrian Fatalities and Serious Injuries on All Maryland Public Roads	FACING CHALLENGES
	Annual Number of Transit Passenger Fatalities and Serious Injuries	FACING CHALLENGES
	Annual Number of At-Grade Railroad Crossing Incidents Resulting in Injury or Fatality	MAKING PROGRESS
Minimize disparities in safety across Maryland's diverse communities	Annual Number of Fatalities and Serious Injuries on Maryland Public Roads in Transportation Disadvantaged Communities	FACING CHALLENGES
Address multimodal safety needs to support a safe, low stress and secure transportation system	Preventable Incidents Per 100,000 Vehicle Miles on Transit	MAKING PROGRESS
	Percentage of State-Owned Roadway Directional Miles Within Urban Areas That Have Sidewalks	N/A*
	Percent of Sidewalks That Meet Americans With Disabilities Act (ADA) Compliance	MAKING PROGRESS
	Miles of Lower Level of Traffic Stress (LTS) Score	MAKING PROGRESS
Maintain a safe system during adverse weather events, man-made threats and other system disruptions	Incident (Coordinated Highways Action Response Team, or CHART) Response Rates/Times	TARGET ACHIEVED
	Average Time to Restore Normal Operations After a Weather Event (Roadway Clearance Times for Weather Events)	MAKING PROGRESS

\*Target under development

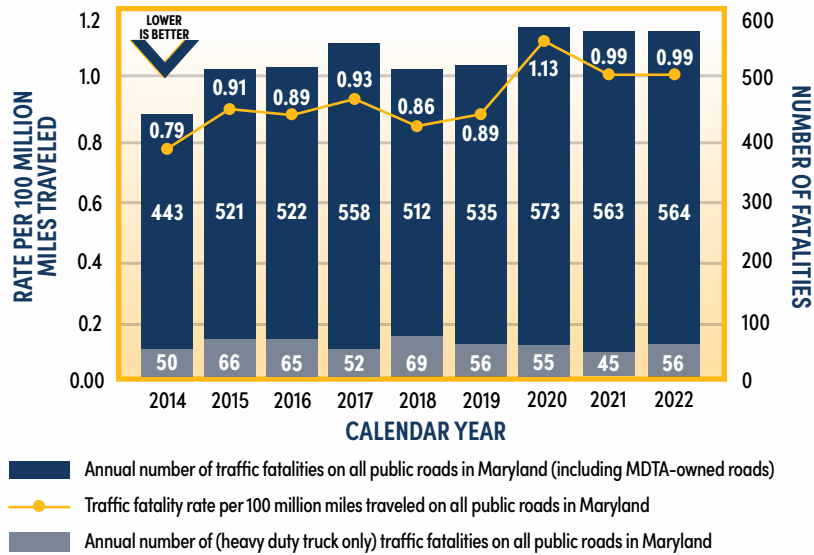
The six safety emphasis areas are:

- Distracted driving
- Impaired driving
- Infrastructure
- Occupant protection
- Pedestrians and bicyclists
- Speed and aggressive driving

Another key element of safety involves resilience of the transportation network after disruption, whether by a natural disaster or crashes. The Coordinated Highways Action Response Team (CHART) handles thousands of such events in clearing and aiding disabled vehicles. CHART is a joint effort of SHA, the Maryland State Police (MSP) and the MDTA in cooperation with various federal, state and local agencies.

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

## ANNUAL NUMBER OF FATALITIES ON ALL MARYLAND PUBLIC ROADS



### What Is the Trend?

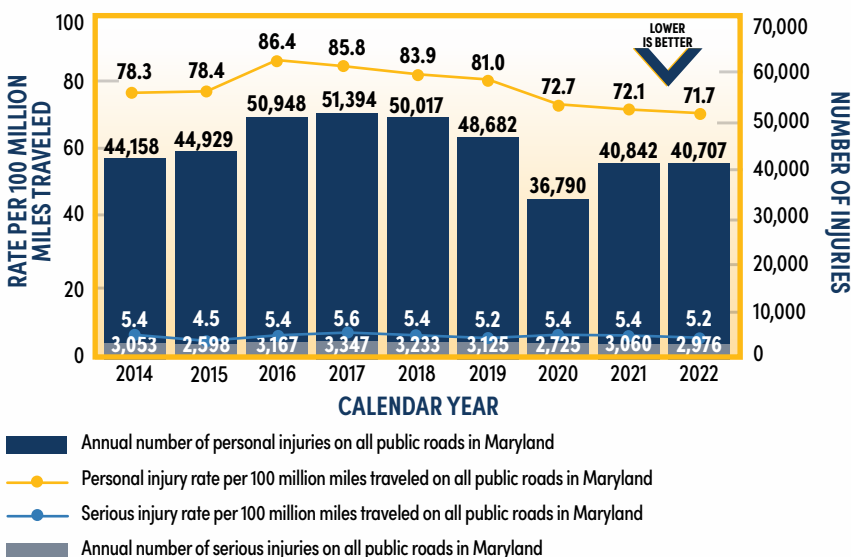
- Motor vehicle crashes continue to present a major public health concern across the nation. Maryland experienced an increase in motor vehicle fatalities for three straight years (2018–2020) but had a slight decrease to 563 fatalities in 2021. In 2022, fatalities increased to 564, lower than the high Maryland experienced in 2020 (573) during the height of the COVID-19 pandemic, but higher compared to pre-2020 levels and demonstrating a concerning trend, also seen nationally. Unfortunately, Maryland is estimated to surpass 600 fatalities in 2023, the most since 2007. VMT fluctuated over the years under COVID-19 pandemic restrictions and return-to-work outcomes, with historic lows in 2020 (16% decrease in VMT compared to 2019), followed by a 12% increase in VMT in 2021 compared to 2020. In 2021, VMT was still down by nearly 6% compared to pre-pandemic levels in 2019. In 2022, VMT increased slightly by 3% compared to 2021. Maryland's overall fatality, fatality rate, and serious injury trends remain statistically unchanged. The fatality rate, which measures the number of fatalities against VMT, decreased slightly from 0.994 to 0.993.

TARGET: Zero fatalities

### What Are Future Strategies?

- In addition to state-funded safety programs and projects, Governor Wes Moore in August 2023 announced more than \$11.5 million in federal highway safety grants to organizations across Maryland as part of a statewide focus to prevent motor vehicle crashes and eliminate roadway fatalities. The federal funds were distributed on October 1, 2023 by the Maryland Highway Safety Office (MHSO) to 85 agencies, organizations and programs.

## ANNUAL NUMBER OF SERIOUS INJURIES ON ALL MARYLAND PUBLIC ROADS



### What Is the Trend?

- In 2022, the overall number of serious injuries decreased slightly, with 84 fewer injuries compared to 2021. Looking back a decade or more, the historical trend for serious injuries has remained relatively flat.

### What Are Future Strategies?

- Maryland continues to implement the Vision Zero approach of its 2021–2025 SHSP through various programs, campaigns and projects. Some examples include the annual training for the Maryland Chiefs of Police Association and the Maryland Sheriffs' Association held in September 2022, the annual Highway Safety Summit conducted by MDOT and MHSO, and promotion of sober driving by MHSO in coordination with local partners during holidays and weekend events when there is a higher consumption of alcohol, such as Halloween, Super Bowl weekend, Cinco de Mayo and Memorial Day.

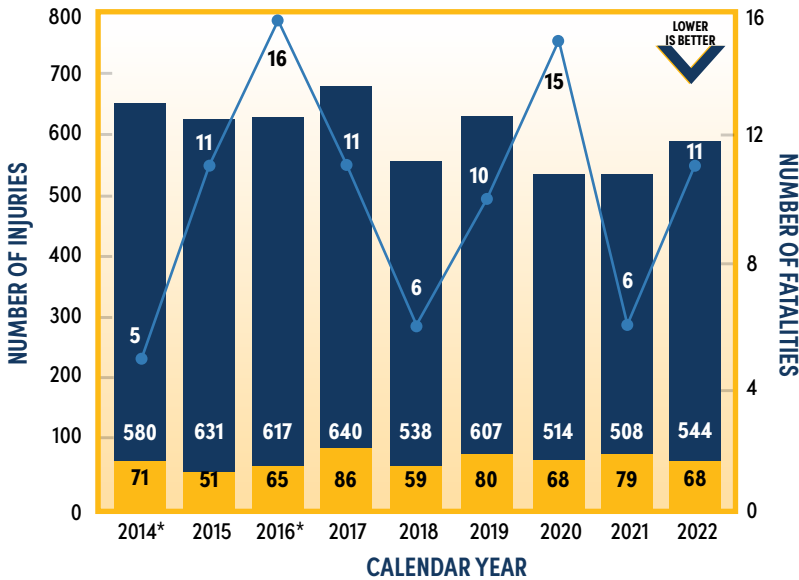
TARGET: Zero serious injuries

# ANNUAL NUMBER OF BICYCLE AND PEDESTRIAN FATALITIES AND SERIOUS INJURIES ON ALL MARYLAND PUBLIC ROADS



FACING CHALLENGES

### Number of Bicycle Fatalities and Injuries



■ Number of bicycle injuries on all public roads in Maryland  
—●— Number of bicycle fatalities on all public roads in Maryland  
■ Number of bicycle serious injuries on all public roads in Maryland

**TARGET:** Zero fatalities and serious injuries

\* 2014 and 2016 data have been revised from previous report.

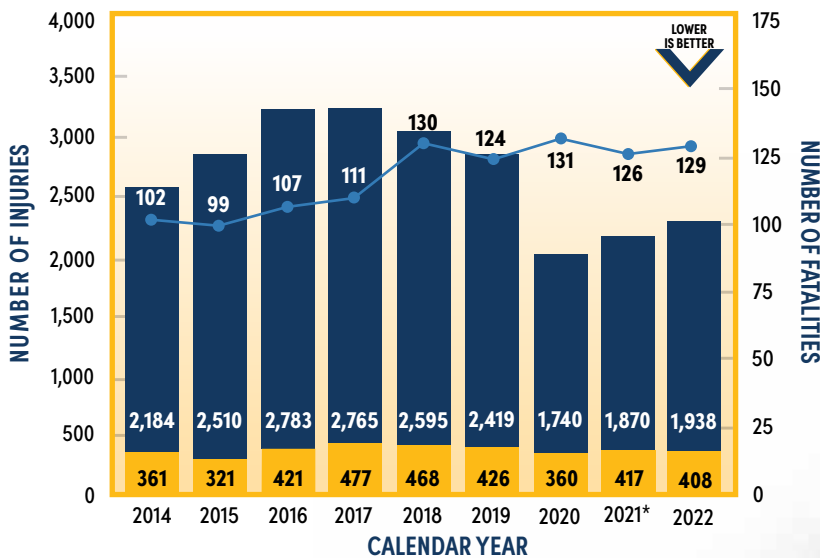
### What Is the Trend?

- In 2022, 564 people were killed on Maryland roadways, including 129 pedestrians and 11 bicyclists, an increase from 2021 when the state had 563 fatalities, including 126 pedestrians and six bicyclists. This translates to a near doubling of bicycle fatalities. Pedestrian fatalities increased by 2.4% and non-motorist (all types) deaths now represent nearly one in four of all traffic fatalities. Pedestrian serious injuries decreased only slightly (417 to 408, or 2.15%).

### What Are Future Strategies?

- In September 2023, Governor Moore announced \$25.5 million in grants for 40 bicycle, pedestrian and trail projects across Maryland. FY 2024 grants include \$20.8 million in federal funding for 22 projects through the Transportation Alternatives Program (TAP) and the Recreational Trails Program (RTP), and \$4.7 million in state funding for 18 projects through the MDOT Kim Lamphier Bikeways Network Program. MHSO also worked with the metropolitan planning organizations in Maryland to promote the pedestrian and bicycle safety high visibility enforcement campaigns, *Look Alive* (Baltimore Metro) and *Street Smart* (Washington Metro). Several Maryland localities received USDOT Safe Streets for All (SS4A) grants in the Round 1 FY23 award cycle, including the City of Baltimore, the City of Cambridge and Queen Anne's County among others, totaling \$11.28 million.

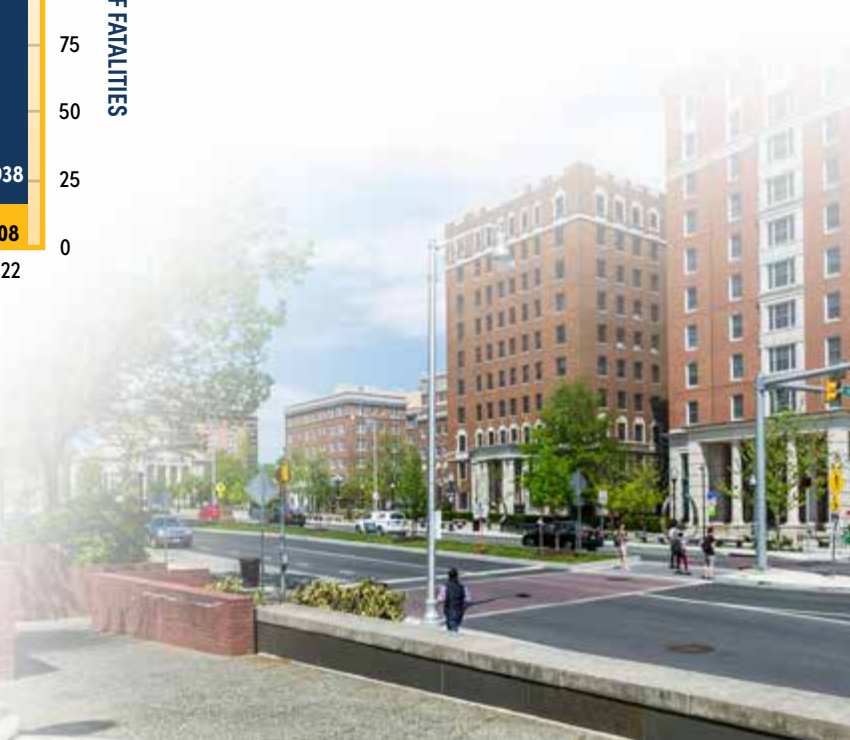
### Number of Pedestrian Fatalities and Injuries



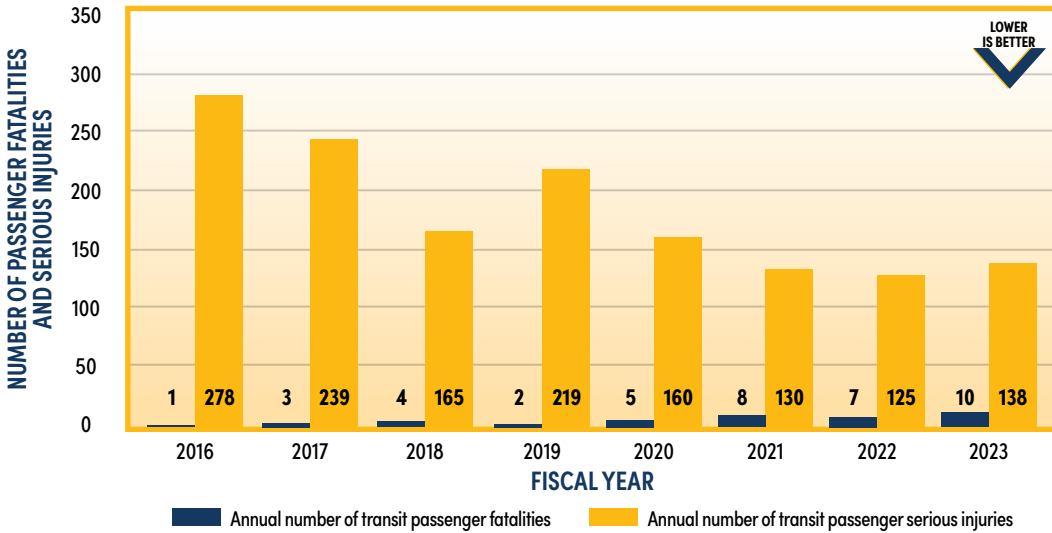
■ Number of pedestrian injuries on all public roads in Maryland  
—●— Number of pedestrian fatalities on all public roads in Maryland  
■ Number of pedestrian serious injuries on all public roads in Maryland

**TARGET:** Zero fatalities and serious injuries

\* 2021 data have been revised from previous report.



# ANNUAL NUMBER OF TRANSIT PASSENGER FATALITIES AND SERIOUS INJURIES



## What Is the Trend?

- The number of transit passenger fatalities has increased and the number of transit passengers with serious injuries is up to 138 in FY 2023 from 125 in FY 2022. These trends are a departure from previous years, which showed a decline even pre-pandemic when transit service was at the highest capacity.

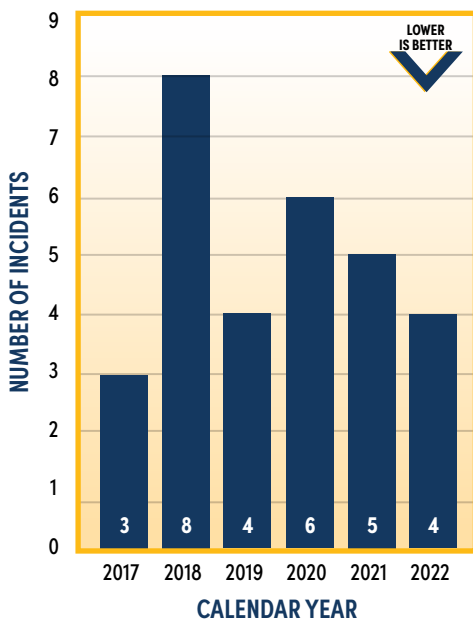
TARGET: Zero fatalities and serious injuries



## What Are Future Strategies?

- MTA is committed to reducing fatalities and serious injuries. MTA has scheduled routine maintenance and inspections at stations and on guideways to reduce safety concerns around physical infrastructure. They also have implemented new standard operating procedures targeting safety awareness and best safety practices for MTA employees. Lastly, MTA utilizes numerous forms of communication to inform riders of potential issues or safety concerns wherever they may occur. These include service alerts on websites, eAlerts through email or text, app based updates on the transit app, and broadcast updates on social media platforms and radios.

# ANNUAL NUMBER OF AT-GRADE RAILROAD CROSSING INCIDENTS RESULTING IN INJURY OR FATALITY\*



At-grade railroad crossings are designated in the Federal Railroad Administration's (FRA) database for points of conflict between the train and a motorist/pedestrian/cyclist. This includes roadways, pathways and pedestrian station crossings.

## What Is the Trend?

- From a peak of eight fatalities in CY 2018, Maryland saw a decrease to four fatalities in CY 2022. In 2022, MDOT obligated four safety projects under the Federal Highway Administration's (FHWA) Section 130 Program and re-established the Maryland Operation Lifesaver public safety education and awareness program.

## What Are Future Strategies?

- To meet its Vision Zero goals, MTA will improve education efforts under the Maryland Operation Lifesaver Program and continue to develop at-grade safety projects using Section 130 Program funding. In FFY 2022, MTA received over \$1.5 million from FRA for the Warner Street Highway-Rail Grade Crossing Project. MTA will continue to seek out other grant opportunities for safety crossings.

TARGET: Zero fatalities and serious injuries

\*This performance measure is new to the AR.

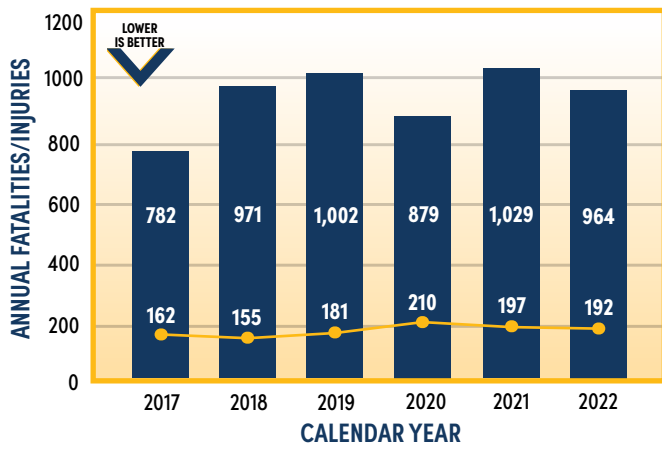


# Objective: Minimize disparities in safety across Maryland’s diverse communities

## ANNUAL NUMBER OF FATALITIES AND SERIOUS INJURIES ON MARYLAND PUBLIC ROADS IN TRANSPORTATION DISADVANTAGED COMMUNITIES\*



MDOT is committed to bringing equity to the forefront as a lens for project prioritization and safety interventions and is developing methodologies for executing the same. This performance measure represents the best available data, a consensus on methodology selection amongst practitioners, and the guidance of the AR Advisory Committee (ARAC), at the time of this report. Additional methodologies, applications and performance measures are being evaluated, or are under development, by MHSO and other MDOT modes, especially as guidance from federal agencies and national partners evolves, and MDOT programs continue to incorporate equity as a priority focus of safety efforts. The MHSO will utilize a safety equity model, developed by partners at the University of Maryland National Study Center for Trauma and EMS and the Washington College GIS Program, to also analyze transportation disadvantaged communities in Maryland by zip code tabulation areas, in addition to using methodologies and applications such as the USDOT’s Equitable Transportation Community (ETC) Explorer, to improve public participation and engagement (PPE). The MHSO will continually assess and develop and track appropriate performance measures to ensure PPE is equitably administered. Other MDOT modes are currently being reviewed for inclusion under this measure.



### What Is the Trend?

- Available data from 2017-2022 shows an overall increase in disadvantaged communities that is proportional to the overall increase in fatalities and serious injuries with slight declines in 2022. From the low point of 155 in 2018, fatalities in disadvantaged communities increased by 24% to 192 by 2022. The number of serious injuries from the same period shows a wide variation over each year with an overall increasing trend. Each year, approximately one-third of Maryland fatalities and serious injuries occur in transportation disadvantaged communities.

### What Are Future Strategies?

- MHSO will focus on transportation disadvantaged zip codes with outreach and education and document the number of events and persons reached through community engagement in these areas during the federal fiscal year, dependent on resources, partners and available funding.

■ Annual number of serious injuries in transportation disadvantaged communities  
● Annual number of fatalities in transportation disadvantaged communities  
**TARGET:** Zero fatalities and serious injuries  
*\*This performance measure is new to the AR.*

# Objective: Address multimodal safety needs to support a safe, low stress and secure transportation system

## PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES ON TRANSIT\*



FISCAL YEAR	2016	2017	2018	2019	2020	2021	2022	2023
<i>Preventable Incidents Per 100,000 Vehicle Miles on Transit</i>								
Baltimore Metro	0.3	0.3	0.15	0.2	0.1	0.08	0.08	0.04
Light Rail	0.24	0.27	0.39	0.37	0.3	0.47	0.31	0.31
Paratransit/ Taxi Access	1.04	1.04	0.77	1.32	1.1	1.4	3.8	1.4
Local Bus	1.54	1.54	1.44	1.76	1.5	1.3	2.0	1.87

**TARGET:** Zero for all modes  
*\*Data have been revised from previous report.*

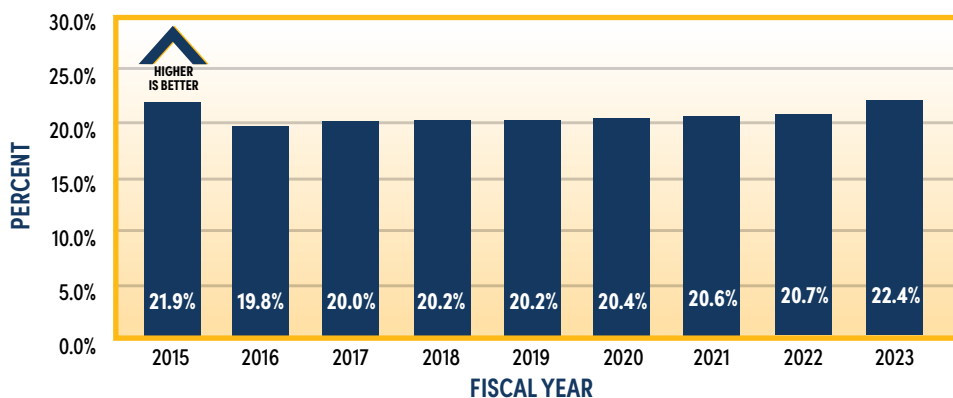
### What Is the Trend?

- Incident rates are down across MTA modes from 2022-2023, most notably paratransit incidents are down to 1.4 from a high of 3.8 incidents per 100,000 vehicle miles. Also, Baltimore Metro has seen a reduction of incidents from 0.08 to 0.04 incidents per 100,000 vehicle miles.

### What Are Future Strategies?

- MTA provides extensive training to operators to mitigate incident events. Operators who are involved in incidents receive additional targeted training to reduce future incidents. MTA provides daily bulletins to operators informing them of any areas or situations which may present increased risks. Further, MTA has maintenance teams who track preventative maintenance to minimize any incidents due to vehicular failure.

## PERCENTAGE OF STATE-OWNED ROADWAY DIRECTIONAL MILES WITHIN URBAN AREAS THAT HAVE SIDEWALKS



TARGET: Target being developed for next year's report



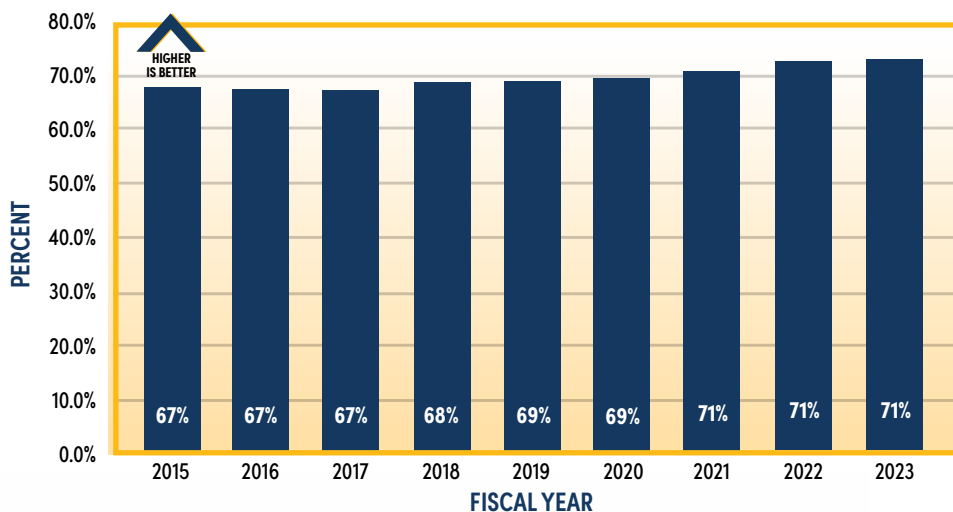
### What Is the Trend?

- The percentage of state-owned roadway directional miles within urban areas that have sidewalks has remained largely flat for the 10-year reporting period.

### What Are Future Strategies?

- SHA invested \$5.2 million in FY 2023 to design and construct new sidewalks, including the construction of new directional miles of sidewalk on MD 173, MD 214 in Anne Arundel County, US 1 in Howard County, MD 7 and MD 222 in Cecil County. SHA continues to partner with local governments to maximize federal funding opportunities utilizing local participation as a match. SHA also has been exploring additional ways to identify and prioritize gaps in the system via initiatives like Pedestrian Safety Action Plan (PSAP) and focusing on a context driven approach to achieve better pedestrian connectivity on corridor projects.

## PERCENT OF SIDEWALKS THAT MEET AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE



TARGET: Increase sidewalks that meet ADA compliance by 2%

### What Is the Trend?

- The percentage of ADA compliant sidewalks has increased by nearly 6% in the 10-year period (FY 2014-FY 2023). SHA partners internally and with local agencies to maximize resources and collectively tackle ADA compliance issues across the system. SHA also has provided funding for local jurisdictions to address ADA compliance issues affecting the state highway system.

### What Are Future Strategies?

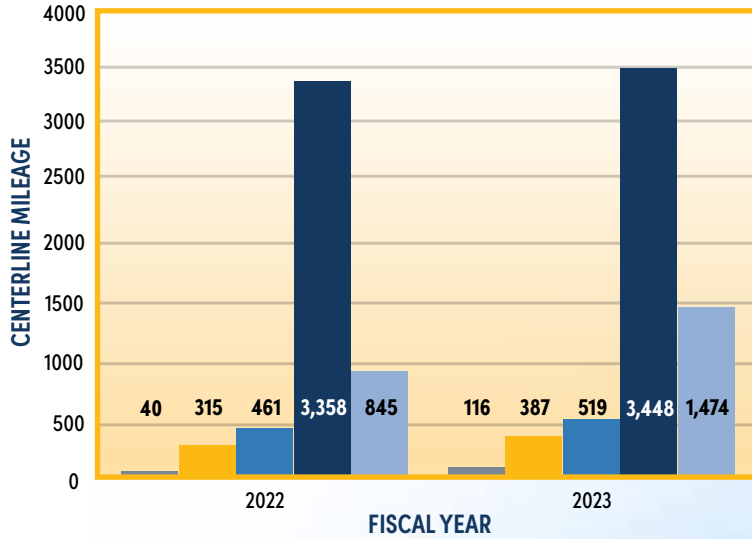
- SHA invested \$8.6 million in FY 2023 to design and re-construct sidewalks in Anne Arundel, Baltimore, Worcester, Montgomery, Frederick and Prince Georges Counties. This includes ADA improvements along MD 33 in Saint Michaels and MD 725 in Upper Marlboro. Since the MTA launch of the \$43 million Fast Forward initiative in 2021 to improve transit reliability, travel times, customer safety and access, MTA has installed new bus shelters and implemented ADA improvements to sidewalks.



# MILES OF LOWER LEVEL OF TRAFFIC STRESS (LTS) SCORE\*



The 2022 AR announced the adoption of LTS as a new performance measure. Bicycle LTS measures the “bikeability” of the roadway network from the bicyclist’s point of view. This year, MDOT applied the new methodology to the transportation network for both FY 2022 and FY 2023. Under this performance measure, LTS 1 roadways would be the most bike-friendly.



## What Is the Trend?

- LTS 1 and LTS 5 show significant differences between FY 2022 and FY 2023. The differences between FY 2022 and FY 2023 for LTS 1 are the result of integrating shared-use paths that are side paths along SHA roadways into One Maryland One Centerline. This more accurately reflects existing conditions. Routes prohibited to bicycle traffic, the LTS 5 component, has been updated to include ramps where bicycles are prohibited. These ramps have been incorporated into the LTS centerline mileage resulting in a significant difference.

However, an increasing trend is still seen for LTS 2 and LTS 3 between FY 2022 and FY 2023. Facilities designated LTS 2 increased by 72 miles and facilities designated LTS 3 increased by 58 miles.

## What Are Future Strategies?

- With the 2050 Maryland BPMP, MDOT developed new bicycle facility selection guidance based on Context Driven Guidelines to relate LTS to target bicycle audiences. Using this process, LTS scores will improve and encourage more trips by bicycle.

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

TARGET: Overall increase

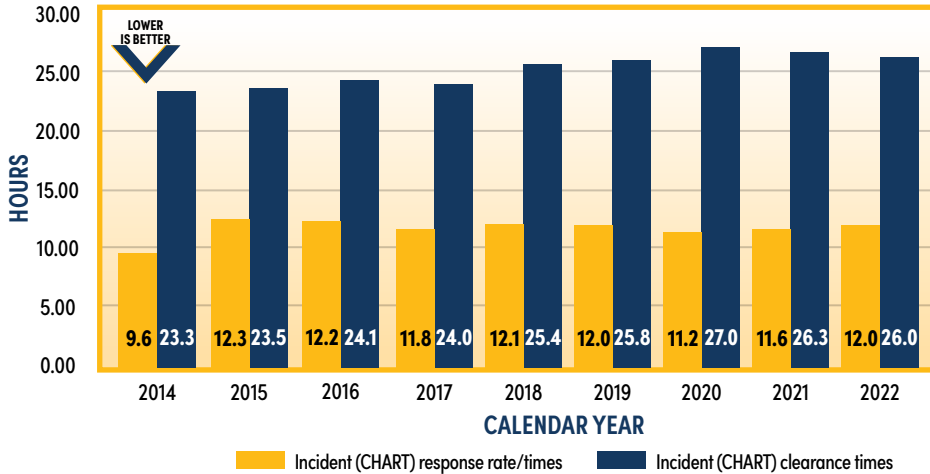
\*This performance measure is new to the AR.





# Objective: Maintain a safe system during adverse weather events, man-made threats and other system disruptions

## INCIDENT (COORDINATED HIGHWAYS ACTION RESPONSE TEAM, OR CHART) RESPONSE RATES/TIMES



### What Is the Trend?

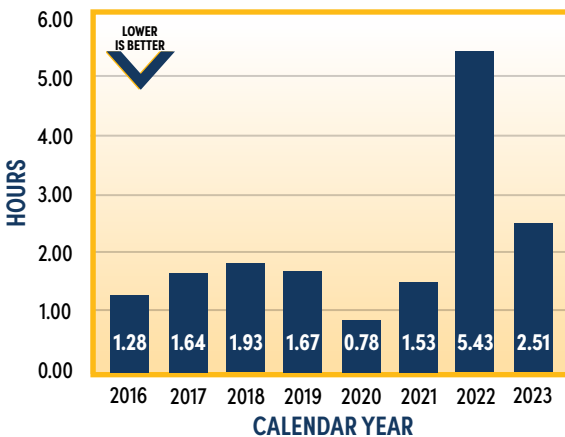
- Response time in 2022 was just under 12 minutes continuing the trend since 2015. Even taking into consideration the COVID-19 pandemic, response times remain low, meaning that CHART continues to arrive very quickly at incident scenes.

TARGET: 15 minutes

### What Are Future Strategies?

- CHART is updating traffic incident timing plans for Transportation Systems Management and Operations (TSMO) System 1, which covers Active Traffic Management (ATM) strategies along multiple routes, including I-70, US 40, US 29 and MD 99. Evaluations continue for the Office of Transportation Mobility and Operation's (OTMO) CHART patrol program to reduce roadway delays and improve user cost savings. They will also expand real-time signal timing adjustment to support Eastern Shore Traffic Operations (ESTO) during summer months using Advanced Traffic Signal Performance Measures (ATSPM) and CENTRACS traffic responsive operations to improve incident management for beach access.

## AVERAGE TIME TO RESTORE NORMAL OPERATIONS AFTER A WEATHER EVENT (ROADWAY CLEARANCE TIMES FOR WEATHER EVENTS)



### What Is the Trend?

- Roadway clearance times for weather events, or the time it takes after responses to clear roadways, peaked in 2022. The peak is mostly due to a large turnover in employees for snow removal and above average snowfall in southern Maryland and the Eastern Shore. The durations have been clocking in faster year over year since 2020, though not as fast as 2014. This is notable since the years 2020 and 2021 saw an increase in fatal and serious injuries nationally. The drop from 2022 is largely because 2022-2023 had a light winter and resulted in little winter event data outside of far western Maryland.

### What Are Future Strategies?

- SHA continues to train its field staff both virtually and online on salt management for clearing the roadways during winter operations. An expansion in the use of rubber plow blades for clearing snow and ice from roadways and reduce salt use is also underway. More one-day hiring events are being organized to develop a steady pool of field maintenance personnel and reduce impacts from employee turnover. Additionally, the Federal Motor Carrier Safety Administration is providing training aid for new Commercial Driver's License. SHA is also procuring information technology services, integrating the Mobile Advanced Road Weather Information System (MARWIS) and Maintenance Decision Support System (MDSS), to make better decisions on resource allocation during winter events.

TARGET: 1.5 hours or fewer to regain bare pavement



# GOAL DELIVER SYSTEM QUALITY: DELIVER A RELIABLE, HIGH-QUALITY, INTEGRATED TRANSPORTATION SYSTEM

Key Outcomes: The 4 objectives and 16 performance measures outlined here will deliver system quality. By investing to achieve system quality, we will create an infrastructure program that is financially sustainable, environmentally resilient and in a state of good repair.

MDOT delivers a high quality, reliable and integrated multi-modal transportation system by maintaining infrastructure in a state of good repair, enhancing performance of transit services, reducing truck delays and congestion, leveraging state and federal infrastructure funding and refining the project delivery process. In 2022, Maryland won Maryland Quality Initiative (MdQI) Modal Awards for delivering qualitative and innovative transportation projects. Winning projects included SHA's \$28 million replacement and widening of I-95 and I-495 bridges over Suitland Parkway and MTA's \$27 million North Avenue Rising project. In 2023, MDOT was able to reduce the percentage of bridges in poor condition from 0.9% in 2022 to 0.7% in 2023 by the efficient use of federal funds for bridge rehabilitation and preservation program.

MDOT is working efficiently on minimizing travel delays for MTA transit services. In 2022, there was substantial improvement in on-time performance (OTP) for Mobility Paratransit and Taxi Access mode. In August 2023, MTA introduced express services such as QuickLink 40, which reduced approximately 25 minutes of travel time for riders. MDOT is also focused on providing a resilient multimodal system and improving incident management.

## Performance Measures

OBJECTIVES	PERFORMANCE MEASURE	RATING	
Provide a multimodal system resilient to changing conditions and hazards	Percentage of Lane-Miles/Fixed Guideway Transit-Miles Susceptible to Flooding and Storm Surge	N/A*	
	Unfunded State of Good Repair Backlog	N/A*	
	Percentage of the Maryland State Highway Network In Overall Preferred Maintenance Condition	TARGET ACHIEVED	
	Overall Acceptable Pavement Condition	TARGET ACHIEVED	
Increase the percentage of state-owned or funded facilities and assets in a state of good repair	Percentage of All Maryland Bridges That Are in Poor Condition	N/A*	
	Minimize travel delays and improve reliability and quality	Percent of All MDOT Transit Service Provided on Time	MAKING PROGRESS
		Annual Person Hours of Delay and Travel Time Reliability on Maryland Public Roads	ON TARGET
		Truck Hours of Delay And Truck Reliability on Maryland Public Roads	FACING CHALLENGES
		Annual Cost of Congestion (Billions) on the Maryland Public Roadway Network	ON TARGET
User Cost Savings for the Traveling Public Due to Incident Management		ON TARGET	
Accelerate project completion through improved project delivery	Percent of CTP Program That Is Funded With Federal Dollars	N/A*	
	Percent of Projects Delivered on Time Across MDOT	N/A*	
	Percent of Projects Delivered On-Budget Across MDOT	N/A*	
	Percent of MDTA Tolling Transactions Collected Via E-ZPass® vs. Video Tolls vs. Pay-By-Plate	N/A*	
	MVA Alternative Service Delivery (ASD) Transactions As Percent of Total Transactions	TARGET ACHIEVED	
	MVA Average Cost Per Transaction	TARGET ACHIEVED	

\*Target under development

In 2022, MDOT saved more than \$2 billion for roadway users in incident management by using Intelligent Transportation System (ITS) services, signal upgrades and the Coordinated Highways Action Response Team (CHART) program.

# Objective: Provide a multimodal system resilient to changing conditions and hazards

## PERCENTAGE OF LANE-MILES/FIXED GUIDEWAY TRANSIT-MILES SUSCEPTIBLE TO FLOODING AND STORM SURGE\*

This new performance measure identifies the percentage of lane miles and fixed guideway transit miles that are prone to damage during a storm and flooding. Measures are being taken to mitigate these risks and maintain transportation infrastructure resilience.

FISCAL YEAR	2023
Percentage of lane-miles/ fixed guideway transit-miles susceptible to flooding and storm surge	6.5%

TARGET: 2030: Baseline trend for the first year; 2050: Target being developed for next year's report

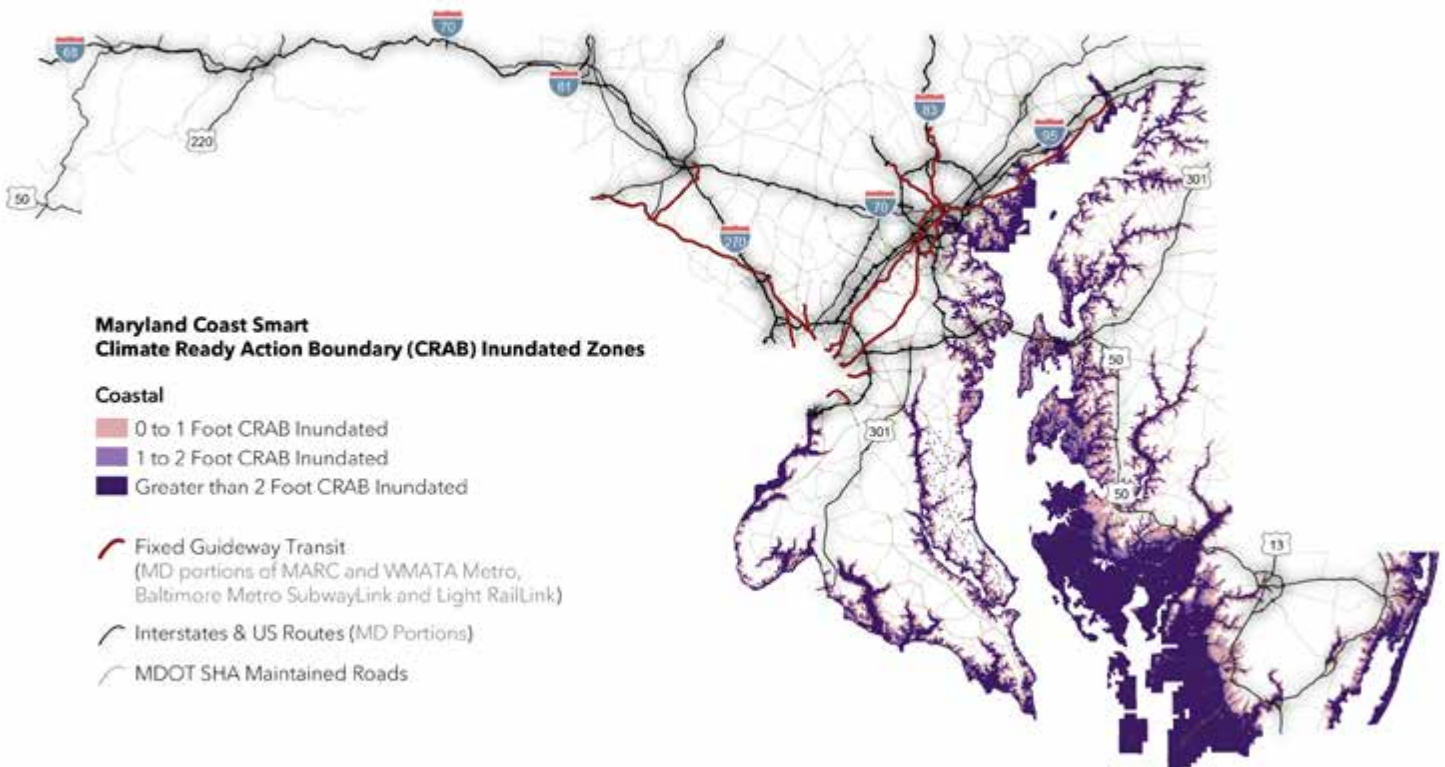
\*This performance measure is new to the AR.

### What Is the Trend?

- While this is a new measure with no historic data, in 2023, 6.5% of lane-miles/ fixed guideway transit-miles were susceptible to flooding and storm surge. In the past, MDOT has assessed vulnerability of the state's roadway system to storm surges using climate data and compiled an index to show their risks to storm events.

### What Are Future Strategies?

- MDOT established an inventory of susceptible assets to manage and monitor the prospective risks and take proactive actions to mitigate hazards.



# Objective: Increase the percentage of state-owned or funded facilities and assets in a state of good repair

## UNFUNDED STATE OF GOOD REPAIR BACKLOG\*

This new performance measure identifies the number of projects that are still unfunded from the state of good repair list of Maryland state assets in order to show progress towards system preservation. As per USDOT definition, a capital asset is in a state of good repair if it is in a condition sufficient for the asset to operate at a full level of performance.

FISCAL YEAR	2023
Unfunded State of Good Repair Backlog	\$3.14 billion projects

TARGET: 2030: Baseline trend for the first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

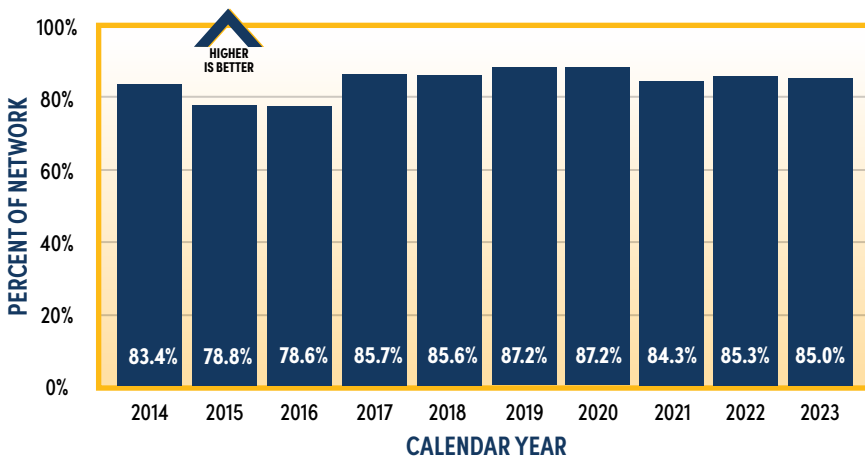
### What Is the Trend?

- This is a new measure with no historic data. In FY 2023, there were \$3.14 billion of projects that are still unfunded from the state of good repair.
- There are limited state funds for state of good repair improvements, while costs of goods and materials have been on the rise, as well as inflation.

### What Are Future Strategies?

- MDOT uses a strategic asset management plan to assess useful life across the system. MDOT's modal administrations develop, implement, and evaluate modal-specific needs to support the overall MDOT asset management framework.
- The Maryland Commission on Transportation Revenue and Infrastructure Needs (TRAIN) is exploring options for new state funding opportunities.

## PERCENTAGE OF THE MARYLAND STATE HIGHWAY NETWORK IN OVERALL PREFERRED MAINTENANCE CONDITION



TARGET: 2030: 85%; 2050: Target being developed for next year's report

### What Is the Trend?

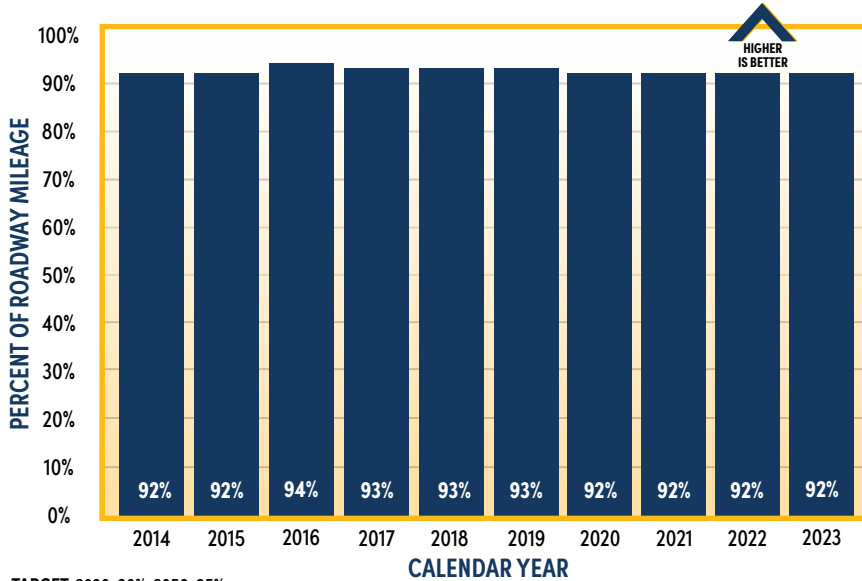
- The percentage of the Maryland state highway network in overall preferred maintenance condition has remained steady at 85% since the past year.
- Some of the improvement projects from past year include Resurfacing and Safety Improvements on MD 39 (Hutton Road) from Ashby Road to US 219 and Bridge Structure Rehabilitation and a Bridge Deck Replacement on MD 51 (Industrial Boulevard) Bridge over MD 51/MD 61 (S. Wineow Street) and CSX.

### What Are Future Strategies?

- The new American Legion Bridge (ALB) + I-270 Project will replace the aging American Legion Bridge and relieve traffic congestion.
- Another project ensuring that the fixed assets are in state of good repair is the MD 198 Burtonsville Improvement Project. The project includes improvements to multi-modal connectivity, accessibility and roadway safety. Currently, the preliminary planning has been completed for this project and the next step is to get environmental approvals.



## OVERALL ACCEPTABLE PAVEMENT CONDITION



TARGET: 2030: 90%; 2050: 95%

### What Are Future Strategies?

- MDOT will continue to focus on improving roadways with deficient cracking and steadily increase the use of non-traditional and innovative pavement preservation treatments, where appropriate, to extend the service of SHA roadways at the lowest possible cost.

### What Is the Trend?

- MDOT resurfaced approximately 3.8% of its pavement network in 2022, which is lower than the 4.7% reported in 2021; preventative maintenance covered an additional 2.6% of the network, which is lower compared to 10.0% in 2021.
- The number of projects for improving the road network decreased in 2022. It is anticipated that the “percent acceptable” conditions generally will remain steady over the next 1-2 years despite the gap between the reasonably available funding and the objective funding needed to maintain state of good repair long-term.
- The impact of cracking (a significant cost driver) has remained steady since 2019. Friction remains the biggest driver in the percent acceptable reduction. Roadways with high friction ensure safety of vehicles as it prevents the vehicles from sliding while turning. To proactively address friction improvement needs across its roadway network, in 2021, SHA collaborated successfully to develop a statewide friction contract for High Friction Surface treatment (HFST) and Surface Abrasion. This contract is now in its second annual iteration.

## PERCENTAGE OF ALL MARYLAND BRIDGES THAT ARE IN POOR CONDITION

CALENDAR YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Number of MDTA Bridges in Poor Condition	1	1	1	1	1	1	1	0	0	0
Number of MDOT SHA Bridges in Poor Condition	81	69	69	67	62	52	36	29	26	22
Total Number of Bridges in Poor Condition	82	70	70	68	63	53	37	29	26	22

TARGET: 2030: Target being developed for next year's report; 2050: Target being developed for next year's report

\*2023 data are preliminary and subject to change.

### What Is the Trend?

- MDOT recorded 22 poor-rated state bridges during their annual condition submission to Federal Highway Administration (FHWA) in March 2023. 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 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. There are currently 19 active on-call construction crews, which is an increase from nine crews during the height of the COVID-19 pandemic but a reduction from 30 crews prior to 2020.

### What Are Future Strategies?

- Detailed Asset Lifecycle Management plans were developed and submitted for the bridges on the SHA and MDTA networks that document the process for keeping structural assets in a state of good repair.
- MDOT continues to develop plans for bridges with a poor rating that cannot be repaired under the preservation program.
- MDOT is working to develop plans for major rehabilitation or replacement on several fair-rated bridges that are on high-volume roadways, including the NHS, 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.

# Objective: Minimize travel delays and improve reliability and quality

## PERCENT OF ALL MDOT TRANSIT SERVICE PROVIDED ON TIME



MODE	2014	2015	2016	2017	2018	2019	2020	2021	2022*	2023**
Local Bus	N/A	60%	58%	77%	68%	69%	74%	74%	76%	73%
Light Rail	96%	97%	98%	96%	94%	95%	96%	92%	93%	93%
Baltimore Metro	96%	95%	96%	96%	94%	94%	71%	90%	91%	87%
MARC	92%	92%	94%	91%	91%	87%	92%	94%	94%	94%
Mobility Paratransit & Taxi Access	91%	88%	92%	93%	93%	86%	89%	76%	89%	94%

TARGET: 2030: 99% for all except Local Bus; 2050: 90%

\*2022 data have been revised from previous report.

\*\*Besides Local Bus, 2023 data is estimated and subject to change.

### What Are Future Strategies?

- MTA is utilizing real-time data to assess the performance of vehicles while in service. This information is used to build better routes and operator schedules.
- MTA is minimizing service cuts due to manpower shortage through new policies for the front-line staff such as increased starting wages and decreased time to get to top rate.
- MDOT is investing \$43 million in the FastForward project to create a reliable, accessible and easier to use transit system in Baltimore City. The project will include dedicated bus lanes, which will improve on time service of the transit system. The project design was completed at the end of 2023 and construction will be completed in 2024.
- MDOT received \$8.8 million in FY 2022 Consolidated Rail Infrastructure and Safety Improvement (CRISI) Program federal funding for the Penn-Camden Connector Project. The project will improve transit operations and reliability between the Penn and Camden Lines for passenger as well as for freight train service.

### What Is the Trend?

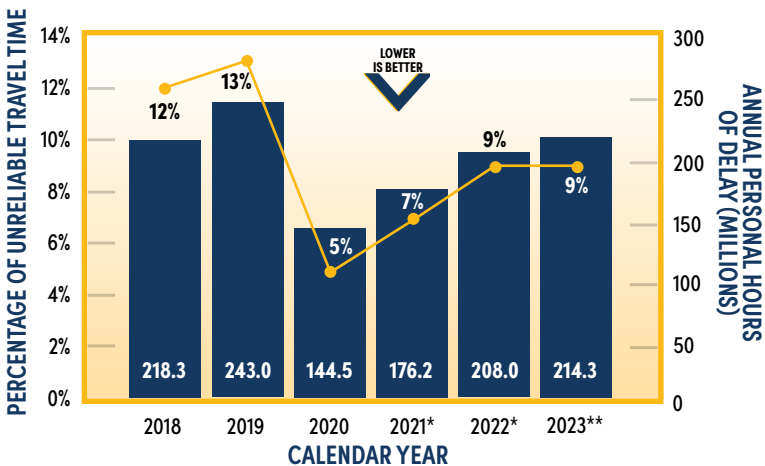
- In 2022, there was an increase in OTP across all modes: Local Bus, Baltimore Metro, Light Rail, MARC, and Mobility Paratransit and Taxi Access.
- OTP for Mobility Paratransit and Taxi Access experienced substantial improvement from 76% in 2021 to 89% in 2022.
- To decrease travel time, MDOT introduced the express bus line in August 2023, QuickLink 40, which eliminated approximately 25 minutes of travel time for the riders using CityLink Orange and Blue lines.



# ANNUAL PERSON HOURS OF DELAY AND TRAVEL TIME RELIABILITY ON MARYLAND PUBLIC ROADS



Tracking annual hours of delay incurred by customers and travel time reliability help MDOT in quantifying the needs of our transportation system. SHA uses private sector vehicle probe data to monitor travel time reliability on the highway network and uses Planning Time Index (PTI) as the reliability metric. PTI indicates the percent of time that the MDOT highway network is considered to be highly unreliable.



■ Annual person hours of delay (millions)  
 ● Travel time reliability

TARGET: 2030: 202 million hours; 2050: 201 million hours

\*Data are preliminary

\*\*2023 data are projected and subjected to change

Note: The methodology used for reporting the 2022 (and prior years) delay values was updated to reflect recent refinements in OPPE's Maryland Roadway Performance Tool (MRPT) and because the trends calculated seem to more reasonably reflect ADT/VMT and congestion trends. The methodology for TTR remains the same.

## What Is the Trend?

- Gradual increases in delay seems to correlate with the recovery of the Vehicle Miles Traveled (VMT) starting in 2021. Projected/estimated delay is lower due to more travel outside of peak hours and VMT increasing more slowly.

## What Are Future Strategies?

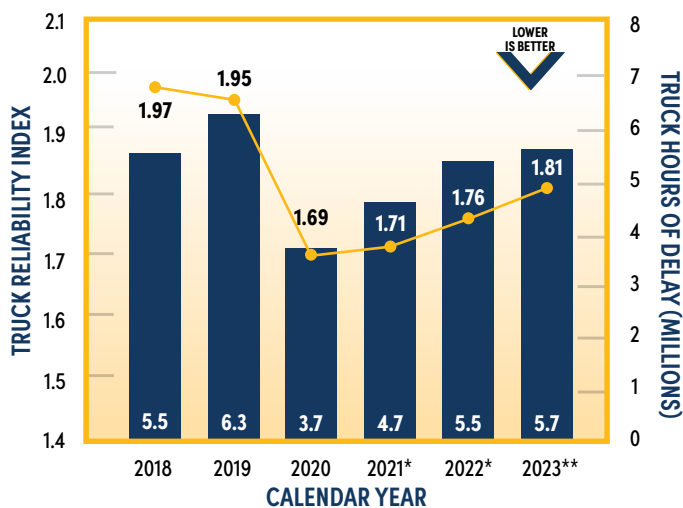
- Strategies include the development and streamlining of ITS, active traffic management and integrated corridor management capabilities. Examples of this include the CHART patrol program, deploying ITS from the Bay Bridge to the Eastern Shore and Transportation Systems Management and Operations (TSMO) projects like ramp-metering along I-270.



# TRUCK HOURS OF DELAY AND TRUCK RELIABILITY ON MARYLAND PUBLIC ROADS



This measure accounts for the delay that heavy-duty truck drivers experience in both recurring congestion (everyday conditions) and non-recurring congestion (incidents, weather, work zones, etc.). SHA measures truck travel time reliability through calculations that use private sector truck probe data provided through the FHWA National Performance Management Research Data Set (NPMRDS) V2.



■ Truck hours of delay (millions)  
 ● Truck reliability

TARGET: 2030: 5.3 million hours; 2050: 5.3 million hours

\*Data are preliminary

\*\*2023 data are projected and subjected to change

Note: The methodology used for reporting the 2022 (and prior years) delay values was updated to reflect recent refinements in OPPE's MRPT and because the trends calculated seem to more reasonably reflect ADT/VMT and congestion trends. The methodology for truck reliability index remains the same.

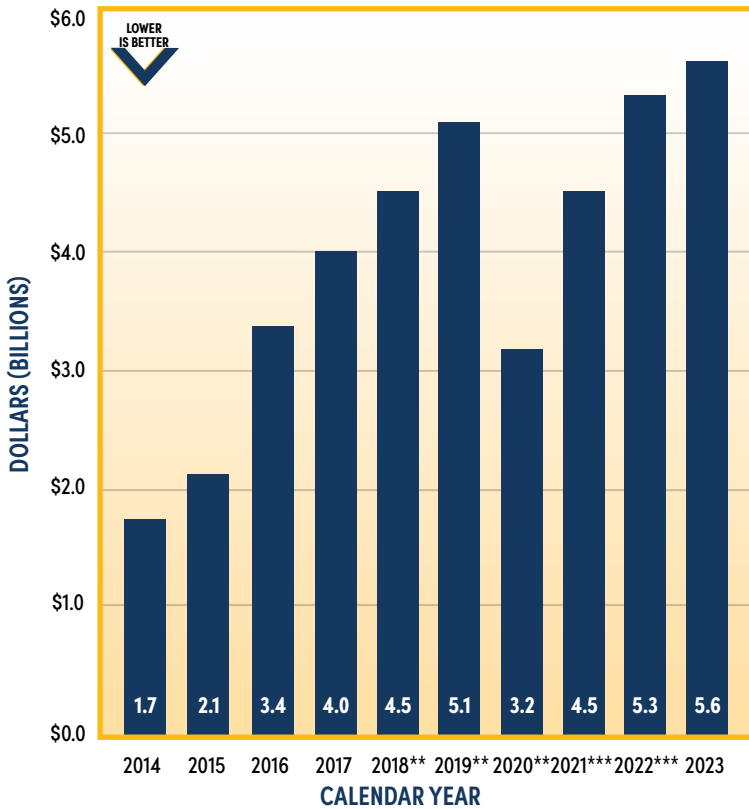
## What Is the Trend?

- Truck delay follows similar trends as all-vehicle person-hours of delay trends. The all-vehicle person-hours and truck hours of delay for 2020 was significantly less than 2019 due to decrease in travel/VMT associated with the pandemic.

## What Are Future Strategies?

- Congestion and reliability trends of trucks need to be carefully monitored to strategically invest in freight corridors and highway networks as Maryland continues to recover from the COVID-19 pandemic. Recent examples that highlight a commitment to efficient freight goods movement within Maryland include:
  - Collaboration with metropolitan planning organizations (MPOs), local agencies, state entities and the private sector to deliver projects that address reliability and efficiency.
  - The 2022 State Freight Plan identified projects for initial National Highway Freight Program (NHFP) funding to improve freight movement in the state.

# ANNUAL COST OF CONGESTION (BILLIONS) ON THE MARYLAND PUBLIC ROADWAY NETWORK\*



## What Is the Trend?

- Overall, there is an increasing trend in annual cost of congestion on Maryland road networks. Due to the COVID-19 pandemic, there was a drop in cost of congestion in FY 2020, but this continued to rise and FY 2023 showed greater cost in congestion compared to pre-pandemic levels at \$5.6 billion.
- Congestion Cost considers delay, cost of wasted time and excess fuel. The person-hours of delay for 2020 was significantly less than 2019 due to decrease in travel/VMT associated with the pandemic. The gradual increase in delay seems to correlate with the recovery of VMT starting in 2021. Projected/estimated delay is flatter due to more travel outside of peak hours and VMT recovery slowing.
- Congestion Cost generally mirrors this congestion trend and reflects inflation trends from year to year. Congestion throughout the state is monitored via the annual mobility report that tracks the congestion along state routes throughout Maryland.

## What Are Future Strategies?

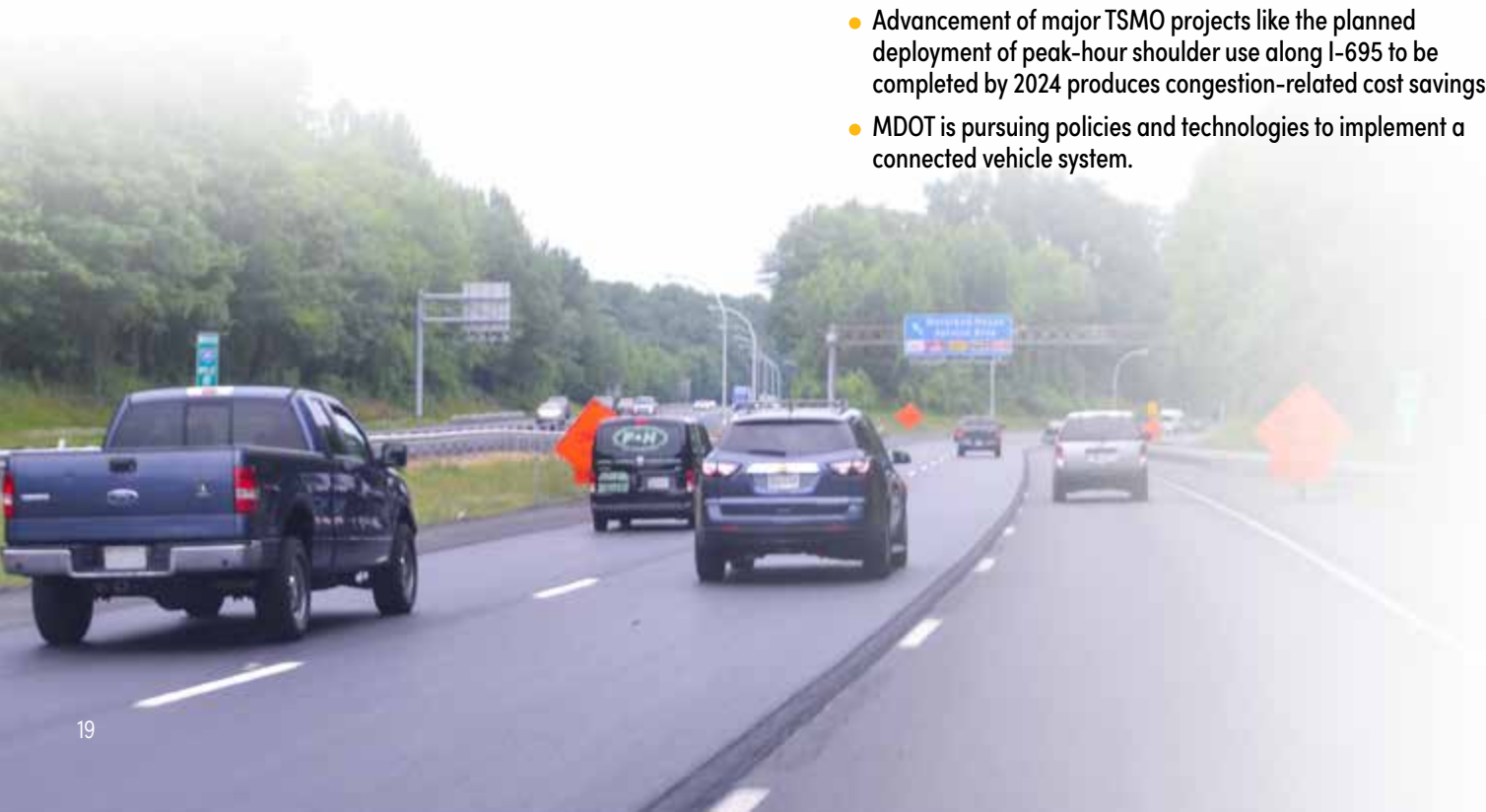
- MDOT continues to develop and streamline ITS, Active Traffic Management (ATM) and integrated corridor management capabilities to reduce congestion. This is best showcased by the various planning, design and construction projects generated by assessing the different TSMO systems across the state.
- MDOT received an \$11.9 million grant from FHWA aimed to reduce congestion on the US 50 corridor for deploying cutting-edge software, sensors, traffic cameras and message signs.
- Evaluation of the CHART patrol program determines continuous improvements to reduce roadway delays and user cost savings and increase roadway reliability.
- Advancement of major TSMO projects like the planned deployment of peak-hour shoulder use along I-695 to be completed by 2024 produces congestion-related cost savings.
- MDOT is pursuing policies and technologies to implement a connected vehicle system.

TARGET: 2030: \$6.0 billion; 2050: \$8.0 billion

\*The methodology for this performance measure has been updated.

\*\*2018-2022 data have been revised from previous report.

\*\*\*2021 and 2022 data are preliminary; 2023 data is forecasted and subject to change.

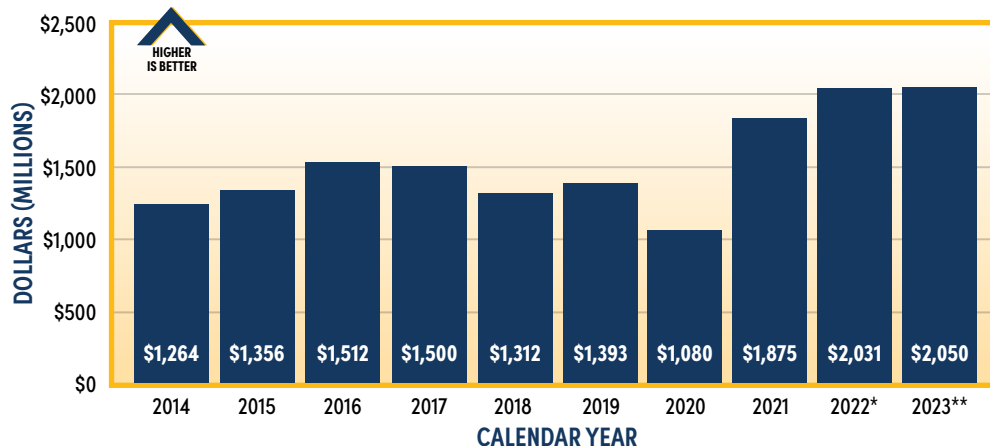




# USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT



ON TARGET



TARGET: 2030: \$2.2 billion; 2050: \$3.0 billion

\*2022 data has been revised from previous report.

\*\*2023 data is preliminary and subject to change.



## What Is the Trend?

- Incident management saved roadway users \$2 billion in CY 2022, an increase in savings from CY 2021 (\$1.9 billion) and handled 63,474 events, including incident responses; assistance with disabled vehicles; and traffic management operations for special and weather-related events.
- MDOT installed ITS devices as part of the US 1 Innovative Technology Corridor Project (12 closed-circuit television (CCTV) cameras, nine dynamic message signs (DMS) and 17 Dedicated Short-Range Communications/Cellular Vehicle-to-Everything (DSRC/CV2X) roadside units (RSUs)) (Devices will begin to become active in Fiscal Year 2024 after final testing and acceptance is complete).
- A Traffic Management Decision Support Tool was developed for Freeway Incident Traffic Management (FITM) Plan Deployment.
- As part of a research grant, MDOT designed an arterial-friendly local ramp metering control system.
- CHART's Eastern Shore Traffic Operations (ESTO) program was expanded.
- To further support Action Traffic Management (ATM) and statewide signal operations and facilitate interoffice coordination, Office of Transportation Mobility and Operations (OTMO) staffed its Traffic Signal Systems Operations (TSSO) section.

## What Are Future Strategies?

- SHA will continue evaluating the CHART patrol program to determine future improvements in reduction in roadway delays and user cost savings.
- SHA will complete traffic incident management timing plans for TSMO System 1, which covers ATM strategies along multiple routes, including I-70, US 40, US 29 and MD 99.
- Real-time signal timing adjustment will be expanded to support ESTO during summer months using Advanced Traffic Signal Performance Measures (ATSPM) and CENTRACS traffic responsive operations.
- SHA will continue to deploy field ITS assets (CCTV cameras, traffic detectors, etc.) to improve traffic monitoring and traveler information.
- MDOT began signal upgrades and deploying ATM strategies along US 50 between the Bay Bridge and Ocean City.

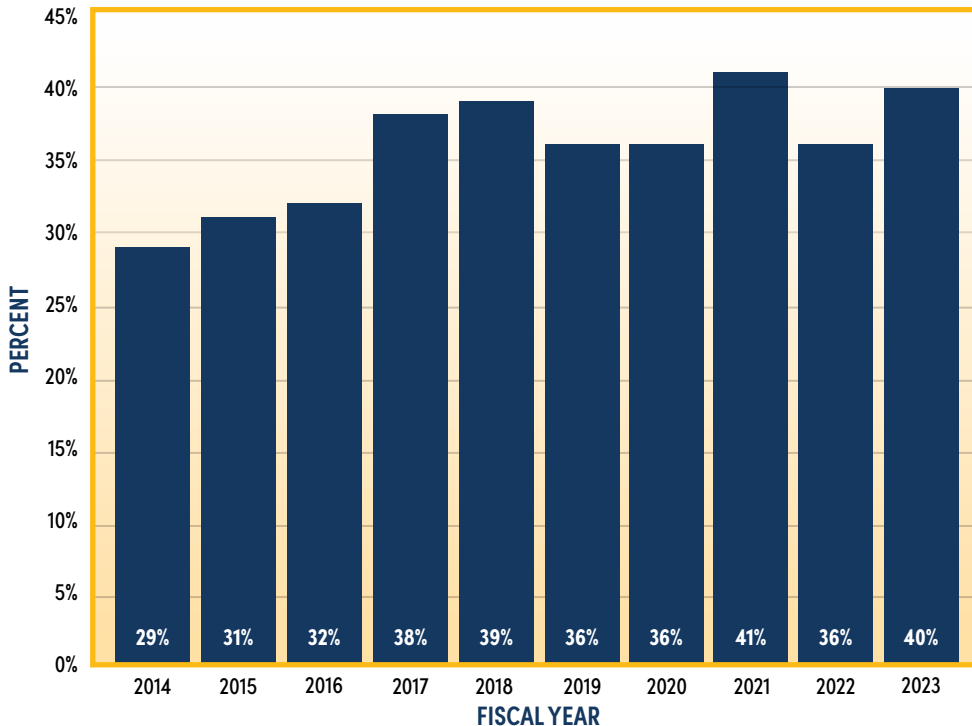


GOAL: DELIVER SYSTEM QUALITY: DELIVER A RELIABLE, HIGH-QUALITY, INTEGRATED TRANSPORTATION SYSTEM

# Objective: Accelerate project completion through improved project delivery

## PERCENT OF CTP PROGRAM THAT IS FUNDED WITH FEDERAL DOLLARS\*

This new performance measure calculates how well MDOT leverages state dollars by comparing how much of (what percentage of) the CTP is funded using federal dollars.



TARGET: 2030: Baseline in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

### What Is the Trend?

- In 2021, the new federal program, 2021 U.S. Infrastructure Investment and Jobs Act (IIJA), allotted more federal funds and discretionary grants for funding projects.
- In FY 2023, MDOT received \$812 million in highway formula funding and \$305.8 million in transit formula funding for MDOT projects.
- MDOT was awarded an additional \$83 million from federal discretionary grants in CY 2023. For example, through the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program, MDOT secured \$20 million to fund state of good repair investments at Mondawmin Transit Station. Additionally in December, MDTA received the state's first ever MEGA grant for \$80 million for the I-895 at Frankfort Avenue Interchange Improvement project.
- For FY 2023, the state received 40% of CTP funding from federal sources.
- MDOT will need to be strategic in seeking federal discretionary grants in order to maximize the limited state matching funds.

### What Are Future Strategies?

- MDOT developed numerous resources to support state and local partners in pursuing federal grants including a newsletter, updated MDOT grant webpages and the MDOT Federal Discretionary Grants Interactive Map Application. MDOT will continue to seek federal grants whenever appropriate and pursue opportunities for maximizing federal match.
- In November 2023, the Federal Railroad Administration (FRA) awarded \$16.4 billion for 25 passenger rail projects along the Northeast Corridor (NEC) from the Federal-State Partnership for Intercity Passenger Rail Program. Approximately \$7 billion in awards were made to projects in Maryland in CY 2023, including the Frederick Douglass Tunnel, the Susquehanna River Bridge and Penn Station in Baltimore City.

## PERCENT OF PROJECTS DELIVERED ON TIME ACROSS MDOT\*

This measure looks across all modal administrations to examine what percentage of projects are being delivered on time. MDOT is working on developing this performance measure and collecting data across all MDOT modes for next year.

TARGET: 2030: Baseline in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

## PERCENT OF PROJECTS DELIVERED ON-BUDGET ACROSS MDOT\*

This measure looks across all agencies and examine what percentage of projects are being delivered on budget. MDOT is working on developing this performance measure and collecting data across all departments of MDOT for next year.

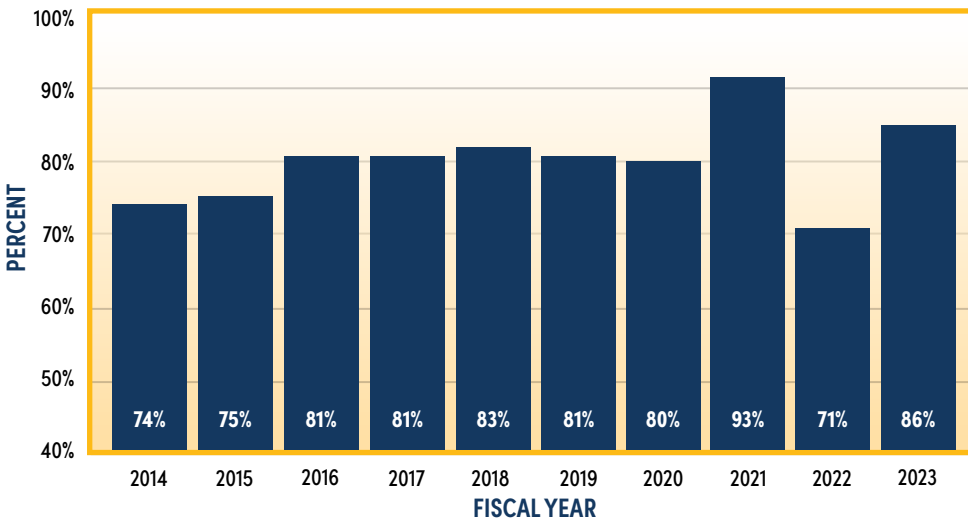
TARGET: 2030: Baseline in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

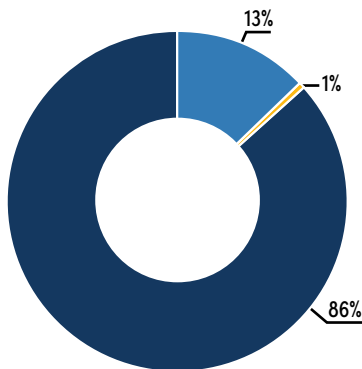
## PERCENT OF MDTA TOLLING TRANSACTIONS COLLECTED VIA E-ZPASS® VS. VIDEO TOLLS VS. PAY-BY-PLATE\*

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.

Percent of E-ZPass® Toll Transactions Only



Percent of Toll Transactions Collected in 2023



- Percent Of Total Toll Transactions Collected Via Pay-By-Plate
- Percent Of Total Toll Transactions Collected Via Video Toll
- Percent Of E-ZPass® Toll Transactions Only

TARGET: 2030: Baseline trends in first year to measure Video Tolls; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

### What Is the Trend?

- All toll transactions in Maryland are now collected electronically, and have been since 2021. The percentage of toll transactions collected by E-ZPass® has declined from 92.7% in 2021 to 70.1% in 2022, but it increased to 86.4% in 2023. The remaining 13% and 0.6% of toll transactions were collected via video toll and pay-by-plate, respectively.

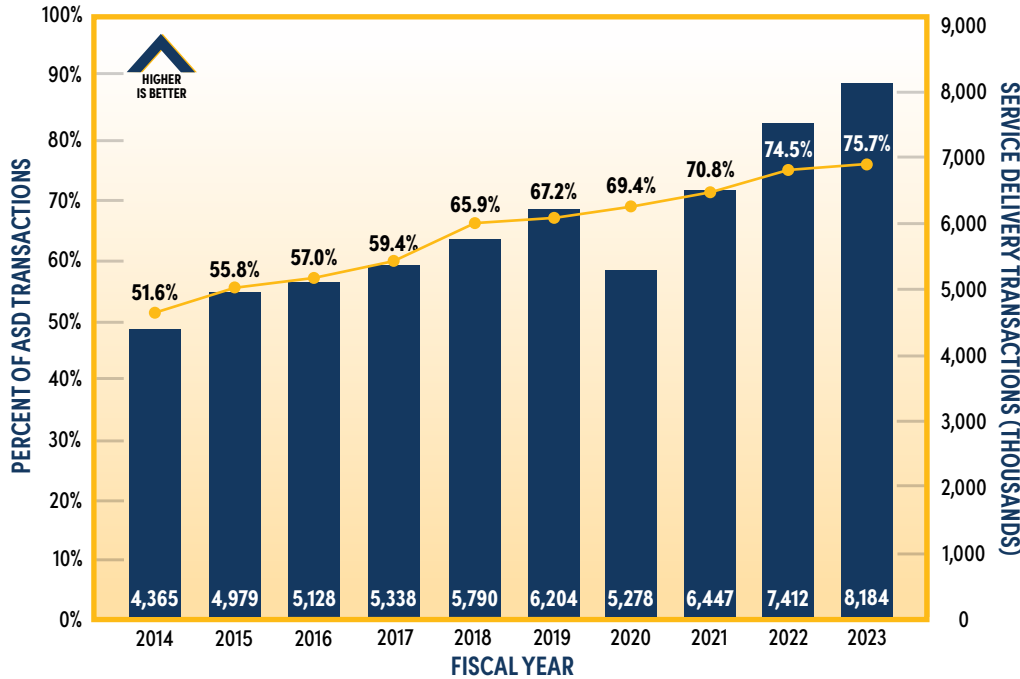
### What Are Future Strategies?

- MDTA is expanding the On-the-Go Program with retailers and providing online options for customers to convert their video tolls to the lower E-ZPass® rate upon opening an E-ZPass® account.
- MDTA is working on educating customers on the benefits of E-ZPass®, such as lower tolls and ease of use.
- The agency is partnering with the E-ZPass® Interagency Group, adding new members to the E-ZPass® network so that when out-of-state customers travel through Maryland, they are now E-ZPass® customers.

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



Alternative Service Delivery (ASD) allows MVA to operate more efficiently by providing reliable and convenient service delivery to customers without requiring in-person transactions. These services include web transactions, self-serve kiosks, mail-in options and others. MVA looks to increase ASD usage and options with the development of new information technology (IT) systems and customer behavior changes.



■ Number of Service Delivery Transactions  
 ● ASD Transactions As Percent of Total Transactions

TARGET: 2030: 85%; 2050: 90%

## What Is the Trend?

- The percentage of ASD transactions as percent of total transactions increased from 74.5% in 2022 to 75.7% in 2023.
- MVA consistently looks for opportunities to provide customers with the ability to process transactions when and where it is convenient for them. MVA completed a system modernization project, Customer Connect, that enhanced the way customers can do business in 2021.
- MyMVA, MVA’s online account system, helps customers manage their business with the MVA by providing a 360-degree view of their account.

## What Are Future Strategies?

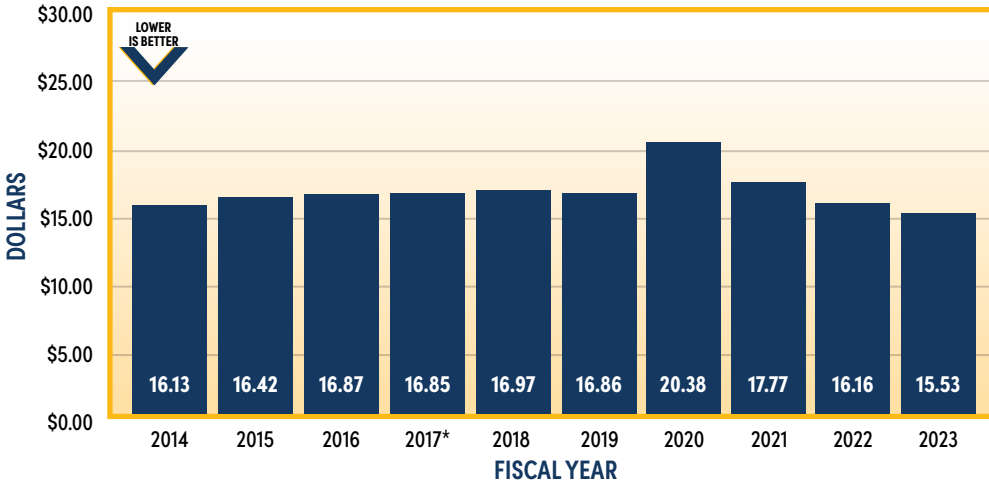
- MVA will promote the use of ASD, including myMVA, standalone kiosks, to expand ASD awareness among customers.



# MVA AVERAGE COST PER TRANSACTION



TARGET ACHIEVED



## What Is the Trend?

- The average cost per transaction decreased from \$16.16 to \$15.53 this fiscal year. As MVA branches continue to rebound from the COVID-19 pandemic disruptions and the full impact of the system modernization is realized, the number of total transactions have rebounded as well, lowering the cost per transaction.

TARGET: 2030: \$18.31, 2050: \$18.00

\*2017 data has been revised from previous report.

## What Are Future Strategies?

- The cost per transaction will always be a balance between the number of transactions and the MVA's operating expenditure. MVA continues to partner with other state agencies and look for ways to increase efficiencies, internally and for its customers. As MVA is better able to coordinate with our government partners, it can offer more services to customers.
- MVA will engage in cost-effective business practices through the employment of better technology and operational practices and to increase the use ASD methods.










# GOAL SERVE COMMUNITIES AND SUPPORT THE ECONOMY: EXPAND TRANSPORTATION OPTIONS TO ALLOW MARYLAND'S DIVERSE COMMUNITIES TO ACCESS OPPORTUNITIES AND TO SUPPORT THE MOVEMENT OF GOODS

Key outcome: The six objectives and 21 performance measures outlined here will serve communities and support the economy. By expanding transportation options to allow Maryland's diverse communities to access opportunities and to support the movement of goods, we will expand transit and active transportation use, and bolster the regional economy.




Maryland invests strategically in equitable multimodal transportation projects to improve connectivity, reliability, safety and access to the transportation network. This investment allows for greater access to opportunities for communities within Maryland. Maryland's multimodal options are growing with the construction of the Purple Line, a 16-mile light rail corridor, the relaunch of the Red Line, a 14-mile east-west transit line, the Commuter Choice Maryland program, which promotes alternatives to driving and the completion of long-range transportation plans and outreach to our partners. While transit ridership is still below pre-pandemic levels, MDOT and regional stakeholders have implemented innovative measures to improve the rider experience and entice customers back onto public transit. Increasing access to transit by offering more travel options, adapting services to customers' changing travel needs and educating customers about available commuter benefits are all helping Marylanders integrate their daily trip planning with available and expanded options.

## Performance Measures

OBJECTIVES	PERFORMANCE MEASURE	RATING
Enhance Marylanders' satisfaction with the transportation system and MDOT services	Overall Satisfaction With MDOT	N/A*
	Percentage of MVA Customers With a Wait Time Under 10 Minutes	 MAKING PROGRESS
Apply enhanced technologies to improve communication and relay real-time information	Percentage of Modal Administration Services That Provide Real-Time Information	N/A*
Prioritize the transportation needs of underserved and overburdened communities in project selection and scoping	Access to Transit (Within ½ Mile of a Transit Station/Stop) By People Who Live In Overburdened and Underserved Areas As Defined By the Climate Solutions Now Act (CSNA)	N/A*
	Relative Percentage of CTP Investment That Is In Overburdened and Underserved Communities	N/A*
Improve quality of life by providing active transportation and transit access to jobs and opportunities	Commute Mode Share	N/A*
	Multimodal Access to Essential Services/Destinations	N/A*
Increase transit use, active transportation and transit oriented development (TOD)	Annual Transit Ridership (Thousands)	 MAKING PROGRESS
	Total Maryland-Only WMATA Annual Ridership	 MAKING PROGRESS
	MTA Average Weekday Transit Ridership	 TARGET ACHIEVED
	Population Within ½ Mile of a Transit Station/Stop	N/A*
	Number of Jobs Within ½ Mile of a Transit Station/Stop	N/A*
	Fixed-Route Ridership By Seniors And People With Disabilities	N/A*
	Annual Revenue Vehicle Miles of MTA Service Provided	 MAKING PROGRESS

\*Target under development

## Performance Measures

OBJECTIVES	PERFORMANCE MEASURE	RATING
Improve the efficiency and competitiveness of the Port of Baltimore and BWI Thurgood Marshall Airport	Port of Baltimore Foreign Cargo Tonnage and MPA General Cargo Tonnage	N/A*
	Percentage of MPA Operating Budget Recovered By Revenues	N/A*
	BWI Marshall Airport Total Annual Passengers	 TARGET ACHIEVED
	Comparative Airline Cost Per Enplaned Passenger (CPE)	 TARGET ACHIEVED
	Freight Originating and Terminating In Maryland By Mode— Total Tonnage and Total Value	N/A*
	Number of Nonstop Airline Markets Served	 ON TARGET

\*Target under development

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; Maryland’s freight intensive network supports and connects freight movements at a regional and a national scale. This large rail network also supports passenger rail trips both within and out of Maryland on MARC, Amtrak and other transit systems.

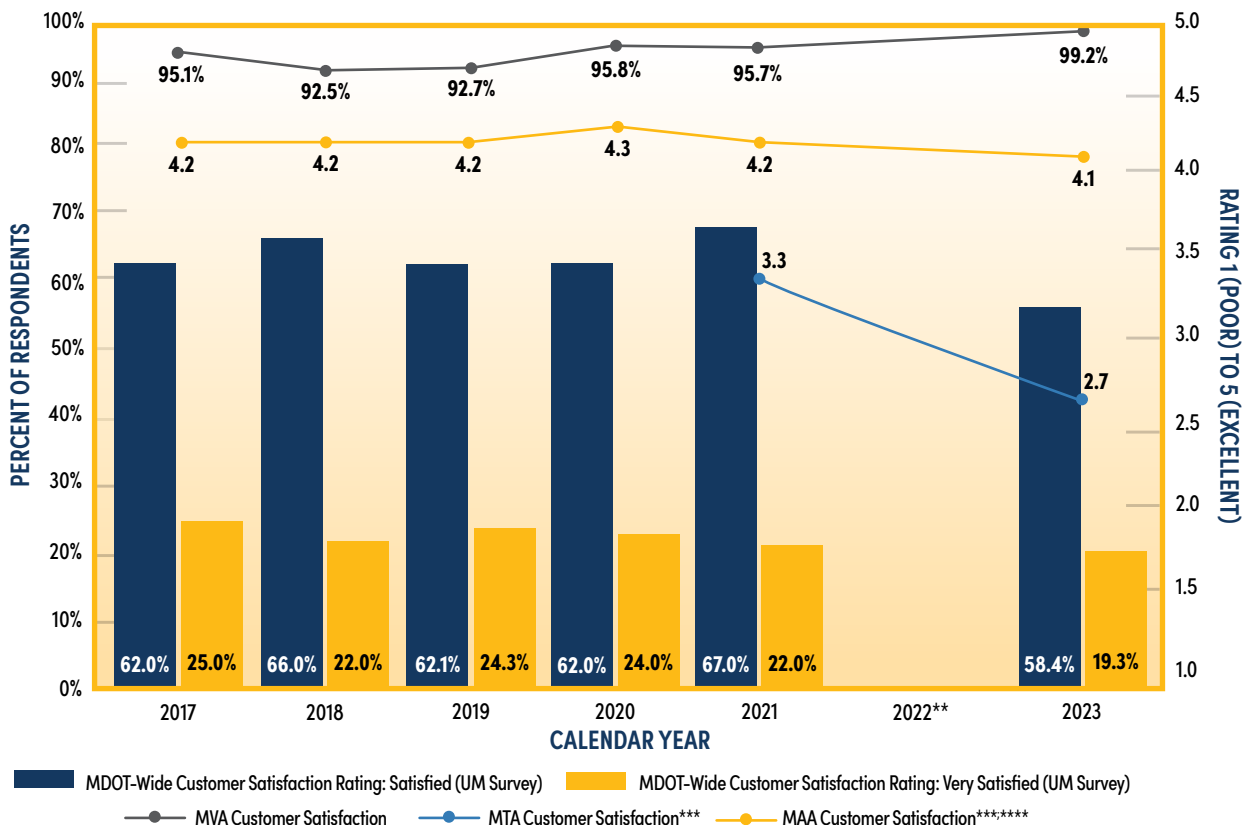


GOAL: SERVE COMMUNITIES AND SUPPORT THE ECONOMY; EXPAND TRANSPORTATION OPTIONS TO ALLOW MARYLAND'S DIVERSE COMMUNITIES TO ACCESS OPPORTUNITIES AND TO SUPPORT THE MOVEMENT OF GOODS

# Objective: Enhance Marylanders' satisfaction with the transportation system and MDOT services

## OVERALL SATISFACTION WITH MDOT\*

Satisfaction surveys provide direct feedback from customers to help better understand MDOT's success in providing exceptional customer service. With these surveys, MDOT and its modal administrations can identify their successes and weaknesses and develop new investment prioritizations to maintain and grow their customer bases and improve customer satisfaction. Overall satisfaction with MDOT is measured via a University of Maryland survey, which was updated in 2023. MAA, MVA and MTA conduct their own customer satisfaction surveys. Including MAA, MVA and MTA survey results is a new addition to this performance measure.



TARGET: 2030: Baseline and trend first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

\*\*2022 was a gap year for collecting this MDOT survey data, so 2022 is not included in this chart.

\*\*\*MAA and MTA data is on a scale from 1 (poor) to 5 (excellent).

\*\*\*\*MAA data are Q4 results with the exception of 2022 (Q3) and 2023 (Q2).

### What Is the Trend?

- While overall satisfaction with MDOT has been relatively consistent since 2017, 2023 experienced the lowest satisfaction ratings with 58% of respondents reporting "satisfied" and 19% of respondents reporting "very satisfied."
- The percentage of MVA Branch Office Customers rated service as "Good" or "Very Good" has generally increased since 2015, with a record high rating of 99.2% in 2023.
- MTA's customer satisfaction rating, which is on an increasing scale from 1 to 5, dropped from 3.3 in 2019 to 2.7 in 2023.
- The upward spike seen in MAA customer satisfaction in 2020 during the COVID-19 pandemic reflects the dramatic drop in passenger traffic. Those who did fly did so in relative comfort due to fewer people in the terminal using facilities.

### What Are Future Strategies?

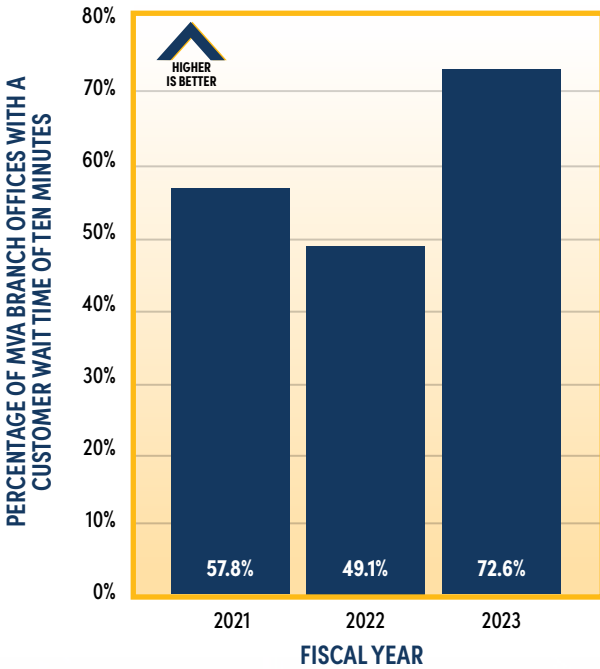
- MVA increased availability to book same-day appointments online and decreased the lead time to book appointments to one hour. In addition, MVA launched ContactMVA to enhance communication with customers through the myMVA online portal.
- MTA is focused on enhancing the customer experience by improving real-time vehicle predictions, upgrading signals and signage around stations, and launching a Customer Experience Office.
- Currently, MAA has several passenger amenity and efficiency projects underway including significant restroom renovations, public Wi-Fi improvements, baggage system replacements and expansions, hold room and circulation improvements, parking guidance and wayfinding system improvements and more.



# PERCENTAGE OF MVA CUSTOMERS WITH A WAIT TIME UNDER 10 MINUTES\*



MVA aims to have all customers experience a wait time under ten minutes. This serves as a good indicator for the quality and efficiency of service delivery to customers. This performance measure was updated in this AR from previously reporting all wait times to now focus on the percentage of customers waiting ten minutes or less for their service.



TARGET: 2030: 90%; 2050: 100%  
 \*This performance measure is new to the AR.

## What Is the Trend?

- The percentage of MVA customers with a wait time under ten minutes decreased from 2021 to 2022 but jumped to the highest percentage in 2023 at 72.6%. In FY 2023, nearly three out of four customers experienced a wait time of ten minutes or less.
- As of September, 2023, up to 76% of MVA business is now done outside of physical in-office interactions, largely due to the success of the myMVA online system where Marylanders can do tasks, such as schedule appointments, renew a license, renew registration and find information of vehicle emissions testing.

## What Are Future Strategies?

- MVA is focused on providing premier customer service by ensuring that all customers are having a satisfactory experience, regardless of office and service type. They have adjusted their approach to look at the percentage of customers with lower wait times to ensure the majority of customers are receiving quick, quality service and address any outlying issues as quickly as possible.
- To improve performance, MVA has shifted its mindset to focus on its customer experience and works to engage with customers to improve their overall experience. While MVA has dramatically reduced the average wait time in MVA branch offices across the state, on October 1, 2023, new laws were enacted to boost efficiency for commercial vehicle drivers.



GOAL: SERVE COMMUNITIES AND SUPPORT THE ECONOMY; EXPAND TRANSPORTATION OPTIONS TO ALLOW MARYLAND'S DIVERSE COMMUNITIES TO ACCESS OPPORTUNITIES AND TO SUPPORT THE MOVEMENT OF GOODS

# Objective: Apply enhanced technologies to improve communication and relay real-time information

## PERCENTAGE OF MODAL ADMINISTRATION SERVICES THAT PROVIDE REAL-TIME INFORMATION\*

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. This new performance measure replaced the previous measure, "MDOT customer satisfaction with the accuracy of real-time information systems provided." This update provides a more accurate look at what information, by mode, customers can receive in real-time and where improvements can be made.

MODES	REAL-TIME SERVICES
MAA	<p>Data provided on BWI Marshall Airport’s public website and monitors throughout the terminal.</p> <ul style="list-style-type: none"> <li>● real time flight status</li> <li>● parking availability</li> <li>● security wait time</li> </ul> <p>Shuttle bus wait times also displayed on the terminal curbside. Investigations into BWI app based info and directed/push notifications are ongoing.</p>
MDTA	<p>Partners with SHA:</p> <ul style="list-style-type: none"> <li>● Coordinated Highways Action Response Team (CHART) website: Dynamic Message Signs (DMS) to relay information to travelers in real time on our roadways such as crashes, tunnel closures/construction work and lane closures.</li> </ul>
MPA	N/A
MTA	<p>MTA is doing a lot to increase real-time data to customers, including:</p> <ul style="list-style-type: none"> <li>● MTA has real-time vehicle arrival tracking on all modes</li> <li>● In 2023, MTA launched real-time tracking for Mobility paratransit riders in the new app</li> <li>● The FastForward program includes funding for additional real-time signs throughout the core bus system</li> </ul>
MVA	<ul style="list-style-type: none"> <li>● MVA office branch wait-times are provided in real-time based on tickets but wait-times are not available online. However, average monthly wait-times are available on the Open Data Portal and MVA website. MVA’s goal is to have a real-time, wait-time dashboard through Power BI available to the public within the next year, pending a licensing update.</li> <li>● Alternative Service Delivery (ASD) encompasses transactions performed outside of the branch office, including myMVA. The rate of ASD is not available in real-time. However, a report is published monthly with the average rate of ASD.</li> <li>● MyMVA provides services which are available in real-time to all customers.</li> </ul>
SHA	<ul style="list-style-type: none"> <li>● CHART website: incidents, active work zones, DMS messages, travel times (via DMS), snow emergency plan activations, road-weather data and many other items.</li> <li>● STORM website: snowplow locations during winter</li> </ul>

TARGET: 2030: Baseline trend in first year; 2050: Target being developed for next year’s report

\*This performance measure is new to the AR.



# Objective: Prioritize the transportation needs of underserved and overburdened communities in project selection and scoping

## ACCESS TO TRANSIT (WITHIN 1/2 MILE OF A TRANSIT STATION/STOP) BY PEOPLE WHO LIVE IN OVERBURDENED AND UNDERSERVED AREAS AS DEFINED BY THE CLIMATE SOLUTIONS NOW ACT (CSNA)\*

This new performance measure was included due to its alignment with the guiding principles of equity and experience outlined in the long-range plan, as well as its direct relationship to this new goal and objective. This analysis took a 1/2-mile buffer around bus and rail stations and stops that touched or were within the census tracts designated overburdened and underserved by the CSNA. The population of these census tracts with any transit buffer overlap were then totaled.

	2023
Total Population of overburdened and underserved census tracts that have all or a portion of their boundary within the 1/2 mile buffer zone for the transit station/stops	1,342,417

TARGET: Baseline trend in first year

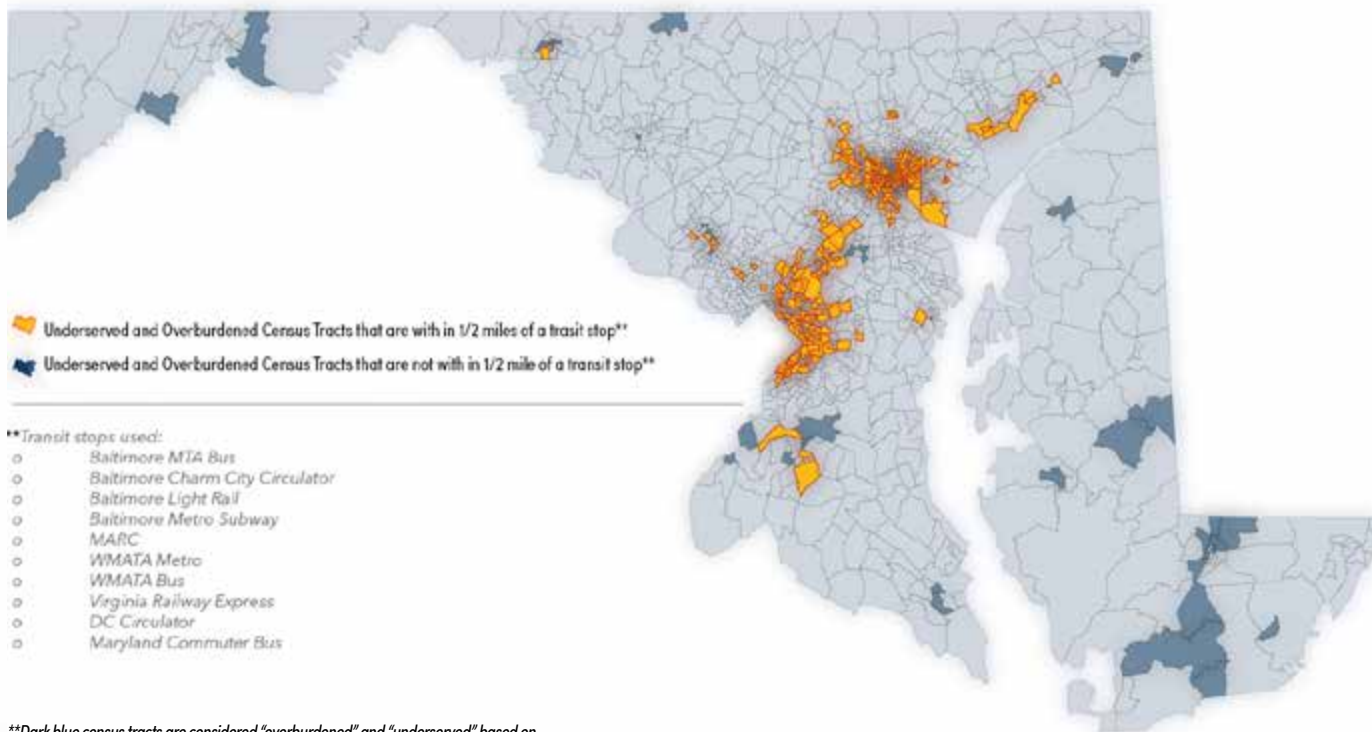
\*This performance measure is new to the AR.

### What Is the Trend?

- No trend is available as this is the first year that MDOT is measuring and tracking transit station/stop access in overburdened and underserved communities. In FY 2023, over 1.3 million people fall into a census tract that is designated overburdened and underserved.

### What Are Future Strategies?

- MDOT's new 2050 long-range transportation plan, the Playbook, includes equity as a guiding principle to ensure no one is left behind. It emphasizes the importance of access to affordable and accessible transit for overburdened and underserved communities, particularly for individuals who rely on it as their primary means of travel.
- MDOT's active, long-term projects, such as the Purple and Red lines, will expand transit access in densely populated census tracts, many of which are designated overburdened and underserved.



\*\*Dark blue census tracts are considered "overburdened" and "underserved" based on CSNA definitions and orange CTP projects are within those census tracts.



# RELATIVE PERCENTAGE OF CTP INVESTMENT THAT IS IN OVERBURDENED AND UNDERSERVED COMMUNITIES\*

This measure utilizes the CSNA's definitions of "overburdened and underserved communities." Overburdened communities are defined as any census tract for which three or more of 21 environmental health indicators are above the 75<sup>th</sup> percentile statewide. Underserved communities are defined as any census tract where the most recent census survey shows:

- At least 25% of the residents qualify as low-income;
- At least 50% of the residents are non-white; or
- At least 15% of the residents have limited English proficiency.

23.3%, or 341 of the 1,465 census tracts in Maryland fit the definition of overburdened and underserved.

## What Is the Trend?

- No trend is available as this is the first year that MDOT is measuring and tracking CTP investment in overburdened and underserved communities. Almost one-third of FY 2023-FY 2028 projects fall into these census tracts, or 769 of 2,450 CTP projects.

## What Are Future Strategies?

- MDOT's new 2050 long-range transportation plan, the Playbook, includes equity as a guiding principle to ensure that no one is left behind. One of the listed strategies is to "identify opportunities to prioritize underserved and overburdened communities in project selection, scoping and design." A new prioritization process for the CTP that focuses on equitable investment is currently under consideration.

FISCAL YEAR	2023
Relative percentage of CTP investment that is in overburdened and underserved communities	31.4%

TARGET: Baseline trend in first year

\*This performance measure is new to the AR.

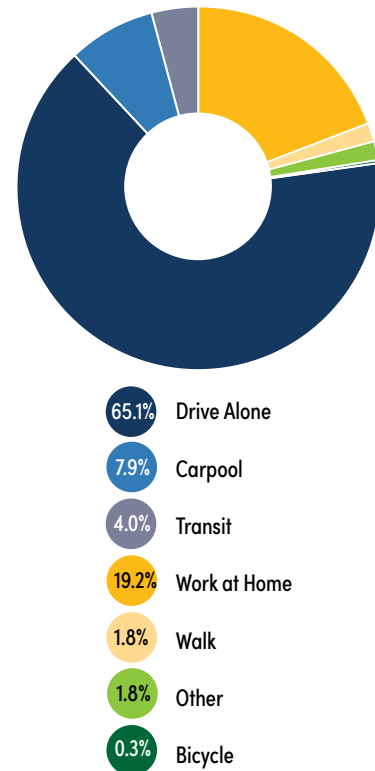


# Objective: Improve quality of life by providing active transportation and transit access to jobs and opportunities

## COMMUTE MODE SHARE\*

Transportation Demand Management (TDM) strategies and policies are an impactful and cost-effective way to offset vehicle congestion and reduce Vehicle Miles Traveled (VMT) by promoting alternatives to driving alone such as taking transit, carpooling, vanpooling, walking, biking, teleworking and taking advantage of 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. Since 2020, Maryland has seen a significant shift in commuting patterns towards more telework; this shift was largely in response to the COVID-19 pandemic, but it is anticipated that telework will remain a viable alternative option, increasing its share among commute modes. MDOT is continuing to meet travel demand and respond to changing travel patterns by connecting Marylanders to transportation options during off-peak hours, as well as supporting Maryland employers' efforts to implement commuter benefits through the Employer Partner Program and expansion of the Maryland Commuter Tax Credit. MDOT also promotes the use of the incenTrip mobile application (rebranding anticipated to launch in 2024) to encourage and sustain on-single occupancy vehicle (SOV) mode choices during commute hours and expand options within the app to incentivize commuters statewide. Commuter Choice Maryland provides resources, tips and tools to implement TDM strategies in 2023. Visit [www.commuterchoicemaryland.com](http://www.commuterchoicemaryland.com) for more information.

CY 2022\*\* Commute Mode Share



Almost all modes have decreased due to the increase in working from home since the COVID-19 pandemic. Drive alone and transit have decreased the most.

MODE	2014	2015	2016	2017	2018	2019	2020	2021	2022**
Drive Alone	73.6%	73.7%	73.7%	73.8%	73.9%	73.9%	72.1%	69.8%	65.1%
Carpool	9.8%	9.4%	9.3%	9.1%	9.1%	8.9%	8.6%	8.2%	7.9%
Transit	8.9%	9.0%	8.9%	8.8%	8.6%	8.4%	7.4%	6.4%	4.0%
Work at Home	4.2%	4.2%	4.4%	4.5%	4.7%	5.0%	8.1%	11.9%	19.2%
Walk	2.3%	2.4%	2.4%	2.4%	2.3%	2.3%	2.1%	2.0%	1.8%
Other***	0.9%	1.0%	1.0%	1.0%	1.2%	1.2%	1.3%	1.5%	1.8%
Bicycle	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

\*Several historic data points have been updated, including "Carpool" in 2015 and 2017 and "Transit" and "Work at Home" in 2017.

\*\*2022 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.

### What Is the Trend?

- Since the COVID-19 pandemic upended typical commute and travel patterns, this commute mode share data is providing insight into what changes are likely to continue and which are changing. Work at home was at a high of 11.9% in 2021 and saw an increase in 2022 to 19.2%, as per ACS 1-year estimates. A significant portion of Marylanders working from home is likely to continue. The drop in commuters driving alone to work since the COVID-19 pandemic is largely due to the trend to work at home. Transit mode share saw a decline from 7.4% in 2020 to 6.4% in 2021 due to the COVID-19 pandemic. Based on ACS 1-year estimates, transit mode share further dropped to 4.0% in 2022.

### What Are Future Strategies?

- MDOT supports TDM through its Commuter Choice Maryland program and partnerships with the Metropolitan Washington Council of Governments (MWCOCG) and others. Commuter Choice Maryland collaborates with other TDM program managers to hit the target of 500 employers statewide in the free Employer Partner Program.
- MTA improves operations to make transit a more attractive option to commuters, including access to mobile transit ticketing through CharmPass, more options for flexible commuting schedules with CharmFlex, and adding real-time train arrival information for its Light Rail trains.

## MULTIMODAL ACCESS TO ESSENTIAL SERVICES/DESTINATIONS\*

Access to essential services and destinations is vital to a successful transportation system. This new performance measure focuses on transit access and provides the percentage of services and destinations that are served by at least one of MTA's modes.

FISCAL YEAR	2023
Multimodal access to essential services/destinations	6.3%

TARGET: 2030: Baseline trend in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

### What Is the Trend?

- While this is a new measure with no historic data, in 2023, 6.3% of services and destinations are served by at least one of MTA's modes.

### What Are Future Strategies?

- MTA routinely surveys rider feedback through origin destination studies, as well as collaborates with business and community groups to determine how to best plan service around where riders need to go.
- MTA is working to improve multimodal access to destinations by expanding services that will facilitate transfers and strengthen transit accessibility in already-served areas. The Red Line study and the new QuickLink 40 bus service are working towards this goal, as well as continued development of the Purple Line.



## Objective: Increase transit use, active transportation and transit oriented development (TOD)

### MTA AND WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY (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 measuring the productivity of their service. MTA provides services across the Greater Baltimore area with commuter bus and commuter rail service providing regional connections across the state. 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, 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 2023, unlinked passenger trips (UPT)\* across almost all MTA services, including direct-operated services, contracted services and Locally Operated Transit System (LOTS) increased as compared to 2022, with the exceptions of taxi access and the Baltimore Metrorail system. Maryland-only WMATA ridership also increased overall, with the largest increase in Metrorail ridership. WMATA and 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 the last year, WMATA increased rail service levels by 50% across the system and opened seven new rail stations.

In 2023, WMATA and MTA worked on several customer experience improvement projects. WMATA updated Metro signage to make wayfinding easier and continued work on the Better Bus Network Redesign, which will develop a new regional bus network that better serves customer needs and regional goals by being fast, frequent, reliable and easier to understand. MTA rolled out real time information on all modes, implemented FastForward program to speed up travel time and improve accessibility, and is aggressively hiring operators to improve service delivery.

\*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.



# ANNUAL TRANSIT RIDERSHIP (THOUSANDS)



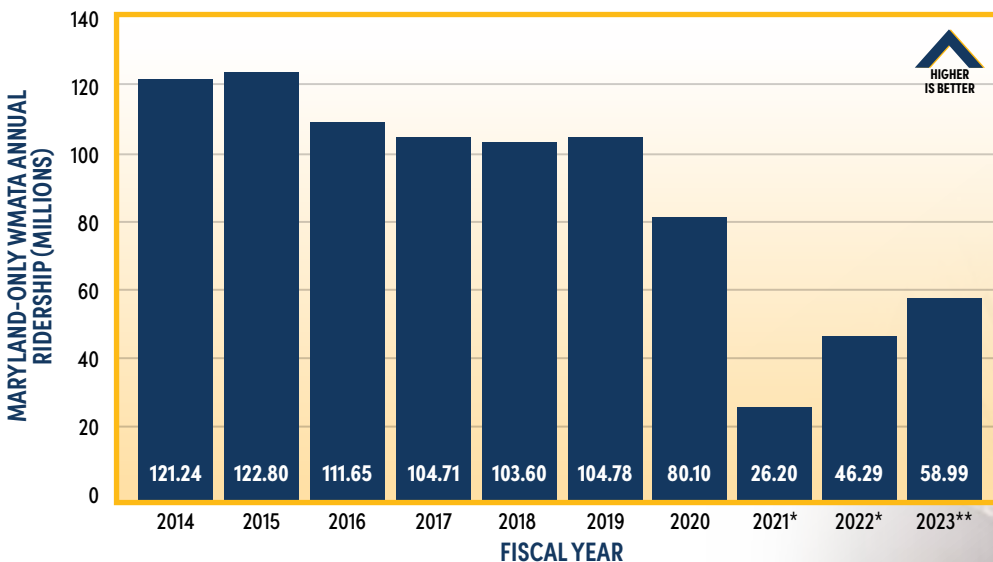
FISCAL YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023**
<b>MTA Direct-Operated Services (Thousands)</b>										
Local Bus	75,780	78,697	75,619	69,587	63,730	63,989	55,439	35,370	42,081*	46,584
Baltimore Metro	14,632	13,901	12,222	10,960	8,738	7,275	5,864	1,615*	1,856*	1,956
Light Rail	8,106	7,657	7,431	7,414	7,401	6,966	4,682	2,458*	2,947*	3,434
<b>Contracted Services and LOTS, including Paratransit Ridership (Thousands)</b>										
MARC	9,168	9,246	8,962	9,185	9,322	9,191	6,677	880*	987*	3,376
Contracted Commuter Bus	4,017	4,034	3,928	3,866	3,841	3,623	2,619	434*	479*	1,189
Mobility Paratransit and Taxi Access	2,289	2,495	2,555	2,745	2,941	2,974	2,492	1,568*	1,759*	2,407
Locally Operated Transit System (LOTS)	42,500	39,441	38,476	39,818	41,096	32,866	25,412	14,977	21,305	24,501
<b>Maryland-Only WMATA (Thousands)</b>										
Maryland-Only WMATA	121,243	122,800	111,648	104,707	103,598	104,781	80,096	26,202*	46,290*	58,987

TARGET: Overall increase

\*Data have been revised from previous report.

\*\*2023 data is preliminary and subject to change.

# MARYLAND-ONLY WMATA ANNUAL RIDERSHIP (MILLIONS)

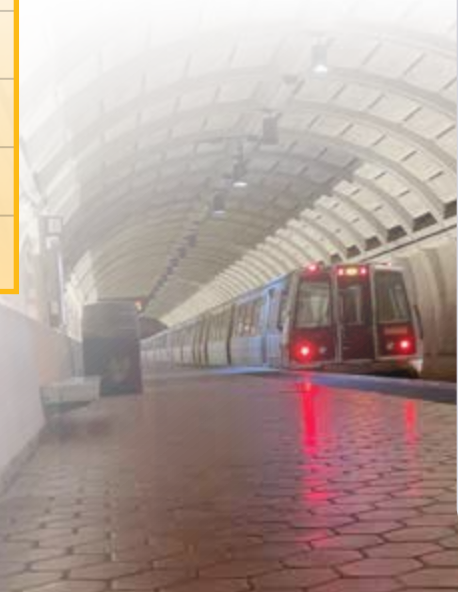


TARGET: Overall increase

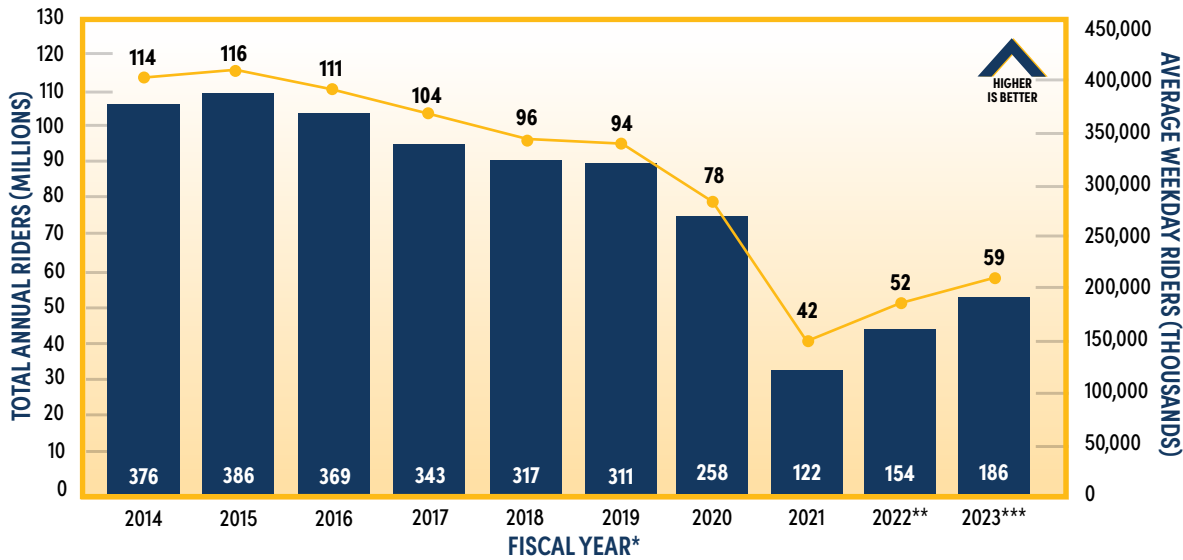
\*2021 and 2022 data have been revised from previous report.

\*\*2023 data is preliminary and subject to change.

GOAL: SERVE COMMUNITIES AND SUPPORT THE ECONOMY; EXPAND TRANSPORTATION OPTIONS TO ALLOW MARYLAND'S DIVERSE COMMUNITIES TO ACCESS OPPORTUNITIES AND TO SUPPORT THE MOVEMENT OF GOODS



# MTA AVERAGE WEEKDAY TRANSIT RIDERSHIP



■ Average Weekday Transit Ridership  
—●— Total Annual Transit Ridership

**TARGET:** Overall increase

*\*To maintain the integrity of historical comparisons of bus ridership, 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.*

*\*\*2022 data have been revised from previous report.*

*\*\*\* 2023 data are preliminary and subject to change.*

## What Is the Trend?

- MTA average weekday transit ridership has consistently increased between 2021 and 2023 after the sharp decline due to the COVID-19 pandemic. MTA predicts increases in ridership across all transit modes as pandemic-related impacts continue to abate. Increased ridership in the future will equilibrate this measure to be more consistent with pre-pandemic trends.

## What Are Future Strategies?

- MTA is looking into the strategic addition of new routes, such as the QuickLink 40, to boost service usage among riders. MTA continues to interface with its riders to better understand how they can develop service around their needs and demands.
- In June, Governor Moore announced the re-launch of the Red Line project, a proposed premium transit corridor between Woodlawn, downtown Baltimore and Bayview. Planning activities are ongoing to select an alternative to advance to detailed environmental study, and ultimately apply to enter the FTA Capital Investments Grants program in 2024.
- MTA's redevelopment of Baltimore's Penn Station, funded in part by the \$6 million federal grant from the USDOT 2022 Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program, will expand access to the local disadvantaged community, more than 20% of which lack access to a car.
- The Purple Line, the 16-mile light rail line from New Carrollton to Bethesda, is under development and expected to open in 2027.





## POPULATION WITHIN 1/2 MILE OF A TRANSIT STATION/STOP\*

## NUMBER OF JOBS WITHIN 1/2 MILE OF A TRANSIT STATION/STOP\*

These two new performance measures, and the tracking of them, is vital to understand the reach that the current transit system has among MDOT's customers. The more people and jobs within walking distance to transit, which is determined to be 1/2 mile or less, reflects greater access to destinations and opportunities, particularly for those that do not own personal vehicles. This aligns with this new goal, objective, and guiding principles of equity and experience.

FISCAL YEAR	POPULATION WITHIN 1/2 MILE OF A TRANSIT STATION/STOP	JOBS WITHIN 1/2 MILE OF A TRANSIT STATION/STOP
2023	1,503,733	1,050,299

TARGET: 2030: Baseline trend in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.



### What Is the Trend?

- No trend is available as this is the first year that MDOT is measuring and tracking population and number of jobs within 1/2 mile of a transit station/stop. In 2023, 24% of the state population of 6.16 million is within 1/2 mile of a transit stop.

### What Are Future Strategies?

- MTA works with business organizations throughout their service area to provide transit access where commuter demand is high. MTA also conducts community outreach through rider surveys to determine where to place services.
- Implementing TOD is a key strategy to increasing accessibility to transit, housing, work and other activities. An example of this is Metro Centre at Owings Mills, a TOD under development that has approximately 4,100 commuters board the Owings Mills Metro Stop each workday. Additionally, MDOT entered into an exclusive negotiating privilege agreement with Wabash Development Partners to develop the 25-acres of unimproved land and surface parking lots surrounding Reisterstown Plaza Metro into a TOD.
- MTA received \$20 million for the Mondawmin RAISE Transit Hub Project to support upgrades to the station's transit infrastructure and improve pedestrian accessibility in the surrounding area.

## FIXED-ROUTE RIDERSHIP BY SENIORS AND PEOPLE WITH DISABILITIES\*

This new performance measure was created in light of the 2023 Equity in the Transportation Sector law, as well as its alignment with this new goal, objective, and the guiding principles of equity and experience. MTA calculated this measure by utilizing their reduced fare passes for those with Mobility certification usage and calculate the proportion and extrapolate to ridership, thereby creating this ridership estimate. Additionally, disability fare is combined with senior fare, so these measures are combined. This measure includes both directly operated services as well as contracted services.

YEAR	ESTIMATED ANNUAL RIDERSHIP OF SENIORS AND PEOPLE WITH DISABILITIES (MTA)
2023	21,957,393

TARGET: 2030: Baseline trend in first year; 2050: Target being developed for next year's report

\*This performance measure is new to the AR.

### What Is the Trend?

- This is the first time that this performance measure is in this AR and has been tracked. However, medically at-risk groups like those with disabilities and the seniors were less likely to ride transit during FY 2020 and FY 2021 during the height of the pandemic. In FY 2022 and FY 2023, as pandemic concerns abated, those groups have begun riding again in higher volumes. In FY 2023, there were an estimated 22 million trips taken by seniors and people with disabilities on MTA's transportation system.

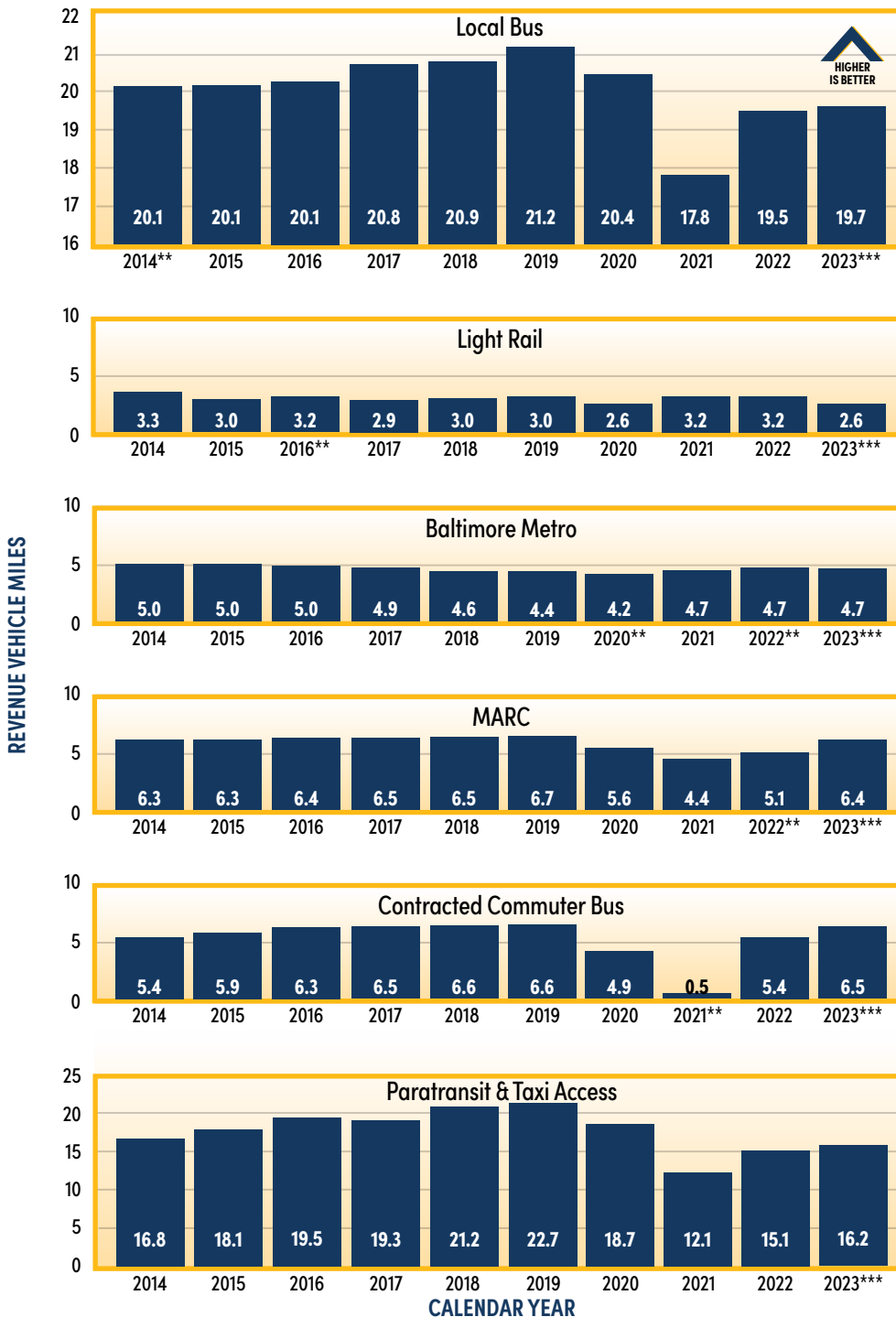
### What Are Future Strategies?

- MTA named its first Diversity, Equity and Inclusion (DEI) Director in May 2023, who will focus on developing policies, programs and procedures to reach overburdened and underserved communities that rely on transit services, many of whom are seniors and people with disabilities. All of MTA's planned expansion of the transit system, including implementation of the Red and Purple Lines and the QuickLink 40, and a focus on providing better connections to housing, employment centers and shopping through TOD policies, will benefit seniors and people with disabilities that choose to ride or rely on transit.

# ANNUAL REVENUE VEHICLE MILES OF MTA SERVICE PROVIDED\*



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



TARGET: Overall increase

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

\*\*Data have been revised from previous report.

\*\*\*2023 data are preliminary and subject to change.

## What Is the Trend?

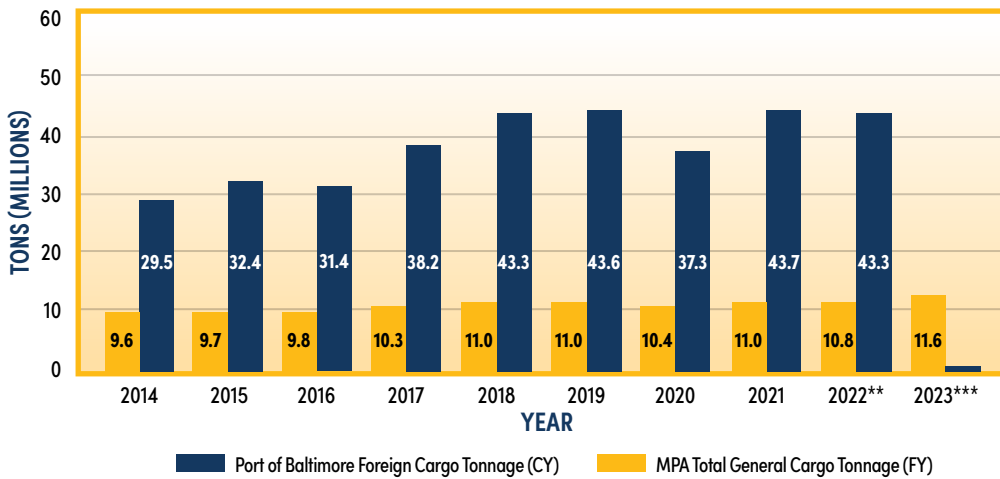
- The annual revenue vehicle miles of MTA service is now operating near pre-pandemic levels across all transit modes and have been increasing overall since 2021. The exceptions are paratransit and taxi access, which have not yet reached pre-pandemic levels, and light rail, which was higher than pre-pandemic levels in 2021 and 2022 but saw a decrease in 2023.

## What Are Future Strategies?

- MTA plans to continue improving service by reducing service cuts and implementing new routes, such as the QuickLink 40, which will provide limited stop bus service to provide streamlined east-west transit access.
- MTA is also moving forward on planning for the Red Line and completing construction of the Purple Line light rail project. New project leadership teams were announced in September 2023 to focus these projects towards implementation.

# Objective: Improve the efficiency and competitiveness of the Port of Baltimore and BWI Marshall Airport

## PORT OF BALTIMORE FOREIGN CARGO TONNAGE AND MPA GENERAL CARGO TONNAGE\*



TARGET: None

\*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, 2023 data cannot be reported until early 2024.

\*\*2022 data have been revised from previous report.

\*\*\*(2023) 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 2023 is not yet available; fiscal data for 2023 is an estimate.

### What Are Future Strategies?

- MPA will continue to market both the state-owned marine terminals and the privately held marine terminals that make up the Port of Baltimore to cargo owners, ocean carriers, freight forwarders and others with ocean freight interests.
- MPA also will continue to work with the U.S. Army Corp of Engineers to make sure that the shipping channels leading to the Port of Baltimore are maintained at adequate dimensions to ensure that ocean carriers can easily access the Port of Baltimore.
- MPA continues to seek federal grant funding, such as the Port Infrastructure Development Program (PIDP), which support efforts to improve the safety, efficiency or reliability of the movement of goods into, out of, around or within a port.

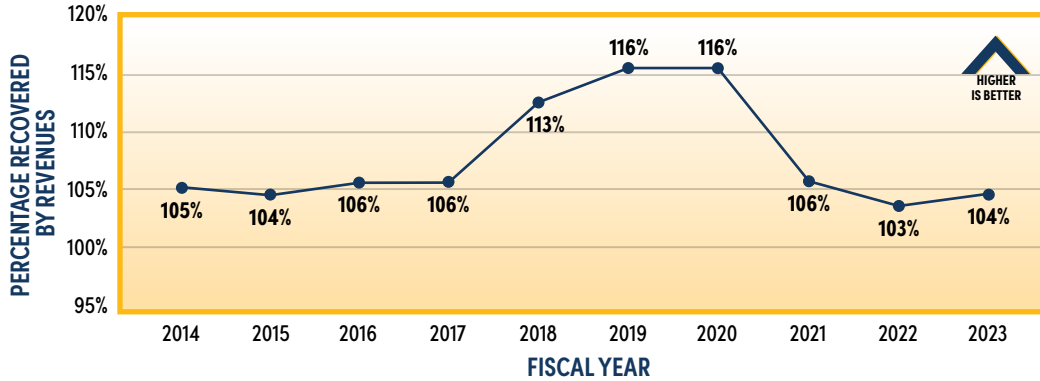
### What Is the Trend?

- Maryland's Port of Baltimore had another year of high performance in 2022 handling a total of 43.3 million tons of foreign cargo. The value of this foreign cargo reached a new record high, totaling \$74.3 billion.
- Bulk commodity shipments increased up to 69% of the Port's total international cargo. Export coal continues to be the largest bulk commodity through the Port.
- Maryland's Port of Baltimore is ranked as the 12<sup>th</sup> largest port in the U.S. in terms of foreign cargo tonnage and 10<sup>th</sup> largest in terms of dollar value.
- In 2022, MPA handled a record 11.4 million tons of general cargo at the state-owned marine terminals.
- The Port handled a total of 779,108 twenty-foot equivalent units (TEUs) of containers and over 750,200 auto units.



## PERCENTAGE OF MPA OPERATING BUDGET RECOVERED BY REVENUES\*

This new performance measure was already reported in the Managing for Results (MFR) report and aligned with similar measure for BWI Marshall Airport. Most of MPA's operating expenses are recovered by revenues generated, and this measure reflects activity at the MPA terminals. This measure is calculated by dividing operating revenues by operating expenses and exclusions. Revenues are derived from activities such as dockage, wharfage, crane rental, acreage/shed/office space leases, cruise business and more.



TARGET: None

\*This performance measure is new to the AR.

### What Is the Trend?

- In 2022, MPA was able to recover 103% of operating expenses through revenues it receives through the use of its terminals. Several commodities including roll on/roll off equipment and Forest Products showed large improvements over that past fiscal year that helped generate additional revenue.

### What Are Future Strategies?

- MPA pursues a strategy of leasing its facilities to customers on a long-term basis to mitigate against the fluctuations of cargo swings. By doing so, the revenue received from leases will remain constant and help MPA cover the costs of its operating expenses.

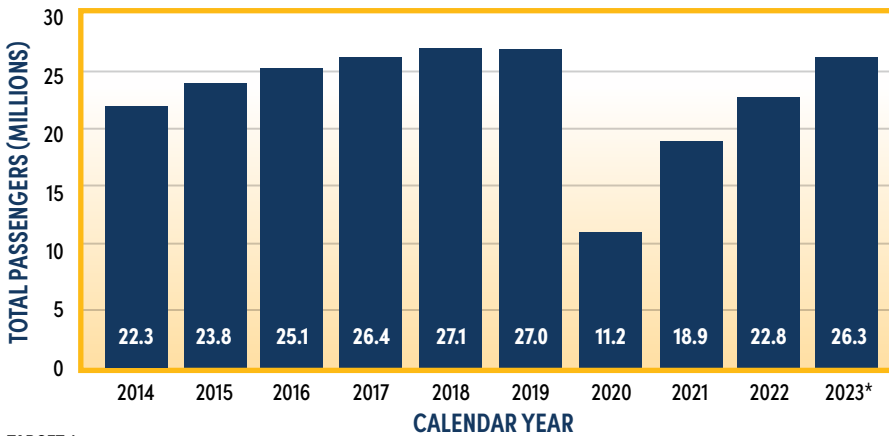
## THE PORT OF BALTIMORE

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 achieved a new cargo volume record handling 11.6 million tons of general cargo in FY 2023, a 600,000-ton increase from the former record set in FY 2019. The Port ranks 1<sup>st</sup> among the nation's ports for volume of autos and light trucks, roll on/roll off heavy farm and construction machinery, and imported gypsum (mineral). 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 2023, the Port continued to expand operations, including ZIM Shipping Lines, one of the top ocean carrier container companies in the world, expanding E-commerce Baltimore Express to be more frequent and with larger ships. The Port is now homeport to two Norwegian Cruise ships, increasing the cruise industry's economic impact on the state, which already generated nearly 400 jobs and \$63 million in annual local business revenues.



# BWI MARSHALL AIRPORT TOTAL ANNUAL PASSENGERS



TARGET: Increase

\*2023 data is preliminary and subject to change.

## What Is the Trend?

- Air service at BWI Marshall Airport in FY 2022 saw a large bounce back from the COVID-19 pandemic, with many airlines returning service that had been suspended. Airline network growth was more tempered in FY 2023.

## What Are Future Strategies?

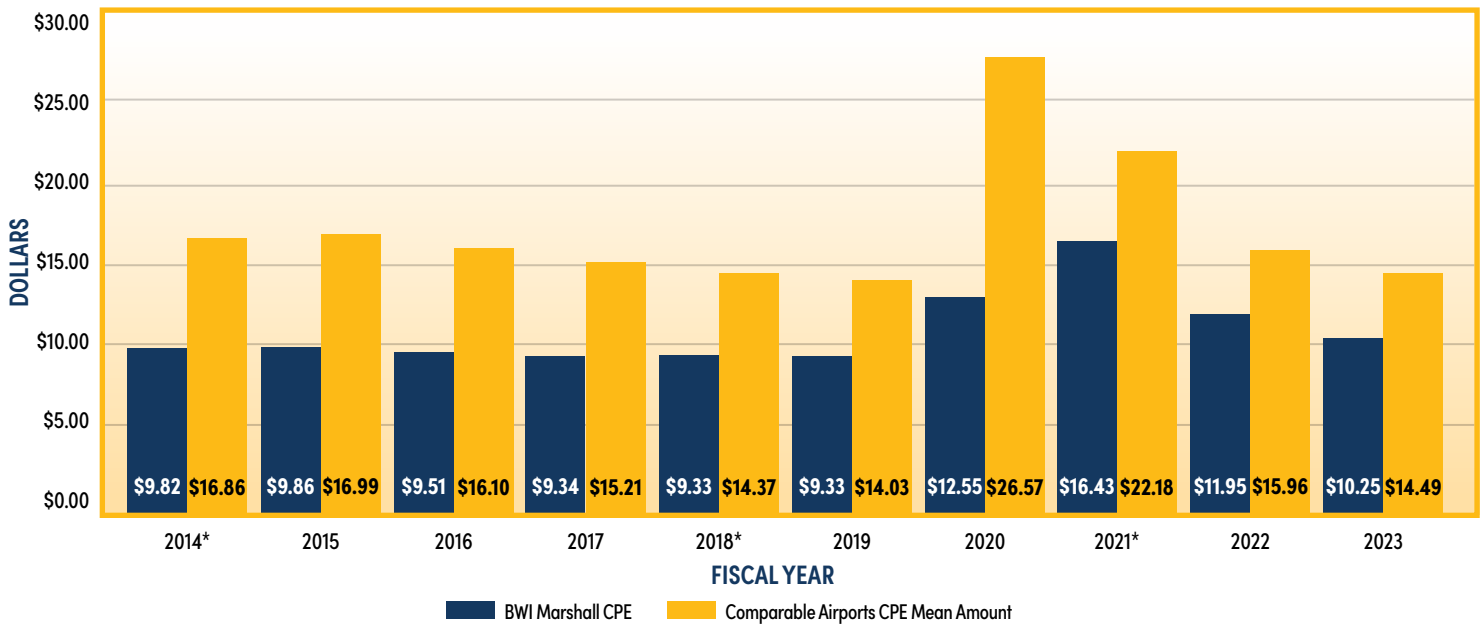
- The multiyear, \$425 million A/B Connector and Baggage Handling System at BWI Marshall Airport is underway. The project will provide additional capacity for Southwest Airlines and enhance customer experience.
- MDOT continues planning for a proposed Terminal C/D Connector that would include baggage handling improvements, a new air traffic control tower, office space, new food and retail concessions and an in-airport hotel.
- Many other projects are also underway, including upgrades to the BWI Marshall Airport's central utility plant, airfield pavement reconstruction, the addition of two new jet fuel storage tanks and replacement of the hourly garage parking guidance system. All these projects will improve BWI Marshall Airport's service.
- MDOT has applied for and been awarded grant funding for several projects under Federal Aviation Administration's (FAA) Airport Terminal Program and Airport Improvement Program. MDOT has projects in the pipeline and plans to submit each year. The grants aim to address aging infrastructure and enhance the customer experience.



# COMPARATIVE AIRLINE COST PER ENPLANED PASSENGER (CPE)



TARGET ACHIEVED



TARGET: Below the mean of comparable airports\*\*

\*Data have been revised from previous report.

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

## What Is the Trend?

- BWI Marshall Airport has consistently met its target for this measure as its CPE is below the mean CPE of comparable airports every year. Even during the COVID-19 pandemic, it did not increase as much as comparable airports. In 2023, BWI Marshall Airport saw a decrease in CPE compared to 2022, getting it closer to pre-pandemic levels.

## What Are Future Strategies?

- BWI Marshall Airport continues to upgrade the customer experience through infrastructure and service improvements, such as recent restroom upgrades (voted America’s Best Restroom by the public) and baggage handling improvements, as well as continuing to provide more non-stop destinations and expanded airline service. Ongoing investment in these improvements will be offset by the additional customers BWI Marshall Airport will attract, thereby maintaining a low CPE.

## AIR TRAVEL IN MARYLAND

Maryland has 36 public-use airports, the largest being BWI Marshall Airport, which continues to grow. Air travel has largely rebounded from the pandemic, with airline seat capacity at BWI Marshall Airport in May 2023 about the same as it was in May 2019. In April 2023, departing passenger traffic still climbed 17% over the same period in 2022 and the busiest day at BWI Marshall Airport since late 2019, before the start of the COVID-19 pandemic, was in September 2023 with 34,745 departing passengers. With recent terminal upgrades and a market as large as Baltimore–Washington, BWI Marshall Airport has a significant impact on the State’s economy. FY 2023 data indicates that BWI Marshall Airport had a \$11.3 billion economic impact. A 2023 report by Upgraded Points ranked BWI Marshall Airport as the fourth-best airport for international holiday travel based on wait time data from the U.S. Customs and Border Protection.



# FREIGHT ORIGINATING AND TERMINATING IN MARYLAND BY MODE— TOTAL TONNAGE AND TOTAL VALUE\*

METHOD FOR MOVING FREIGHT	TOTAL VALUE (MILLIONS) CY 2023***	TOTAL TONNAGE (THOUSANDS) CY 2023***
Air	\$6,492	62
Multiple Modes & Mail Goods	\$70,786	6,645
Other**	\$316	105
Pipeline	\$7,253	35,555
Rail	\$13,316	19,459
Truck	\$314,405	223,969
Water	\$522	3,008
All Freight	\$413,089	288,865

TARGET: None

\* 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. It is important to point out that FAF data are estimates and combinations of various data sources to identify what might be tonnage and value by mode for each state and zone in the nation. There is no source that provides a single, verified number.

\*\*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 FAF5.

\*\*\*CY 2023 data are preliminary and subject to change.

## What Is the Trend?

- Since 2020, total value of freight originating and terminating in Maryland has increased, surpassing pre-pandemic levels for most modes. Freight tonnage estimates show a decrease of tonnage in 2023 by 5.5% since 2022 and 5.8% since before the pandemic in 2019. The mode that carries the highest tonnage is truck, followed by pipeline and rail.

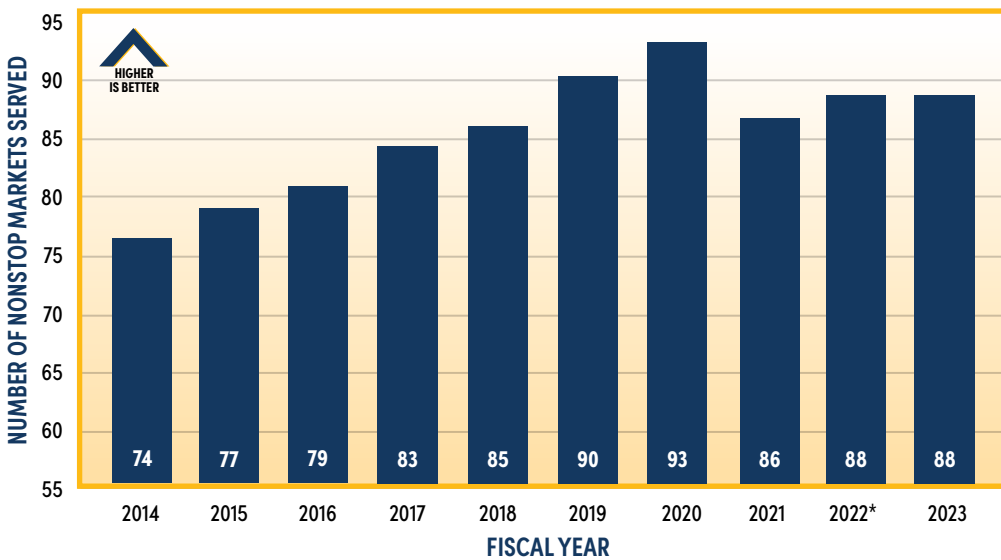
## What Are Future Strategies?

- SHA is engaged in activities to improve awareness of freight performance. These activities include highway improvements, maintenance of the network, capacity expansion, operational projects like intelligent transportation system (ITS) and Transportation System Management and Operations (TSMO), and freight planning development, especially as required by Moving Ahead for Progress in the 21st Century (MAP-21), Fixing America's Surface Transportation (FAST) Act and the 2021 U.S. Infrastructure Investment and Jobs Act (IIJA).
- MDOT is implementing the Maryland Statewide Truck Parking Study, which evaluated existing parking demand, needs and gaps in the system, and linked challenges and opportunities, while also identifying funding and grant options for innovative areas such as Public-Private Partnerships (P3s), electric vehicles (EVs) and connected and automated vehicles (CAV).
- MDOT continues to to implement policies, strategies and programs set out in the Maryland State Freight and Rail Plans.

# NUMBER OF NONSTOP AIRLINE MARKETS SERVED



ON TARGET



TARGET: Short-term target: 90; Long-term target: 100

\*2022 data has been updated from previous report.

## What Are Future Strategies?

- Air Service Development continually meets with airlines around the world to discuss new or increased air service at BWI Marshall Airport, focusing on the attractive market served by the airport, comparative low airport costs, as well as the MAA air service incentive program.

## What Is the Trend?

- The number of nonstop airline markets served at BWI Marshall Airport has not yet reached pre-pandemic numbers. The current number of markets served is 88.
- Since beginning service in 2019, the fastest growing carrier at BWI Marshall Airport was Frontier Airlines, who added new service to Dallas/Fort Worth, Las Vegas, Phoenix and San Juan in the past year. Additionally, Spirit Airlines added service to Austin and San Antonio, and Delta Air Lines added service to Boston. The end of the fiscal year saw new international service from Copa Airlines to its hub in Panama City, Panama, where they offer convenient connections to 55 additional destinations across Latin America and the Caribbean.









# GOAL PROMOTE ENVIRONMENTAL STEWARDSHIP: MINIMIZE AND MITIGATE THE ENVIRONMENTAL EFFECTS OF TRANSPORTATION

**Key Outcomes:** The four objectives and 11 performance measures outlined here will promote environmental stewardship. By utilizing environmentally-focused strategies and setting sustainability goals, MDOT will protect Maryland's natural, historic and cultural resources and minimize the impacts of fossil fuel consumption and other environmentally harmful practices.

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 greenhouse gas (GHG) emissions, as well as climate change adaptation through resiliency efforts. MDOT promotes the conservation of resources for more sustainable operations and service delivery, as well as methods to protect and enhance Maryland's abundant and valuable natural resources.

With the passage of the Climate Solutions Now Act (CSNA) in 2022, Maryland has committed to a nation-leading interim goal of a 60% reduction below 2006 carbon emissions by 2031, progressing to a requirement to reach net-zero emissions by 2045. MDOT's modal administrations have already been working towards this goal. SHA is replacing light duty fleet vehicles with electric vehicle (EV) models and MTA is planning facility upgrades and installation of charging infrastructure in preparation for introducing zero emission buses (ZEBs) into the transit bus fleet. MAA and MPA are electrifying many of their vehicles used at airports and seaports to promote this objective as well.

## Performance Measures

OBJECTIVES	PERFORMANCE MEASURE	RATING
<b>Protect and enhance the natural environment through avoidance, minimization, and mitigation of adverse impacts related to transportation infrastructure</b>	Percent of MDOT's Five-year Municipal Separate Storm Sewer System (MS4) Permits Attained	N/A*
	Diversion Rate and Weight of Municipal Solid Waste; Demolition, Construction and Maintenance (DC&M) Waste; and Hazardous Waste	N/A*
	Annual Dredged Material Capacity Remaining for Harbor and Poplar Island Material (Million Cubic Yards)	 MAKING PROGRESS
<b>Employ resource protection and conservation practices in project development, construction, operations and maintenance of transportation assets</b>	Increase the Beneficial Use and Innovative Reuse of Dredged Materials	 FACING CHALLENGES
	Vehicle Miles Traveled (VMT)/VMT Per Capita	 FACING CHALLENGES
<b>Minimize fossil fuel consumption, reduce greenhouse gas emissions, and improve air quality and support the growth of alternative fuels</b>	Number of Employee Partners in Statewide Transportation Demand Management (TDM) Programs	 FACING CHALLENGES
	Greenhouse Gas (GHG) Emissions From LDV VMT (Light-Duty) Vehicles and MHDV VMT (Medium-Heavy-Duty) Vehicles Statewide TDM Programs	N/A*
	Statewide Vehicle Emissions Inspection Program (VEIP) Testing Compliance Rate	 MAKING PROGRESS
	Percentage of MDOT Fleet Composed of Electric Vehicles (EVs)	N/A*
<b>Support the widespread adoption of alternative fuels electric vehicles, and innovative technologies</b>	Percent of Electric Vehicles (EVs) Registered From Total Registered Vehicles	 MAKING PROGRESS
	Level 2 and DC Fast Charging Ports Per 1000 Residents	N/A*

\*Target under development

In September 2023, MDOT won an \$11.5 million award through the federal discretionary Consolidated Rail Infrastructure and Safety Improvement (CRISI) Program to acquire three new battery electric locomotive and one battery charger at the Port of Baltimore. With the adoption of the Advanced Clean Cars II rule in 2023, Maryland is expected to reach more than 1 million registered EVs by 2030. This accelerated growth in EV adoption is critical to meeting Maryland's goals of a 60% reduction in GHG emissions from 2006 levels by 2031 and net-zero carbon emissions by 2045.



## Objective: Protect and enhance the natural environment through avoidance, minimization and mitigation of adverse impacts related to transportation infrastructure

### PERCENT OF MDOT'S FIVE-YEAR MS4 PERMITS ATTAINED\*

In 2015, SHA received a National Pollutant Discharge Elimination System (NPDES) MS4 permit (No. 11-DP-3313) from the Maryland Department of the Environment (MDE) to control storm-drain-system pollutant discharges in MS4-designated areas. The permit requires that we use restoration practices to treat 20% of existing SHA impervious surfaces and address stormwater wasteload allocations (WLAs) established under U.S. Environmental Protection Agency (EPA)-approved Total Maximum Daily Loads (TMDL).

AGENCY	FISCAL YEAR								
	2015	2016	2017	2018	2019	2020	2021	2022	2023
SHA	34.6%	47.6%	53.7%	60.1%	67.2	100%	100%	100%	100%
MTA							100%	100%	100%
MDTA				100%	100%	100%	100%	100%	100%
MVA								100%	100%
MAA								100%	100%
MPA								100%	100%

TARGET: Target being developed for next year's report

\*This performance measure is new to the AR.

\*\*100% compliance means that MDOT has treated the MDE-required area of previously built impervious surfaces. Treatment of impervious surfaces means that stormwater runoff impacts from an acre of impervious surface (e.g., pavement) are indistinguishable from an acre of natural systems (e.g., stormwater runoff from an acre of forest).

#### What Is the Trend?

- The percent of MDOT five-year MS4 permits attained has reached 100%\*\* for all modal administrations as of FY 2021.
- The smart pond credits were all finally certified in May of 2021 and the SHA Phase I permit requirements had to be met by October 8, 2020.
- MDOT continues to submit annual reports, but since the new Phase I permit hasn't been issued and the Phase II permit just expired, their requirements haven't changed since 2021, so they all remain at 100% attainment.

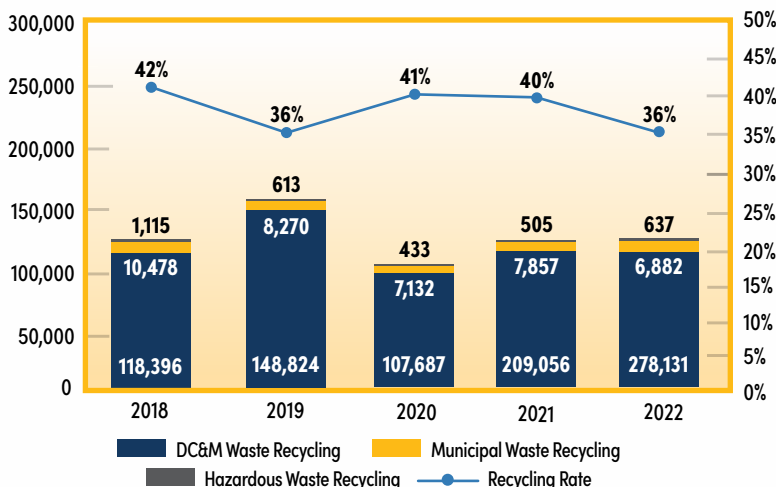
#### What Are Future Strategies?

- The new Phase I permit has not been issued and the Phase 2 permit likely will not be released for several years. (Even though the Phase II permit expired Oct 30, 2023, permit holders have until 2025 to implement all their projects.)
- Once the new permits are issued, MDOT will track percentage complete (performance) trends.

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

### DIVERSION RATE AND WEIGHT OF MUNICIPAL SOLID WASTE; DEMOLITION, CONSTRUCTION AND MAINTENANCE (DC&M) WASTE; AND HAZARDOUS WASTE\*

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.



#### What Is the Trend?

- COVID-19 caused a decrease in overall waste production and recycling. However, MDOT's waste production and recycling is now returning to normal.
- DC&M waste recycling has steadily increased over the five-year period of calendar years 2018 to 2022, demonstrating MDOT's commitment to constant improvement.

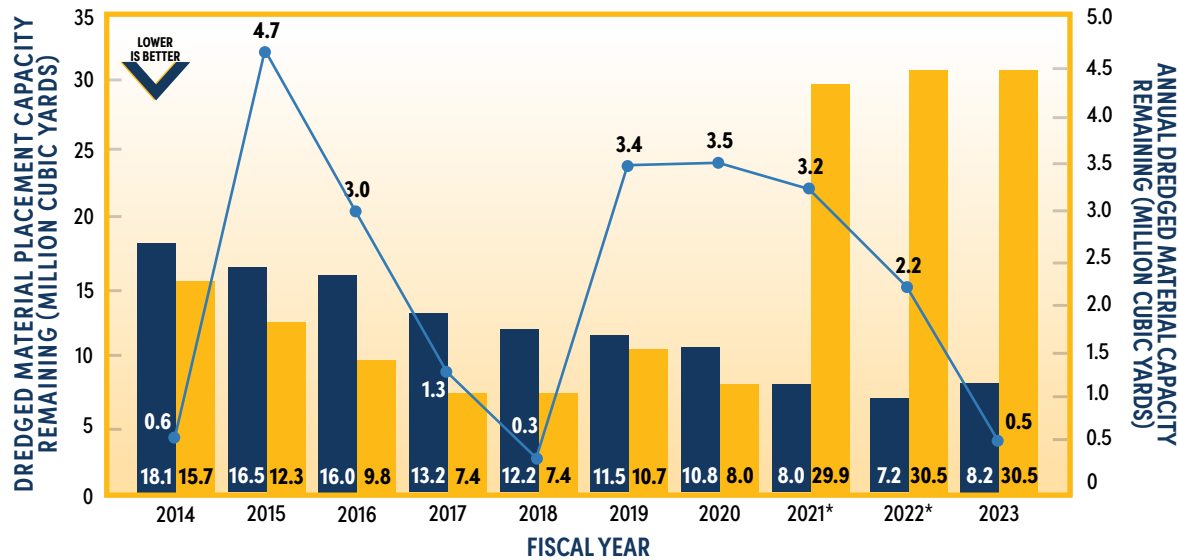
#### What Are Future Strategies?

- MDOT has proposed development of a comprehensive MDOT Waste Reduction and Action Plan, pending approval and funding.
- MDOT is piloting a waste profiling and composting program at TSO to reduce compostable materials being wasted via standard trash pickup.

TARGET: Target being developed for next year's report

\*This performance measure is new to the AR.

# ANNUAL DREDGED MATERIAL CAPACITY REMAINING FOR HARBOR AND POPLAR ISLAND MATERIAL (MILLION CUBIC YARDS)



- Harbor - Annual Dredged Material Capacity Remaining
- Poplar Island - Annual Dredged Material Capacity Remaining
- Annual Dredging to Keep Channels Clear, With Placement into MPA Managed Sites (Millions)

TARGET: 20-Year Capacity

\*2021 and 2022 data have been revised from previous report.

## What Is the Trend?

- Maryland's Port of Baltimore continued to refine harbor dredged material placement capacity and dredging needs due to a reassessment of previous assumptions and current survey and engineering data. On average, there are 1.3 million cubic yards (mcy)/year of maintenance and state/federal new work dredging projects in the Harbor to make improvements to the channel system.
- The state's Dredged Material Management Program (DMMP) continues to support the U.S. Army Corps' Federal DMMP, which was updated and approved in FY 2018.
- Safety and mobility efforts to ensure unimpeded shipping access to the Port have been effective; the Port of Baltimore compares extremely well with the other fully functioning U.S. East Coast ports with 50-foot-deep channels.

## What Are Future Strategies?

- MPA, with the U.S. Army Corps, initiated the Seagirt Loop Feasibility Study in October 2020 to assess the need for navigational improvements to the Seagirt Loop Channel system. The effort was completed in June 2023, and the plan recommends the channel be deepened to 50-feet and widened. These changes will improve navigation efficiencies at the Port of Baltimore to help meet demand for future capacity at the Port facilities, including efficient handling of increased container volume at Seagirt Marine Terminal and faster and safer movement of vessels transiting the channels.
- Construction of the base dike widening, necessary for the Stage One expansion of the Cox Creek Dredged Material Containment Facility, was completed in FY 2021. Construction of the +60-dike raising began late summer 2021 and is expected to be completed in early 2024. Completion of this phase of expansion activities will add 9.8 mcy of harbor dredged material capacity.



# INCREASE THE BENEFICIAL USE AND INNOVATIVE REUSE OF DREDGED MATERIALS\*



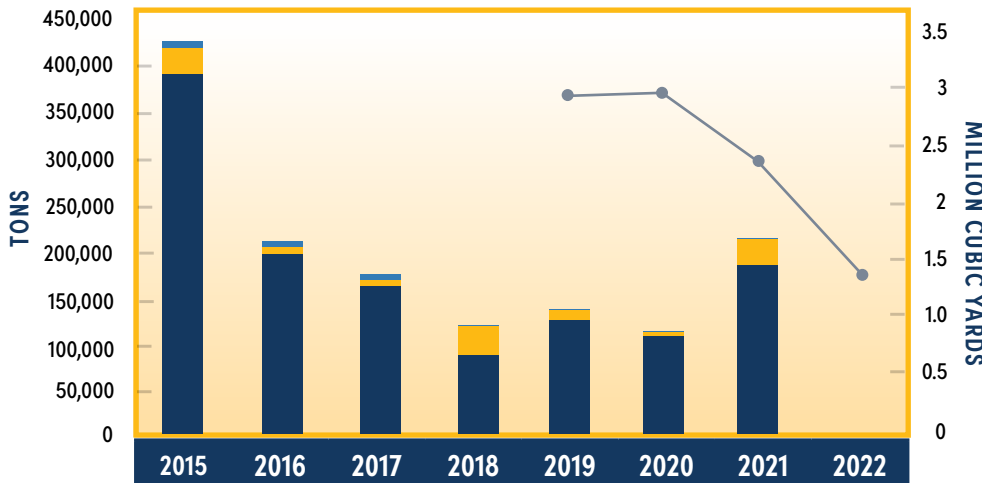
Dredged materials, while often viewed as a waste product, also can be recognized as a valuable resource. MPA is a national leader in advancing the innovative reuse of dredged material through implementation of demonstration-scale projects and research studies and has also successfully shown how dredged sediments can be beneficially used to restore aquatic ecosystems and rebuild lost island habitat. MPA's long-term goal is to implement sustainable innovative reuse and beneficial use programs and projects to address capacity recovery and implement management solutions within Maryland's DMMP, thus supporting the long-term success of the Port of Baltimore.

## What Is the Trend?

- Volumes were down in FY 2023 because MPA is evaluating various tests of innovative reuse of harbor dredged material that were made over the past few years.
- MPA continues to explore and test new methods to reuse dredged material from the Port of Baltimore harbor channels.

## What Are Future Strategies?

- MPA has solicited private companies that used harbor dredged material for products ranging from brick to light-weight aggregate.
- MPA started to develop the Cox Creek Sediment Technology and Reuse (STAR) site to continue the advancement of the innovative reuse of dredged material.
- MPA will continue to investigate other possible uses of dredged material to meet its ultimate goal of using 500,000 cubic yards for the innovative reuse and beneficial use of harbor dredged material annually.



	2015	2016	2017	2018	2019	2020	2021	2022
<b>Metals</b>	5,382	5,975	2,604	1,707	1,408	1,077	1,642	
<b>Concrete</b>	28,508	3,629	2,531	31,358	9,085	532	22,019	
<b>Asphalt</b>	370,590	194,399	158,929	85,332	138,332	106,078	185,394	
<b>Use/Reuse of Dredged Materials</b>					2,656,218	2,831,625	2,351,823	1,430,714

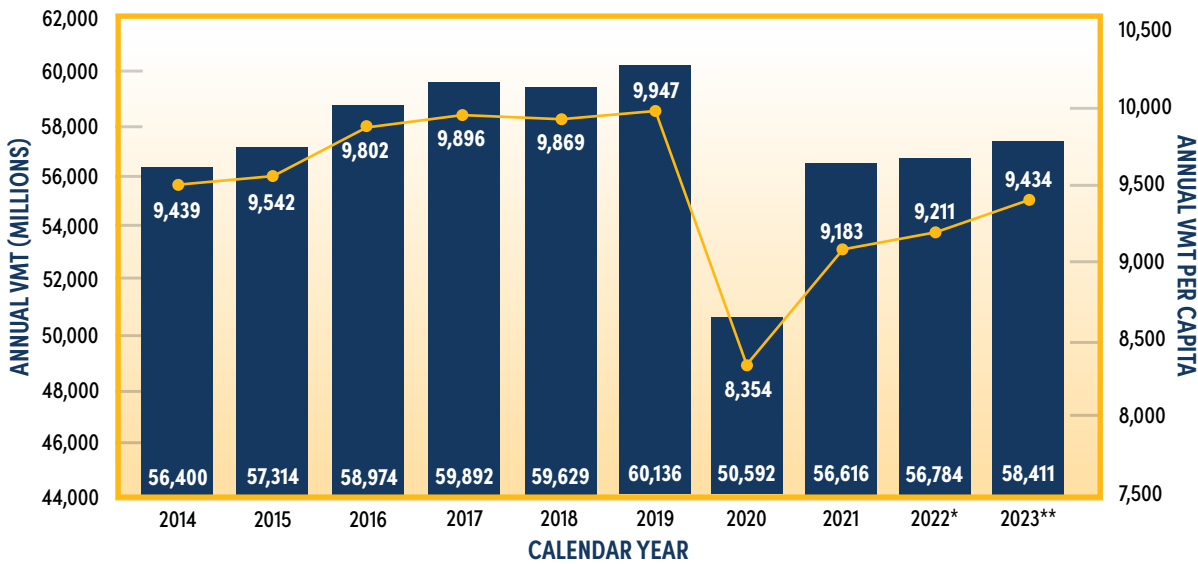
TARGET: 500,000 cubic yards dredged

\*This performance measure is new to the AR.



# Objective: Minimize fossil fuel consumption, reduce GHG emissions, and improve air quality and support the growth of alternative fuels

## VEHICLE MILES TRAVELED (VMT)/VMT PER CAPITA



■ Annual VMT  
 ● Annual VMT Per Capita

**TARGET:** 10% decrease of VMT per capita by 2030 and 20% decrease by 2050

\*2022 data have been revised from previous report.

\*\*2023 data are preliminary and subject to change.



### What Is the Trend?

- Historically, VMT is generally reflective of economic growth and conditions. That is, VMT generally increases during times of greater economic prosperity and decreases during economic depressions.
- As the traffic pattern was too unstable, 2020 was skipped as a base comparison year which is one of the factors affecting the current VMT growth.
- Starting in 2022, the previous year is used now as the base comparison. The VMT in 2022 has increased by 0.3% compared to 2021 but is down 5.6% compared to 2019 (pandemic levels). There has been a reduction in truck VMT, but passenger vehicles VMT has increased.

### What Are Future Strategies?

- MDOT aims to achieve a 10% reduction in VMT per capita in the coming years, and then a 20% reduction by 2050.
- MDOT is implementing active transportation policies and infrastructure (bike lanes, shared-use paths, etc.) and promoting Transportation Demand Management (TDM) strategies and incentives (rideshare, alternative work hours, work from home, Guaranteed Ride Home, etc.) to reduce VMT.

# NUMBER OF EMPLOYEE PARTNERS IN STATEWIDE TRANSPORTATION DEMAND MANAGEMENT (TDM) PROGRAMS\*



TDM strategies and policies are an impactful and cost-effective way to offset vehicle congestion and reduce VMT by promoting alternatives to driving alone, such as taking transit, ridesharing, walking, biking and teleworking. 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. Commuter Choice Maryland's Employer Partner Program recognizes Maryland employers and organizations for their leadership in offering transportation benefits and creative commuting incentives to their employees.

CALENDAR YEAR	NUMBER OF EMPLOYEE PARTNERS
2021	50
2022	48

TARGET: 500 partners by 2030 and 1,000 partners by 2050  
 \*This performance measure is new to the AR.

## What Is the Trend?

- This is a new performance measure for this year's AR. MDOT will develop a way to measure this going forward to monitor performance.
- Participation in the program has declined largely due to employers' closing, relocating out of state or focusing on other priorities as a result of the COVID-19 pandemic. However, it is understood that employers continue to offer commuter benefits that would qualify them to become an Employer Partner, and participation in the program is expected to increase as workplace commuting continues to rebound from the pandemic.

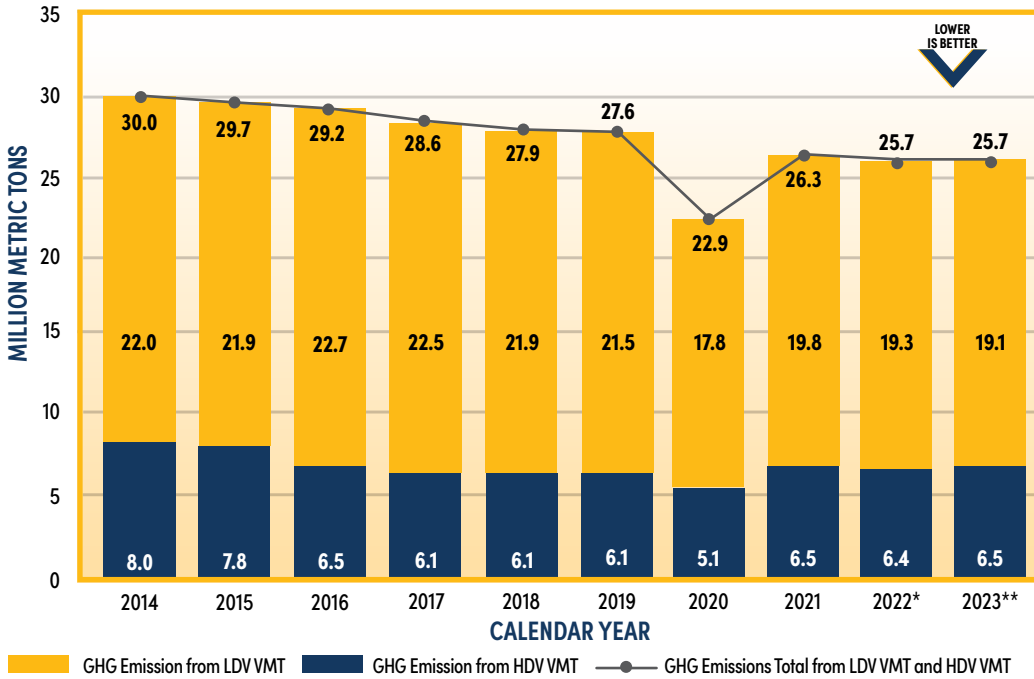
## What Are Future Strategies?

- Commuter Choice Maryland continues to form strong partnerships with local TDM program managers and other state agencies including MDE, the Maryland Department of Commerce and the Maryland Department of Labor to make new connections with the employer community.
- The Employer Partner Program is constantly identifying new outreach opportunities at in-person events and through digital communications to reach employers.
- Commuter Choice Maryland continues to evaluate opportunities to incentivize participation in the Employer Partner Program by identifying employers that should be recognized for the benefits that they already provide while offering support to expand commuter benefits and incentives.



# GREENHOUSE GAS (GHG) EMISSIONS FROM LIGHT-DUTY VEHICLES (LDV) VMT AND MEDIUM-HEAVY-DUTY VEHICLES (MHDV) VMT

GHG emissions from on-road vehicles is primarily a product of two trends: VMT and the efficiency of on-road vehicles. GHG reductions are achieved by reducing VMT and improving efficiency of vehicles. Reducing VMT has other potential benefits to Marylanders, such as reduced congestion and improved travel time reliability. Emissions are calculated using the most recent inventory and MOVES model available at time of analysis. MOVES3 was used for analysis years 2021-2023. EV registrations in Maryland are factored into the GHG estimate.



TARGET: Baseline target in first year

\*2022 revised from previous report to reflect final 2022 HPMS.

\*\*2023 data are preliminary and subject to change

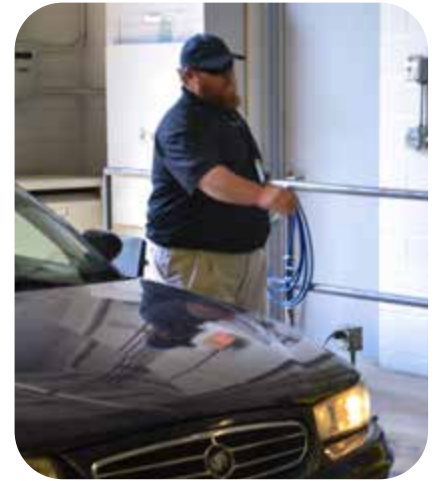
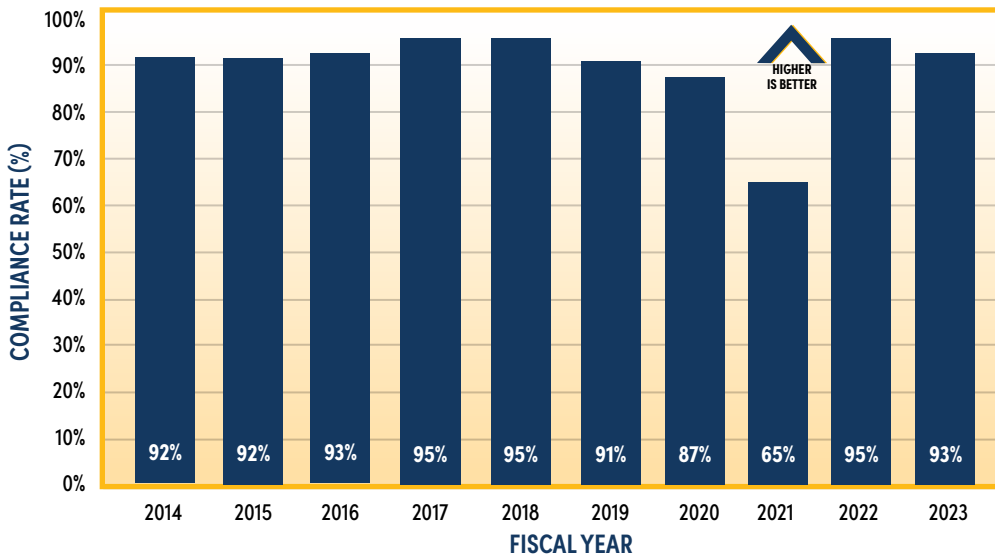
## What Are Future Strategies?

- The Federal Highway Administration (FHWA) Carbon Reduction Program (CRP) supports a variety of MDOT strategic investments that achieve carbon reduction. MDOT's Carbon Reduction Strategy (CRS) will be finalized in November 2023 in collaboration with metropolitan planning organizations (MPOs). The CRS summarizes MDOT activities to reduce carbon emissions and reflects federal, state, and regional strategies pertaining to carbon reduction.
- The passage of Advanced Clean Cars II Program (ACCII) builds on Maryland's existing Clean Cars Program and requires automakers to increase the share of ZEVs sold beginning with model year 2027 so that by model year 2035, 100% of the passenger car and light-duty truck sales are zero emission. In addition, ACCII establishes increasingly stringent emission standards for gas cars and heavier passenger trucks.
- MDOT continues to seek additional state and local organizations, nonprofits and private sector companies as partners for its Commuter Choice Maryland Employer Partner Program to help promote commuter benefits.
- MDOT continues to support local government Transportation Demand Management (TDM) programs to offer free commuter assistance and to support employers in their efforts to develop commuter benefits programs.
- Maryland continues to support and promote the adoption of low-carbon and emission reduction vehicles, including personal vehicles, school bus fleets, transit bus fleet, through legislation, incentives and rebates.

## What Is the Trend?

- In July 2023, VMT was up 2.7% compared to 2022. VMT annual levels 2020 through 2022 reflected pandemic restrictions and altered travel patterns, following relatively stable annual VMT levels from 2017 through 2019. Despite growth in VMT, GHG emissions from on-road transportation continue to decline, reflecting continued improvements in vehicle fleet efficiency.
- Electrification of on-road vehicles continues to expand. EVs represent almost 1.5% of all registered vehicles in Maryland, with over 23,500 EVs newly registered between July 2022 and July 2023. Over 62 ZEV models are available for purchase in 2023 by consumers, including trucks and large vehicles, motorcycles and cars, with automakers committed to bringing more EVs to the market in 2024 and 2025.
- The Maryland Commuter Tax Credit was expanded to offer greater incentives to employers for subsidizing non-single-occupancy vehicle (SOV) commute options for employees. In addition, new rewards have been added to incentrip and new features have been developed including customizable multimodal trip planning, an employer dashboard for workplace commute challenges, and corridor challenges that focus on incentivizing ridesharing and transit use on specific congested corridors.
- SHA's Coordinated Highways Action Response Team (CHART) program continues to reduce congestion and improve travel efficiency by responding to incidents and clearing obstructions from the highway quickly. In 2022, CHART provided 63,474 incident responses and disabled vehicle assists, with an average incident response time of 11.97 minutes.

# STATEWIDE VEHICLE EMISSIONS INSPECTION PROGRAM (VEIP) TESTING COMPLIANCE RATE



TARGET: 100%

## What Is the Trend?

- Statewide VEIP testing compliance rate has been high in the most recent two years at 93% and 95% in 2023 and 2022, respectively. This is a considerable increase from 2021 and 2020 when the compliance rate dropped to 65% and 87%, respectively. The present higher percentages of compliance reflect the long-term trend of a compliance rate greater than 90% that has occurred for most years since 2014.

## What Are Future Strategies?

- MVA is identifying opportunities to engage with customers about the VEIP program and their due dates.
- MVA is no longer requiring vehicle models 2019 or newer to start inspections three years after purchase and instead these vehicles do not require testing for the first six years of the vehicle's life.

## Objective: Support the widespread adoption of alternative fuels, EVs and innovative technologies

### PERCENTAGE OF MDOT FLEET COMPOSED OF ELECTRIC VEHICLES (EVs)\*

MDOT is working on developing this performance measure and collecting data across all MDOT modes for next year.

TARGET: Target being developed for next year's report

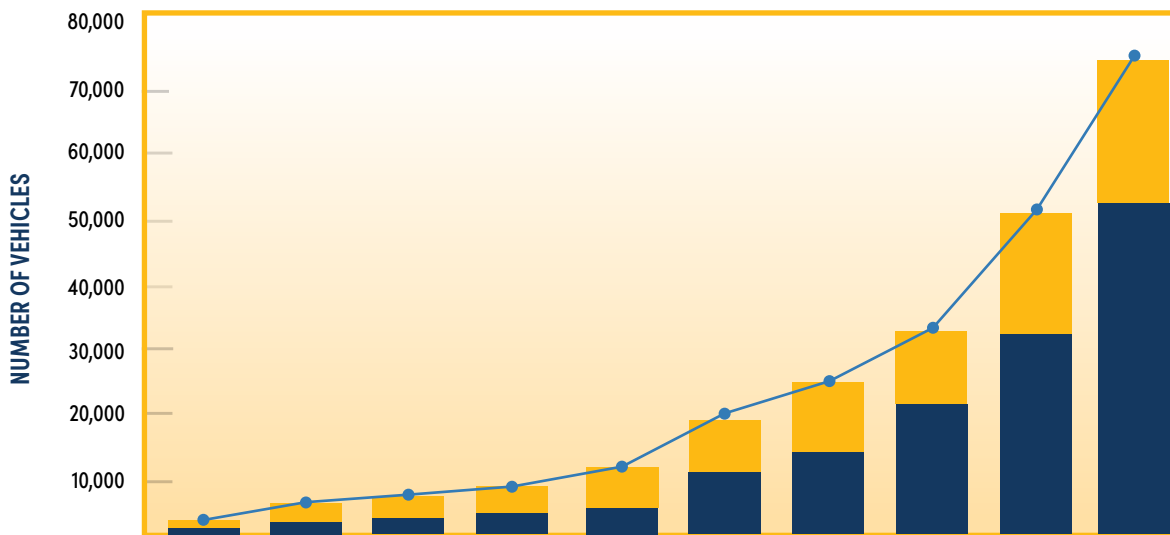
\*This performance measure is new to the AR.



# PERCENT OF ELECTRIC VEHICLES (EVs) REGISTERED FROM TOTAL REGISTERED VEHICLES



Reducing emissions from on-road vehicles is a priority of the Administration, and a paramount strategy in reducing transportation-related GHG emissions in the near-term. By increasing the percentage of EVs from total registered vehicles, Maryland will reduce VMT from internal combustion engine vehicles that rely on carbon-intensive fuels, subsequently lowering GHG emissions. This percentage consists of the number of light-duty, registered EVs in the state out of the total number of light-duty, registered vehicles. EVs include both Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs).



FISCAL YEAR	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BEV	1,421	1,943	2,643	3,745	5,495	10,938	14,930	21,076	33,230	52,008
PHEV	1,757	3,521	4,345	5,624	7,712	9,784	10,812	13,765	19,089	23,853
BEV + PHEV	3,178	5,464	6,988	9,369	13,207	20,722	25,742	34,841	52,319	75,861
% EVs of total Registered Vehicles	0.1%	0.1%	0.1%	0.2%	0.3%	0.4%	0.5%	0.7%	1.0%	1.5%
Total Registered Vehicles	4,872,481	4,950,019	4,992,358	5,030,505	5,086,501	5,126,010	5,159,469	5,084,777	5,231,513	5,151,222

TARGET: 1.1 million EVs in 2030

Source: MVA Office of Data Management, EV Registration Data 6/30/2023

## What Is the Trend?

- 23,542 EVs were newly registered in Maryland in the 12-month period between July 2022 and July 2023, representing 45% growth in the number of EVs on the road.
- Of the 23,542 newly registered EVs, over 18,700 were BEVs and over 4,700 were PHEVs. In FY 2019, BEVs overtook PHEVs as having the largest EV market share in Maryland.

## What Are Future Strategies?

- With the Advanced Clean Cars II program (ACC II) in 2023, which will require auto manufacturers to continuously increase the share of EVs sold in the state beginning with model year 2027, Maryland is expected to reach approximately 1.34 million registered EVs by 2031.
- Consumers are taking advantage of the amended Maryland EV Tax Credit that took effect July 1, 2023, which allows buyers to claim a State tax credit up to \$3,000 for their purchase of a new EV. The tax credit will be in effect through June 30, 2027.



## LEVEL 2 AND DC FAST CHARGING PORTS PER 1,000 RESIDENTS\*

The expansion of public EV charging infrastructure in Maryland will be necessary to support Maryland's projected growth to more than 1 million EVs registered by 2030. These future EV registrations are a component of ensuring that Maryland meets air quality and GHG reduction goals. Level 2 charging stations are ideal for locations where there would be longer dwell times, and provide approximately 20 miles of driving range for each hour charging. DC Fast charging stations are ideal for locations with shorter dwell times, such as along highways or commercial sites, and provide approximately 200 miles of driving range for each hour charging.

FISCAL YEAR	VALUE
2023	0.62 charging ports per a thousand residents**

**TARGET:** Target being developed for next year's report

\*This performance measure is new to the AR.

\*\*Sources: Charging Ports data: Alternative Fuel Data Center 6/30/2023 download; Population data: 7/1/2022 Population Estimates from the US Census, MD Population: 6,164,660.

### What Is the Trend?

- At mid-year, there were more than 1,400 publicly accessible charging stations in Maryland with more than 3,900 charging ports. Approximately 20% of public charging ports are DC fast chargers.
- MDOT completed the 2023 update of the Maryland National Electric Vehicle Infrastructure (NEVI) Plan and submitted it to the Joint Office on August 1, 2023. The Plan outlines the approach for deploying charging infrastructure and achieving the goals of the federal NEVI Program.
- MDOT prepared to launch the Maryland NEVI Program by issuing two Requests for Information (RFIs) to interested stakeholders. The first RFI solicited information pertinent to program funding and costs. The second RFI solicited information pertinent to data collection and reporting.
- MDOT developed and launched an EV Charger Siting Tool to assist potential applications to the NEVI and CFI programs. The interactive tool consolidates data from a variety of state and federal agencies to help determine whether a site would a good candidate for grant funding.

### What Are Future Strategies?

- MDOT will release its NEVI Program Round 1, with a goal of awarding contracts for installations of DC Fast chargers along Maryland's 23 EV Alternative Fuel Corridors (AFCs). Through the NEVI Program, MDOT aims to support the establishment of an interconnected network that will facilitate data collection, equitable access and network reliability.
- MDOT coordinated with local jurisdictions and Maryland Clean Energy Center (MCEC) on their applications to the federal CFI grant program. Successful grant applications will secure CFI grant funds for community and corridor charging installations.
- Under MDOT's Leadership, the Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC) is dedicated to accelerating the adoption of EVs and expanding EV infrastructure to support EVs.



# GLOSSARY

GLOSSARY TERM	DEFINITION
<b>Annual Attainment Report on Transportation System Performance (AR)</b>	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 AR must be presented annually to the Governor and General Assembly before they may consider the MTP and CTP. <a href="http://www.mdot.maryland.gov/AR">www.mdot.maryland.gov/AR</a>
<b>Automated Vehicles (AV)</b>	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.
<b>Calendar Year (CY)</b>	The period of 12 months beginning January 1 and ending December 31 of each reporting year.
<b>Commuter Choice Maryland</b>	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. <a href="http://www.commuterchoicemaryland.com">www.commuterchoicemaryland.com</a>
<b>Coordinated Highways Action Response Team (CHART)</b>	CHART is an incident management system aimed at improving real-time travel conditions on Maryland's highway system. CHART is a joint effort of SHA, MDTA and the Maryland State Police (MSP), in cooperation with other federal, state and local agencies.
<b>Cost Per Enplaned Passenger (CPE)</b>	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.
<b>Consolidated Transportation Program (CTP)</b>	A six-year program of capital projects, which is updated annually to add new projects and reflect changes in financial commitments. <a href="http://www.mdot.maryland.gov/CTP">www.mdot.maryland.gov/CTP</a>
<b>Disadvantaged Community</b>	Defined by the federal analysis tool <b>US DOT Equitable Transportation Community (ETC) Explorer</b> , an interactive web application that uses 2020 census tracts and data, to explore the cumulative burden communities experience, in the following five components: Transportation Insecurity, Climate and Disaster Risk Burden, Environmental Burden, Health Vulnerability and Social Vulnerability.
<b>Dredged Material Management Program (DMMP)</b>	The DMMP evaluates and identifies preferred alternative dredged material placement site(s) to accommodate the U.S. Army Corps' dredging needs.
<b>Electric Vehicle (EV)</b>	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.
<b>E-ZPass®</b>	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.
<b>Fiscal Year (FY)/ Federal Fiscal Year (FFY)</b>	A yearly accounting period covering the period between July 1 and June 30 of each reporting year (FFY: October 1 to September 30).
<b>Freight Analysis Framework (FAF)</b>	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).
<b>Greenhouse Gas (GHG)</b>	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.

<b>Locally Operated Transit Systems (LOTS)</b>	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.
<b>Light-duty Vehicles (LDV) and Medium-heavy-duty Vehicles (MHDV)</b>	LDV refer to the vehicles that have maximum Gross Vehicle Weight Rating less than 8,500 lbs. MHDV refer to vehicles that have a Gross Vehicle Weight Rating of more than 10,000 lbs.
<b>Infrastructure Investment and Jobs Act (IIJA)</b>	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.
<b>Maryland Transportation Plan (MTP)</b>	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. <a href="http://www.mdot.maryland.gov/MTP">www.mdot.maryland.gov/MTP</a>
<b>Modal Administrations</b>	MDOT’s modal administrations include Maryland Aviation Administration (MAA); Maryland Port Administration (MPA); Maryland Transit Administration (MTA); Motor Vehicle Administration (MVA); State Highway Administration (SHA). The MDOT Secretary also serves as Chairman of the Maryland Transportation Authority (MDTA).
<b>Municipal Separate Storm Sewer System (MS4) Permit</b>	MS4 permits allow the state to discharge stormwater collected by their storm sewer systems to the water bodies.
<b>Public-Private Partnerships (P3s)</b>	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.
<b>Shared Mobility</b>	Shared mobility refers to a transportation strategy by which users can access various types of services or products, including bicycles, scooters or ridesharing on-demand. These offerings provide flexibility in transportation choice.
<b>State Report on Transportation (SRT)</b>	The SRT is prepared annually and distributed to the General Assembly, local elected officials, and interested citizens. It consists of three documents, the AR, the MTP and the CTP.
<b>Strategic Highway Safety Plan (SHSP)</b>	A SHSP is a federally required statewide-coordinated safety plan that provides a framework for reducing highway fatalities and serious injuries on roadways.
<b>Transit Oriented Development (TOD)</b>	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.”
<b>Transportation Demand Management (TDM)</b>	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).
<b>Vehicle Emissions Inspection Program (VEIP)</b>	VEIP, administered by MDE and MVA, requires inspection of vehicle emission systems every two years and repair of vehicles that fail to meet emission standards. VEIP plays an important role in reducing Maryland’s air pollution problems.
<b>Vehicle Miles Traveled (VMT)</b>	A measurement of the total miles traveled by all vehicles.
<b>Zero Emissions Electric Vehicle Infrastructure Council (ZEEVIC)</b>	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 charging and hydrogen refueling infrastructure plan and other potential policies to promote and facilitate successful integration of ZEVs into Maryland’s transportation network.
<b>Zero Emissions Vehicle (ZEV)</b>	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	MODE	PAGE NUMBER
<b>Enhance Safety &amp; Security</b>			
<b>Reduce the number of lives lost and injuries sustained on Maryland's transportation system</b>			
<b>Annual Number of Fatalities on All Maryland Public Roads</b>	Annual number of traffic fatalities on all Maryland public roads. The fatality rate is calculated per 100 million vehicle miles of travel.	MHSO	6
<b>Annual Number of Serious Injuries on All Maryland Public Roads</b>	Annual number of traffic personal injuries on all Maryland public roads. The personal injury rate is calculated per 100 million vehicle miles of travel.	MHSO	6
<b>Annual Number of Bicycle and Pedestrian Fatalities and Serious Injuries on All Maryland Public Roads</b>	Number of pedestrians and bicyclists killed/injured in traffic-related crashes in a calendar year, on all Maryland public roads including MDTA and locally owned facilities.	MHSO	7
<b>Annual Number of Transit Passenger Fatalities and Serious Injuries</b>	Number of transit passengers killed/injured while utilizing MTA services.	MTA	8
<b>Annual Number of At-Grade Railroad Crossing Incidents Resulting in Injury or Fatality</b>	At-grade railroad crossings are designated in the Federal Railroad Administration's database as a point of conflict between the train and a motorist/pedestrian/cyclist. This includes roadways, pathways and pedestrian station crossings.	TSO	8
<b>Minimize disparities in safety across Maryland's diverse communities</b>			
<b>Annual Number of Fatalities and Serious Injuries on Maryland Public Roads in Transportation Disadvantaged Communities</b>	Number of persons killed/injured in historically disadvantaged communities on all roads in Maryland	MHSO	9
<b>Address multimodal safety needs to support a safe, low stress and secure transportation system</b>			
<b>Preventable Incidents Per 100,000 Vehicle Miles on Transit</b>	Preventable incidents are crashes in which drivers did not do everything they could to avoid a crash.	MTA	9
<b>Percentage of State-Owned Roadway Directional Miles Within Urban Areas that Have Sidewalks</b>	Annotated Code of Maryland requires that SHA construct sidewalks at the time of construction or reconstruction of an urban highway, or in response to a request by a local government.	SHA	10
<b>Percent of Sidewalks That Meet Americans With Disabilities Act (ADA) Compliance</b>	Accessible sidewalk facilities provide mobility for all pedestrians. Tracking the percent that are ADA compliant helps ascertain whether Maryland's sidewalk program meets federal benchmarks as required by the ADA.	SHA	10
<b>Miles of Lower Level of Traffic Stress (LTS) Score</b>	Bicycle level of traffic stress (LTS) measures the "bikeability" of the roadway network based on the bicycle riders' point of view. This year, MDOT applied the new methodology to the transportation network for both FY2022 and FY2023. Under this performance measure, additional LTS 1 roadway would be the most bike-friendly.	SHA	11
<b>Maintain a safe system during adverse weather events, man-made threats and other system disruptions</b>			
<b>Incident (Coordinated Highways Action Response Team, or CHART) Response Rates/Times</b>	Average response time, defined as average time from receiving an emergency request to the arrival of an emergency response unit on scene and reflects the tangible benefits of the CHART incident management program.	SHA	12

PERFORMANCE MEASURE	DEFINITION	MODE	PAGE NUMBER
<b>Average Time to Restore Normal Operations After a Weather Event (Roadway Clearance Times for Weather Events)</b>	Efficiency of MDOT SHA's and MDTA's operation in reducing the impact of winter weather events by quickly restoring normal operations.	SHA	12
<b>Deliver System Quality</b>			
<b>Provide a multimodal system resilient to changing conditions and hazards</b>			
<b>Percentage of Lane-Miles/Fixed Guideway Transit-Miles Susceptible to Flooding and Storm Surge</b>	Percentage of lane miles and fixed guideway transit miles that are prone to damage during a storm and flooding.	TSO	14
<b>Increase the percentage of state-owned or funded facilities and assets in a state of good repair</b>			
<b>Unfunded State of Good Repair Backlog</b>	Number of projects that are still unfunded from the state of good repair backlog in order to show progress towards system preservation.	TSO	15
<b>Percentage of the Maryland State Highway Network in Overall Preferred Maintenance Condition</b>	Overall condition of the network reflects how well asset management strategies, operational improvements, and technology have sustained the quality and safety of existing highways.	SHA	15
<b>Overall Acceptable Pavement Condition</b>	Overall pavement condition is based on remaining service life, which is a scale of 0 to 50 years to describe pavement condition.	SHA	16
<b>Percentage of All Maryland Bridges That Are In Poor Condition</b>	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)).	SHA	16
<b>Minimize travel delays and improve reliability and quality</b>			
<b>Percent of All MDOT Transit Service Provided on Time</b>	Measure is an indicator of service quality and efficiency and correlates highly with system usage and customer satisfaction.	MTA	17
<b>Annual Person Hours of Delay and Travel Time Reliability on Maryland Public Roads</b>	Measure explores the efficiency of customer travel on Maryland's public roads.	SHA	18
<b>Truck Hours of Delay and Truck Reliability on Maryland Public Roads</b>	Measure explores the efficiency of goods movement on Maryland public roads.	SHA	18
<b>Annual Cost of Congestion (Billions) on the Maryland Public Roadway Network</b>	Sum of the cost of delay, the cost of extra fuel consumed due to slow operating speeds and the cost of emissions.	SHA/MDTA	19
<b>User Cost Savings for the Traveling Public Due to Incident Management</b>	Cost saving calculated using Coordinated Highways Action Response Team (CHART) incident response data.	SHA/MDTA	20
<b>Accelerate project completion through improved project delivery</b>			
<b>Percent of CTP Program That is Funded With Federal Dollars</b>	Measure calculates how well the Department leverages state dollars by comparing how much of (what percentage of) the capital consolidated transportation program is funded using private, local and federal partners.	TSO	21
<b>Percent of Projects Delivered on Time Across MDOT</b>	Measure shows how well the Department is doing in delivering projects on time.	TSO	21
<b>Percent of Projects Delivered On-Budget Across MDOT</b>	Measure shows how well the Department is doing in delivering projects within budget.	TSO	22
<b>Percent of MDTA Tolling Transactions Collected E-ZPass® vs. Video Tolls vs. Pay-By-Plate</b>	Toll collections by E-ZPass® and Automatic Vehicle Identification/Total number of toll collections, includes video tolls, I-tolls and AVI.	MDTA	22
<b>MVA Alternative Service Delivery (ASD) Transactions as Percent of Total Transactions</b>	Transactions by alternative services (services without a visit to an MDOT MVA branch).	MVA	23
<b>MDOT MVA Average Cost Per Transaction MDOT MVA Average Cost Per Transaction</b>	Operating costs and capitalized costs/Number of transactions.	MVA	24

PERFORMANCE MEASURE	DEFINITION	MODE	PAGE NUMBER
<b>Serve Communities and Support the Economy</b>			
<b>Enhance Marylanders' satisfaction with the transportation system and MDOT services</b>			
<b>Overall Satisfaction With MDOT</b>	An annual survey question on this topic provides information as to if MDOT is succeeding in its efforts to provide exceptional customer service.	TSO/MTA/MVA/MAA	27
<b>Percentage of MVA Customers With a Wait Time Under 10 Minutes</b>	Length of time as reported from when the customer obtains a service ticket until their transaction is completed.	MVA	28
<b>Apply enhanced technologies to improve communication and relay real-time information</b>			
<b>Percentage of Modal Administration Services That Provide Real-Time Information</b>	Measure shows how well the Department is providing real-time travel information to the traveling public.	All Modal Admins	29
<b>Prioritize the transportation needs of underserved and overburdened communities in project selection and scoping</b>			
<b>Access to Transit (Within ½ Mile of a Transit Station/Stop) by People Who Live In Overburdened and Underserved Areas As Defined By the Climate Solutions Now Act (CSNA)</b>	Measure shows the transit accessibility in the overburdened and underserved areas as defined by CSNA.	MTA	30
<b>Relative Percentage of CTP Investment That Is In Overburdened and Underserved Communities</b>	Depict how well the Department is investing in transportation across the state to ensure everyone has access to transportation options.	TSO	31
<b>Improve quality of life by providing active transportation and transit access to jobs and opportunities</b>			
<b>Commute Mode Share</b>	Commute mode share tracks how Marylanders travel to work and is based on data from the American Communities Survey (U.S. Census).	TSO	32
<b>Multimodal Access to Essential Services/Destinations</b>	Measure the accessibility of essential services and destinations by different modes.	TSO/MDP/MTA	33
<b>Increase transit use, active transportation and Transit Oriented Development (TOD)</b>			
<b>Annual Transit Ridership (Thousands)</b>	Annual transit ridership for direct-operated services including local bus, Baltimore Metro and light rail. Annual transit ridership for contracted services including MARC, Contracted Commuter Bus, Paratransit and LOTS.	MTA	34
<b>Maryland—Only WMATA Annual Ridership</b>	WMATA ridership data includes Metrorail, Metrobus and MetroAccess riders.	WMATA	34
<b>MTA Average Weekday Transit Ridership</b>	Weekday transit usage demonstrates progress toward better mobility	MTA	35
<b>Population Within ½ Mile of a Transit Station/Stop; and Number of Jobs Within ½ Mile of a Transit Station/Stop</b>	Measures show how transportation can improve access to jobs and the gaps in accessibility to opportunities.	MTA	36
<b>Fixed-Route Ridership by Seniors and People With Disabilities</b>	Number of seniors and people with disabilities using fixed-route ridership.	MTA	36
<b>Annual Revenue Vehicle Miles of MTA Service Provided</b>	Revenue vehicle miles indicates the level of transit service available to, and in use by, the general public.	MTA	37
<b>Improve the efficiency and competitiveness of the Port of Baltimore and BWI Thurgood Marshall Airport</b>			
<b>Port of Baltimore Foreign Cargo Tonnage and MPA General Cargo Tonnage</b>	Measures the amount of foreign and general cargo moving through Maryland's Port of Baltimore.	MPA	38
<b>Percentage of MPA Operating Budget Recovered by Revenues</b>	Revenues are important as a measure of activity at the MPA terminals. Most of MPA's operating expenses are recovered by revenues generated.	MPA	39

PERFORMANCE MEASURE	DEFINITION	MODE	PAGE NUMBER
<b>BWI Marshall Airport Total Annual Passengers</b>	Measures number of annual passengers using the BWI Marshall Airport.	MAA	40
<b>Comparative Airline Cost Per Enplaned Passenger (CPE)</b>	Total airline-related fees/Total enplaned passengers at BWI Marshall Airport.	MAA	41
<b>Freight Originating and Terminating in Maryland By Mode— Total Tonnage and Total Value</b>	Measures the weight and value of goods originating or terminating in Maryland.	TSO	42
<b>Number of Nonstop Airline Markets Served</b>	Nonstop flights are direct to destinations without connections.	MAA	42
<b>Promote Environmental Stewardship</b>			
<b>Protect and enhance the natural environment through avoidance, minimization, and mitigation of adverse impacts related to transportation infrastructure</b>			
<b>Percent of MDOT's Five-year Municipal Separate Storm Sewer System (MS4) Permits attained</b>	Amount of MS4 permits that have been attained by MDOT.	TSO	44
<b>Employ resource protection and conservation practices in project development, construction, operations and maintenance of transportation assets</b>			
<b>Diversion Rate and Weight of Municipal Solid Waste; Demolition, Construction and Maintenance (DC&amp;M) Waste; and Hazardous Waste*</b>	Measures the diversion rate and amount spent on disposing construction, demolition, and maintenance materials in landfills and incinerators.	TSO	44
<b>Annual Dredged Material Capacity Remaining for Harbor and Poplar Island Material (Million Cubic Yards)</b>	Monitors existing capacity remaining at Harbor and Poplar Island dredged material placement sites.	MPA	45
<b>Increase the Beneficial Use and Innovative Reuse of Dredged Materials</b>	Measure tracks the use of dredged materials.	MPA	46
<b>Minimize fossil fuel consumption, reduce greenhouse gas emissions, and improve air quality and support the growth of alternative fuels</b>			
<b>Vehicle Miles Traveled (VMT)/VMT Per Capita</b>	Tracks the demand for VMT and VMT per person.	TSO/SHA	47
<b>Number of Employee Partners in Statewide Transportation Demand Management (TDM) Programs</b>	Provides information on partnerships with employers with transportation benefits to promote alternative transportation in order to minimize fossil fuel consumption.	TSO	48
<b>Greenhouse Gas (GHG) Emissions From Light-Duty Vehicles (LDV) VMT and Medium-Heavy-Duty Vehicles (MHDV) VMT</b>	GHG emissions from on-road vehicles are primarily a product of two trends: VMT and the efficiency of on-road vehicles.	TSO	49
<b>Statewide Vehicle Emissions Inspection Program (VEIP) Testing Compliance Rate</b>	Monitoring the VEIP testing compliance rate ensures system effectiveness and identifies vehicles exceeding allowable standards.	MVA	50
<b>Support the widespread adoption of alternative fuels, electric vehicles and innovative technologies</b>			
<b>Percentage of MDOT Fleet Composed of Electric Vehicles (EVs)</b>	Measures the growth in EVs in the Department fleet.	TSO	50
<b>Percent of Electric Vehicles (EVs) Registered From Total Registered Vehicles</b>	Measure utilizes MVA Electric Vehicle registration data (PHEV, BEV and total) reported as of June 30 of each year.	MVA	51
<b>Level 2 and DC Fast Charging Ports Per 1,000 Residents</b>	Measure shows the growth in EV infrastructure across Maryland. The measure focuses on level 2 chargers and DC fact chargers.	TSO	52



Implementing the Maryland Transportation Plan and Consolidated Transportation Program

# 2024 Annual Attainment Report

## On Transportation System Performance

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This document is prepared pursuant to Transportation Article Section 2-103.1 of the Annotated Code of Maryland. Additional copies are available by calling (410) 865-1288; Toll Free (888) 713-1414; or from the internet at [www.mdot.maryland.gov](http://www.mdot.maryland.gov).

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