

APPENDIX K – National and State Performance Management Goals

National and State Performance Management Goals

The Fixing America's Surface Transportation (FAST) Act has continued the transition, started by Moving Ahead for Progress in the 21st Century Act (MAP-21), of the nation's surface transportation program to a performance and outcome-based program, in which resources are invested in projects to achieve targets toward regional, state, and national goals. The bill established seven national goals described in 23 USC§150(b).

The FHWA and FTA have published a series of rules that establish regulations to assess progress towards the seven national goals. The regulations direct states, Metropolitan Planning Organizations (MPOs), and transit providers to establish targets and track specific measures related to the conditions and performance of their surface transportation systems in areas that include bridges, pavement, safety, congestion, freight, and transit asset management. States and MPOs are to incorporate the measures into their transportation improvement programs and long-range transportation plans, and other performance-based planning and programming resources to demonstrate how proposed transportation projects contribute to the achievement performance objectives and national goals.

Performance-Based Planning and Programming

In addition to its long-standing efforts to measure progress, as documented in the Annual Attainment Report (AR), Managing for Results (MFR) Report, and the MDOT Excellerator, MDOT has established performance targets for safety, infrastructure condition, system performance, congestion mitigation, and air quality for the State of Maryland, as part of Federal MAP-21 and FAST Act requirements. MDOT continues to advance performance-based planning and programming practices throughout the state.

Federal appropriation amounts are provided for the following categories – National Highway Performance Program (NHPP), Surface Transportation Program Block Grant (STPBG), Highway Safety Improvement Program (HSIP), Railway-Highway Crossing Program, Congestion Mitigation/Air Quality (CMAQ), Transportation Alternatives Program (TAP), Federal Transit Administration (FTA) programs, and State Planning and Research (SPR/PL). After receiving the federal appropriations and based on eligibility, the federal programs are translated into state defined categories to emphasize system priorities, such as Safety Spot Improvements, Bridge Replacement, Pavement Reconstruction, and System Upgrade, which correlate and tie funding to the performance management areas defined by MAP-21 and the FAST Act.

Highway Safety:

In 2019, Maryland became a Vision Zero state, with a goal of eliminating deaths and serious injuries on its roadways. Vision Zero is a data-driven effort to reduce fatalities and serious injuries by developing strong leadership in organizations that directly impact highway safety.

Maryland's commitment to a safe transportation system for all users is expressed in the 2040 Maryland Transportation Plan and supported by the strategies in the Maryland 2021-2025 Strategic Highway Safety Plan to focus on the education, enforcement, engineering, and emergency medical services actions to reduce fatalities and serious injuries.

MDOT programs projects, through the annual Highway Safety Improvement Program (HSIP) Annual Report to the Federal Highway Administration (FHWA), that are intended to improve safety to help Maryland meet Highway Safety Performance Targets (see Figure 1), and the Vision Zero performance objective. Maryland leaders continue to build partnerships with government agencies, private citizens, traditional safety advocates, and nontraditional partners to strengthen state and local efforts to improve

the safety of our transportation system for all users. MDOT collaborates with MPOs to set regional safety targets and foster a commitment by State, Municipalities, and Local Public Agencies to partner to address safety statewide.

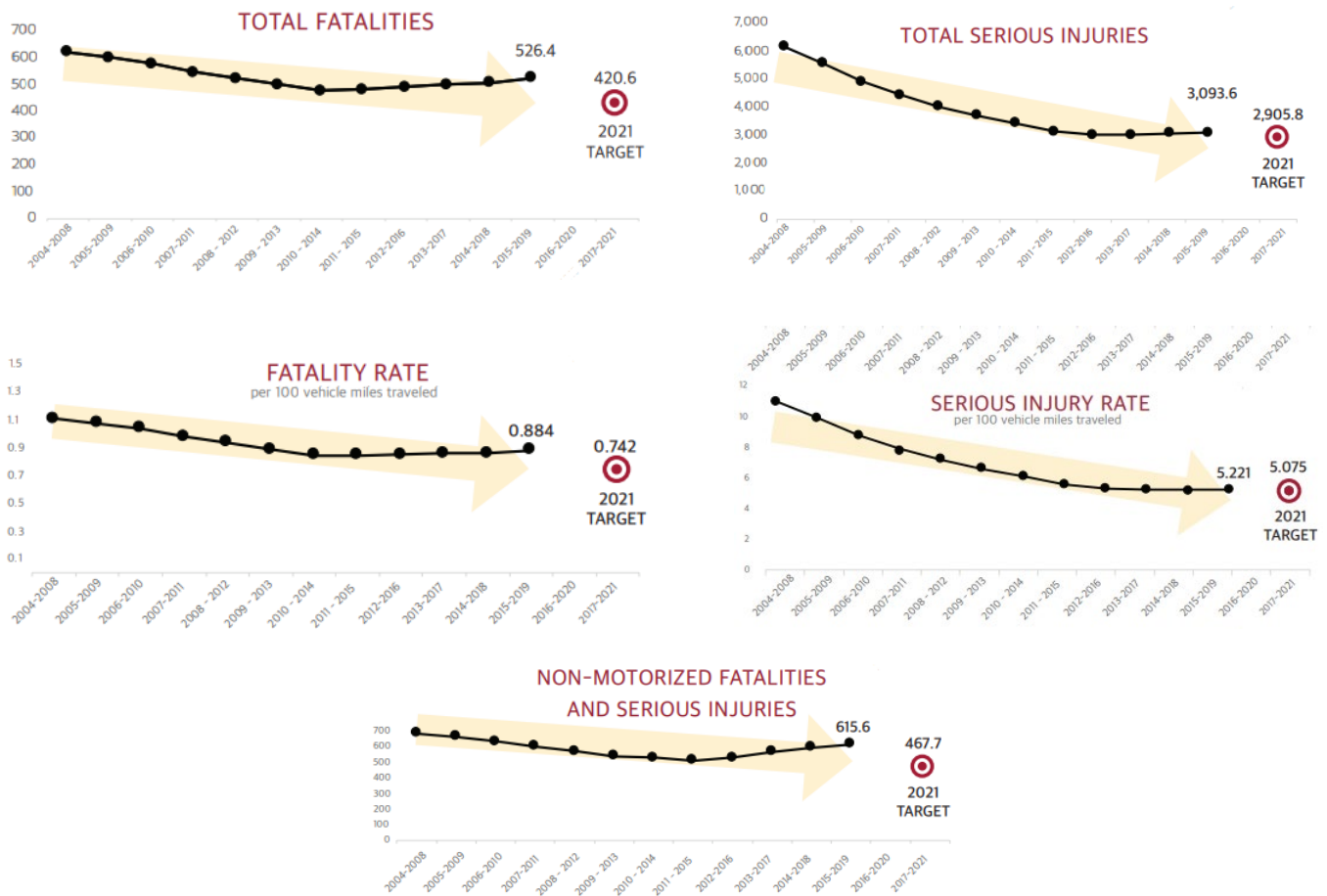


Figure 1. Maryland Safety Performance Targets, August 2020

Infrastructure Condition:

In the Maryland Final Transportation Asset Management Plan (TAMP) for the National Highway System bridges and pavement, MDOT outlines short term performance targets and long-term performance objectives, as part of a risk-based approach to asset management. Infrastructure condition targets, see Figure 2, for the National Highway System (NHS) in Maryland were developed through an iterative, collaborative process which included monitoring performance trends, analyzing life cycle plans, and reevaluating future performance projections in partnership with Maryland’s 16 partner owners of NHS bridge and pavement assets, including:

- * National Park Service
- * United States Army Corps of Engineers
- * County Governments
- * Municipalities
- * Local Park Commissions

The TAMP serves as a tactical blueprint for all partner owners of NHS assets to work together to achieve the performance objectives through lifecycle management strategies. In the short term, Through the annual National Bridge Inventory and Highway Performance Monitoring System reporting, MDOT works with partner owners to monitor and report change in the infrastructure condition to assess how the STIP is targeting system preservation investments. In addition, the information compiled through each year's review of investment information to support the annual consistency determination will demonstrate how the Department is implementing the TAMP. With this information, the Department will determine whether adjustments to planned investments in the STIP will be needed to implement the TAMP to help Maryland maintain the NHS infrastructure in a state of good repair.

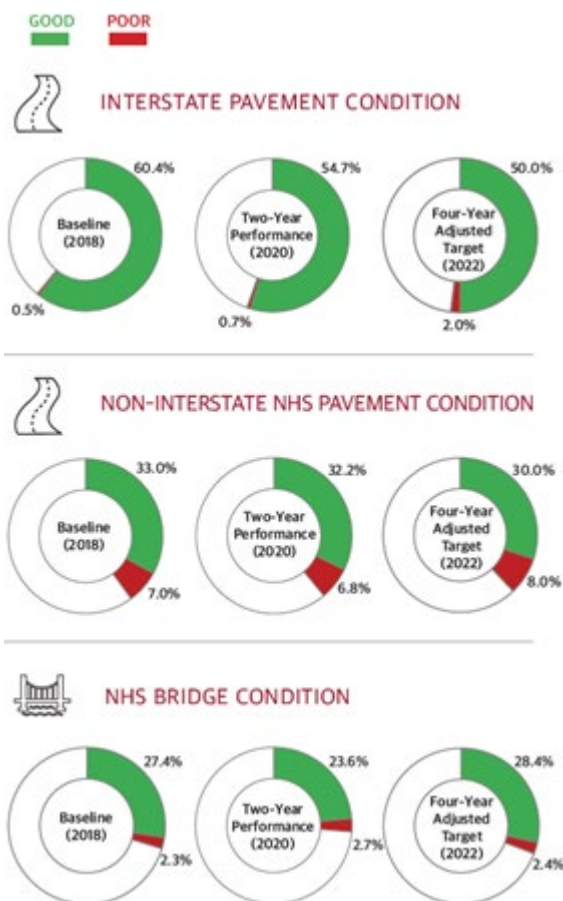


Figure 2. Maryland Infrastructure Condition Performance Targets, October 2020

System Performance, Congestion Management, and Air Quality:

The MDOT SHA Office of Transportation Mobility and Operations (OTMO) is the highway operations element of Maryland's Intelligent Transportation Systems (ITS) program with the mission of improving mobility and safety on Maryland's major highways through the application of ITS technology and interagency teamwork. System reliability and freight mobility performance targets were established using a novel forecasting methodology that relates segment-level roadway capacity and traffic volume to reliability performance to forecast future performance as roadway volumes and capacities change, see Figure 3.

MDOT SHA and the Maryland Transportation Authority (MDTA) addresses mobility and reliability through comprehensive improvement efforts, like projects identified in the State Freight Plan (2017 Update) and strategies in the Transportation Systems Management and Operations Plan, The annual Maryland Mobility Report documents changes in system performance and helps identify areas for

planned system enhancements. Regional and corridor level efforts; pre-planning and planning efforts; and operational and capital activities are targeted with the MPOs and local jurisdictions to improve vehicle and freight movement on the Interstate System.

	BASELINE	TWO-YEAR PERFORMANCE	FOUR-YEAR TARGET
TRAVEL TIME RELIABILITY			
MEASURE AND TARGETS			
	2018	2020	2022
Percent of person-miles traveled on the Interstate System that are reliable	71.4%	69.0%	72.1%
Percent of person-miles traveled on the non-Interstate NHS that are reliable	82.0%	82.8%	82.0%*
			*Adjusted target
FREIGHT MOVEMENT			
MEASURE AND TARGETS			
	2018	2020	2022
Truck travel time reliability index	1.88	1.86	1.88

Figure 3. Maryland System Performance Targets, October 2020

The rate of population and economic growth in Maryland has resulted in increased demands on the state's transportation system. This requires a robust and dynamic multimodal system to provide for and address the unique transportation needs of both the Baltimore and DC-Maryland-Virginia regions. These two regions combine to see some of the most significant congestive conditions in the nation, losing more than 50 hours per year to congestion.

MDOT and urbanized area partners have made the commitment to managing this congestion. In June 2017, the Maryland Department of Transportation's Maryland Transit Administration (MDOT MTA) implemented BaltimoreLink, a complete restructuring of the bus network serving the Baltimore region. The program included implementation of a 5.5-mile network of dedicated lanes on high volume bus corridors. A 2019 before-and-after study shows that since the launch of BaltimoreLink, on-time performance (OTP) has dramatically increased, making transit more attractive. The Guaranteed Ride Home, a free commuter insurance program for commuters who use public and alternative modes of transportation within the Baltimore and Washington D.C. Metropolitan Areas. The program Offers up to 4 free rides home per year when usual transportation options are limited.

MDOT continues to promote Commuter Choice Maryland, which encourages commuters to explore and use alternate means of transportation to and from work, giving them travel choices when convenient to them, such as transit, ridesharing (carpool/vanpool), biking, walking, teleworking, and alternative flexible work schedules. All of these options help to reduce commuter stress, reduce congestion and conserve energy. Transit Apps like the CharmPass Mobile Ticketing app allows riders to pay for MDOT MTA services from a smart phone for all Local Bus, Metro SubwayLink, Light RailLink, MARC Train, and Commuter Bus Services.

Performance targets for applicable urbanized areas were established by work groups with State DOTs and Metropolitan Planning Organization representation.

The on-road mobile source emissions targets, see Figure 4, were developed by the Office of Planning and Capital Programming at the MDOT Secretary's Office by evaluating projected emissions benefits expected from programmed future Congestion Management and Air Quality (CMAQ) Projects.

In accordance with Map-21/FAST Act regulations, the Baltimore Regional Transportation Board (BRTB), National Capital Region Transportation Planning Board (TPB), and the Wilmington Area Planning Council (WILMAPCO) as part of the Delaware Valley Region Planning Commission

transportation management area MPOs are required to draft Congestion Management Process document, bi-annually. The Congestion Management Process (CMP) monitors the transportation network to determine the locations and sources of congestion in the Transportation Management Areas and identifies and implements strategies that alleviate congestion.

All projects in this STIP that will result in a significant increase in carrying capacity for single occupant vehicles are supported by a fully operational congestion management process, in place at each applicable MPO.

AIR QUALITY (CMAQ)			
MEASURE AND TARGETS for Urbanized Areas (as applicable)	2018	2020	2022
Annual hours of peak-hour excessive delay per capita - Baltimore, MD	20.2	20.6	22.6
Annual hours of peak-hour excessive delay per capita - Phila., PA/DE/MD/NJ	16.9	14.6	17.2
Annual hours of peak-hour excessive delay per capita - Wash., DC/MD/VA	23.0	24.5	26.7
MEASURE AND TARGETS for Urbanized Areas (as applicable)	2018	2020	2022
Percent of non-single occupancy vehicle travel - Baltimore, MD	25.1%	25.2%	24.8%
Percent of non-single occupancy vehicle travel - Phila., PA/DE/MD/NJ*	27.9%	28.2%	28.1%
Percent of non-single occupancy vehicle travel - Wash., DC/MD/VA	36.6%	36.6%	37.2%
MEASURE AND TARGETS	2018	2020	2022
On-road mobile source emissions reduction (volatile organic compounds)	13.32	145.48	8.13
On-road mobile source emissions reduction (nitrogen oxides)	140.68	335.66	123.96

*Two and four-year targets for the Philadelphia, PA/DE/MD/NJ urbanized area were established for 2018 and 2020, respectively.

Baseline performance is derived from the latest data available for each measure as of 2018. Baseline data is from 2017 except for percent of non-single occupancy vehicle travel, which uses U.S. Census Bureau American Community Survey data from 2016.

Figure 4. Maryland Air Quality Performance Targets, 2018

Employing performance-based planning and programming strategies to support investment decisions is a long-lasting collaborative effort with key stakeholders to deliver sustainable investment options to achieve desired system performance. The STIP is the project planning budget document that unifies and reflects MDOT's plan with the performance and asset management-based decision-making federally mandated by MAP-21 and the FAST Act.

Transit Asset Management

MDOT MTA is a Tier 1 transit agency, operating and maintaining \$10.7 billion in physical assets to provide transportation services to over 2.2 million people in the State of Maryland. MDOT MTA provides funding (state and federal pass-through), technical support, and assistance to the 23 Locally Operated Transit Systems across the state (20 tier 2 agencies and 3 tier 1 agencies). Every four years, per Federal Transit Administration (FTA) requirement, MDOT MTA updates its Transit Asset Management Plan (TAMP). The MDOT MTA Office of Local Transit Support leads and provides oversight for the tier 2 LOTS and updates a group TAMP on an annual basis, with a major update every four years per FTA requirement. MDOT MTA and LOTS update National Transit Database (NTD) performance targets and actuals on an annual basis.

Per 49 CFR 625 and 630, MDOT MTA is required to measure the performance of four asset categories. These asset categories and associated performance measures provide the performance targets and actuals for each measure required by FTA for submittal through the annual NTD reporting process. Targets are developed using asset information, including condition and programmed procurements for asset renewal or replacement.

FTA-Required Performance Measures by Asset Category (MDOT MTA TAMP, 2019)

Asset Category	Performance Measure
Rolling Stock (Revenue Vehicles)	% of assets at or past their useful life benchmark
Equipment (Non-Revenue Vehicles)	% of assets at or past their useful life benchmark
Facilities (Including Stations)	% of assets rated below condition 3 on TERM scale
Guideway	% of directional route miles under performance restrictions

NTD Performance Targets and Actuals (2018-2021)

Asset Category	NTD Asset Class	ULB	2018 Performance (%)	2019 Target (%)	2019 Actuals (%)	2020 Target (%)	2020 Actuals (%)	2021 Target (%)
Rolling Stock (Revenue Vehicles)	AB – Articulated Bus	12	0	0	0	0	0	0
	AO – Automobile	8	0	4.4	0	100	100	60
	BR – Over-the-road Bus	14	0	0	0	0	0	0
	BU – Bus	12	0	0	16.8	6.8	7.4	4.1
	CU – Cutaway	10	42.36	0	42.4	33.6	20.8	9.4
	HR – Heavy Rail Passenger Car	31	100	88.9	100	100	100	100
	LR – Light Rail Vehicle	31	0	0	0	0	0	0
	MV – Minivan	8	0	0	100	0	N/A	N/A
	RL – Commuter Rail Locomotive	39	13.04	0	0	0	0	0
	RP – Commuter Rail Passenger Coach	39	0	0	0	0	0	0
Equipment (Non-Revenue Vehicles)	Automobiles	8	32.88	47	54	59	80	80
	Trucks and Other Rubber Tire Vehicles	7	49.13	54.4	34	37	34.7	35.4
	Steel Wheel Vehicles	11	27.27	61.1	38	38	44.4	55.5
Facilities	Passenger / Parking Facilities	N/A	55.14	50	44	44	36	34

Asset Category	NTD Asset Class	ULB	2018 Performance (%)	2019 Target (%)	2019 Actuals (%)	2020 Target (%)	2020 Actuals (%)	2021 Target (%)
	Administrative / Maintenance Facilities	N/A	5	50	15	13	36	27
Guideway	CR – Commuter Rail	N/A	43.51	3.5	0	0	0	0
	HR – Heavy Rail	N/A	40.19	3.5	6.7	11	1	3.1
	LR – Light Rail	N/A	38.89	5.8	14.4	15.2	8.8	8.9

LOTS (Tier-2) Performance Measures and Actuals

Twenty Locally Operated Transit Systems (LOTS) are participants in the Maryland LOTS Tier II Group TAMP. The primary services offered by the Tier II LOTS are fixed route bus service and demand response service, typically used by commuters, the elderly, and the disabled to get to work centers, medical centers, shopping centers, and recreational centers.

As illustrated in the below table, the Maryland Tier II LOTS group achieved the targets established in FY20 for all asset classes, except for Buses and Cutaway Buses where adjustments were made in the Useful Life Benchmarks (ULB). The COVID-19 pandemic has impacted the LOTS agencies' ability to generate revenue and maintain ridership levels comparable to FY19. The effects resulting from COVID-19 are unknown, but it is possible this will impact the group's ability to meet its targets. Since the development of the first LOTS Group TAMP in 2018, the group has made progress in improving asset management processes, specifically inventory data collection and condition assessment.

Tier-2 NTD Performance Targets and Actuals (2018-2020)

Asset Category	NTD Asset Class	2018 Performance (%)	2019 Target (%)	2019 Actuals (%)	2020 Target (%)	2020 Actuals (%)
Rolling Stock (Revenue Vehicles)	BU – Bus	23	13	17	12	26
	CU – Cutaway	11	11	17	15	27
	Automobile	27	39	33	33	27
	Van	45	35	30	26	27
	Ferry Boat	0	50	0	0	67

Asset Category	NTD Asset Class	2018 Performance (%)	2019 Target (%)	2019 Actuals (%)	2020 Target (%)	2020 Actuals (%)
Equipment	Non-Revenue Vehicles	20	15	30	38	37
Facilities	Administrative/Maintenance	12	24	4	4	0
	Passenger/Parking	0	25	0	0	0

*Useful life benchmarks were updated in FY20 for vehicle assets

Public Transportation Agency Safety Plans (PTASP)

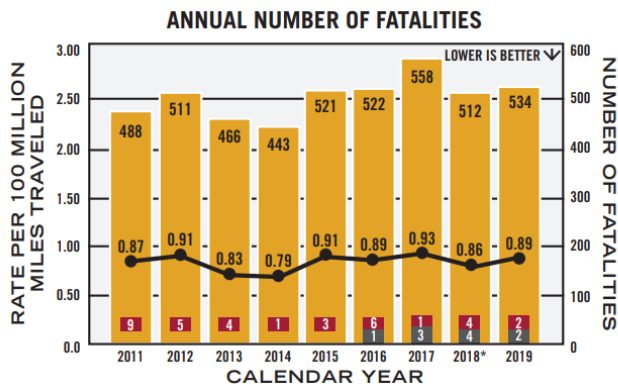
Transit safety targets were developed by MTA working with the LOTS within Maryland. These safety targets were shared with the Maryland Metropolitan Planning Organizations (MPOs). The setting of annual transit safety targets is one of the requirements of the rulemaking for Public Transportation Agency Safety Plans (PTASP). The PTASP rule was published in the Federal Register on July 19, 2018. The effective date of the rule was July 19, 2019, with one year following for implementation. Each applicable provider of public transportation is required to adopt a Public Transportation Agency Safety Plan implementing the principles of Safety Management Systems (SMS). In addition, annual targets for safety performance must be set.

MTA Safety Performance Targets - 2021							
Mode of Transit Service	Fatalities	Fatalities (Per 1m VRM)	Injuries	Injuries (Per 1m VRM)	Safety Events	Safety Events (Per 1m VRM)	System Reliability (MDBF)
Local Bus	3	0.1	148	7.4	90	4.5	6,000
Light Rail	1	0.4	12	4.6	25	9.6	900
Metro Subway	0	0.0	30	7.5	10	2.5	4,200
Mobility	0	0.0	85	4.6	25	1.4	15,000
Commuter Bus	0	0.0	0	0.0	0	0.0	25,000

Annual Attainment Report

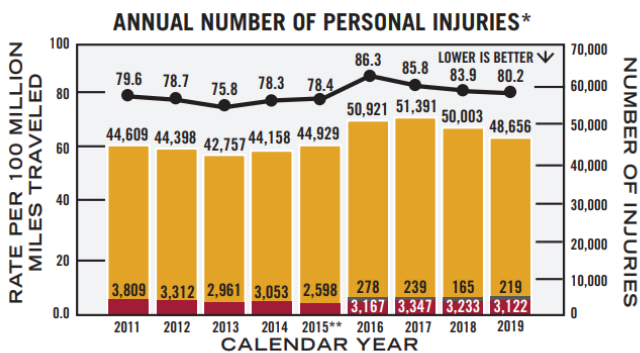
MDOT has been tracking our progress with the Annual Attainment Report long before MAP-21 and the FAST Act. The following are pages from the Annual Attainment Report that reflect how each of the Targets are affected by our investments.

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



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

Target: ≤ 0.69 traffic fatality rate on all roads in Maryland by 12/31/2022, ≤ 4 transit fatalities per year by 12/31/2022, ≤ 394.4 fatalities on all state-owned roads per year by 12/31/2022
 * 2018 data has been revised from previous report.



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

Target: ≤ 4.487 serious personal injury rate on all roads in Maryland by 12/31/2022, ≤ 5.073 serious injury rate of transit passengers on all facilities in Maryland by 2022
 ** 2015-2018 serious personal injuries and personal injury rate has been revised from previous report.
 ** Changes to law enforcement crash data collection has affected serious injury statistical reporting, since the implementation of the Automated Crash Reporting System (ACRS) on January 1, 2015.

Every person, regardless of their age, ability, or mode of transport, should expect a transportation system that gets them where they want to go efficiently and, most importantly, safely. Maryland's long-term goal is zero deaths. To help reach that goal, the State measures trends in traffic injuries and fatalities for bicyclists, pedestrians, and transit passengers to determine the best investment strategies.

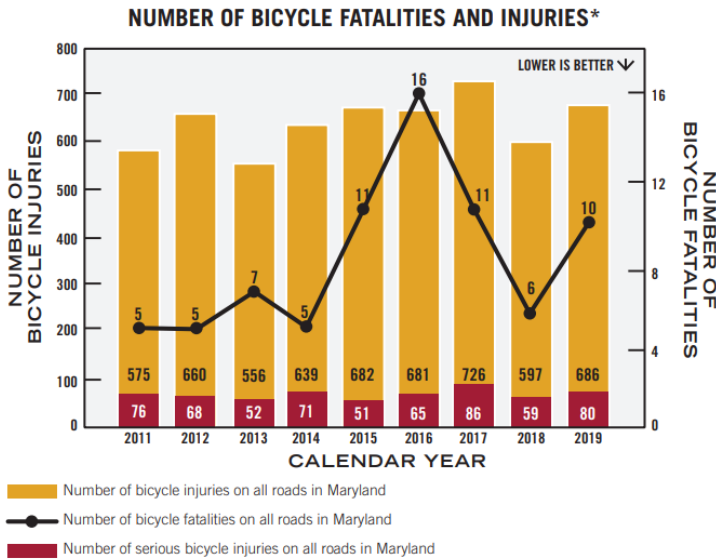
Why Did Performance Change?

- MDOT SHA continued the *Look Up, Look Out* campaign, which urges teen drivers not to text and drive; the campaign won a national award of excellence from the American Association of State Highway Transportation Officials (AASHTO) for their *Look Up, Look Out* video
- MDOT MTA maintained the policies and practices, which make MDOT MTA one of the safest transit systems among the top 12 U.S. transit agencies
- MDOT implemented the *Be the Driver* highway safety campaign to reduce deaths and serious injuries on Maryland's roads
- MDOT MVA supported high visibility enforcement efforts including *Checkpoint Strikeforce*, *Bay to Beach*, and *Click It or Ticket*
- MDOT MVA supported alternatives to impaired driving including the *Be Legendary* campaign, which advocates for alternatives to driving impaired, and the Washington, D.C. metropolitan area *Sober Ride* program
- MDOT maintained a focus on aggressive driving through the MDOT MVA *Aggressive Drivers Are Public Threats (ADAPT)* campaign, and on distracted driving through the *Park the Phone, Before You Drive* initiative

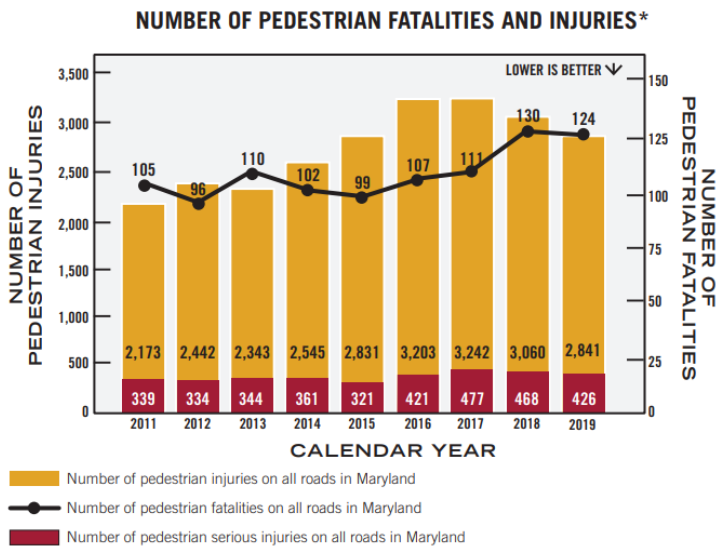
What Are Future Performance Strategies?

- MDOT to begin implementing the updated 2021-2025 SHSP, which will include proven behavioral and infrastructure programs and projects designed to eliminate traffic related fatalities and serious injuries and to reach zero vehicle-related deaths and serious injuries by 2030
- MDOT will continue supporting and working with local jurisdictions when developing local SHSPs that address the traffic safety needs and concerns of their individual areas and communities
- MDOT MTA continues to improve safety for both customers and employees through a Safety Management System (SMS) designed to reduce the risk of injury and property damage by proactively identifying and removing potential hazards in the transportation system
- During COVID-19 the total number of crashes and incidents on Maryland roadways were down but reduced traffic volumes and free flow conditions have resulted in increased crash severity

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



Target: ≤ 6 bicycle fatalities per year (based on a rolling five-year average) by 12/31/2022,
 ≤ 52.3 serious bicycle injuries per year by 12/31/2022 (2020-2024 mid-year average target)
 * 2015-2017 data has been revised from previous report.



Target: ≤ 84 pedestrian fatalities per year by 12/31/2022 (2020-2024 mid-year average target),
 ≤ 305.7 pedestrian serious injuries per year by 12/31/2022 (2020-2024 mid-year average target)
 * 2015-2018 data has been revised from previous report.

Why Did Performance Change?

- MDOT SHA activated two High-Intensity Activated Crosswalk (HAWK) beacons; they flash yellow and then red lights indicating a pedestrian is in the crosswalk, a proven countermeasure that reduces pedestrian/vehicle crashes
- MDOT SHA is implementing the *Be Street Wise – Drive Safe. Walk Safe. Bike Safe.* campaign that targets all road users – drivers, walkers, and riders – and reminds them to follow the rules of the road and all traffic laws
- MDOT SHA continues to use a context-driven approach in the planning and engineering of roadways to make sure there is adequate access and mobility for all users, utilizing the Context Driven – Access and Mobility For All Users guide
- The MDOT MVA and the Baltimore Metropolitan Council (BMC) are implementing the *Look Alive* campaign, which brings together multiple agencies, communities, and law enforcement agencies to raise awareness of pedestrian and bicycle safety
- MDOT is targeting bus stop and transit station area improvements to enhance pedestrian and bicycle infrastructure access

What Are Future Performance Strategies?

- MDOT will implement an updated Complete Streets policy in coordination with MDOT SHA's Context Driven Design guidance
- MDOT SHA is developing a Pedestrian Safety Action Plan that will identify strategies to improve pedestrian safety in the State through a process that includes research, analysis, public input, recommendations, and prioritization
- MDOT SHA is improving methods for identifying maintenance and safety concerns and ensuring appropriate pedestrian and bicycle safety treatments are integrated where appropriate
- MDOT MTA is expanding and improving facilities to accommodate bicycles on transit vehicles, including locally operated transit services, buses, Metro, Light Rail, and commuter rail (MARC) and evaluating the potential for secure bicycle parking at select MARC, Metro SubwayLink, and Light RailLink stations
- MDOT continues to support Transit-Oriented Development (TOD) and related opportunities that leverage multimodal access and attract businesses that prioritize bicycling and walking access
- MDOT is identifying and targeting pedestrian and bicycle safety issues, populations, and locations of concern through the collection, analysis, and evaluation of data and information



IMPROVING GOODS MOVEMENT: FREIGHT ORIGINATING AND TERMINATING IN MARYLAND

FREIGHT ORIGINATING AND TERMINATING IN MARYLAND*

METHOD FOR MOVING FREIGHT	TOTAL VALUE (MILLIONS)	TOTAL TONNAGE (THOUSANDS) SATISFIED
Air	\$7,433	103
Other**	\$60,162	6,405
Pipeline	\$8,005	26,553
Rail	\$13,662	35,503
Truck	\$304,289	203,652
Water	\$1,580	7,019
All Freight	\$395,132	279,235

* Source: U.S. Department of Transportation Freight Analysis Framework (FAF4) Version 4.5.1. that was refactored using 2019 data. To report 2019 data, a 3% annual growth rate was applied. FAF generates estimates based on a base year of data. Therefore, tonnage and values represented are estimates, not exact amounts. The water tonnage data based is for 2019, based on U.S. Army Corps of Engineers reporting.

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



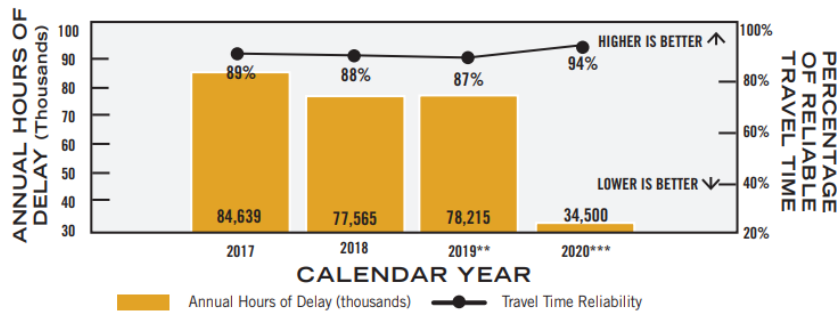
Maryland's location in the mid-Atlantic makes it a crucial node of goods, services, and people linking it to the rest of the nation. Maryland serves as a crossroad for key freight corridors with the I-95, I-81, and I-83 intermodal facilities. The BWI Marshall Airport is one of the nation's top cargo bearing airports with immediate access to major freight corridors, and the Port of Baltimore is one of the closest ports to mid-America markets. The State's main commodities are mining, agriculture, pharmaceuticals, manufacturing, retail trade, and health care, and Maryland's freight network supports their supply chains and those of many other commodities for the eastern seaboard and mid-western states. Facilitating efficient and safe freight movement is one of MDOT's priorities. This was important during the COVID-19 pandemic, when demand for personal protective equipment and health supplies outsized supply and e-commerce sales from quarantined consumers jumped 42% year-over-year in August, reaching \$63.0 billion. In order to maintain the supply chain network to meet demand, the State cooperates with select freight partners to inform its planning and strategic investment efforts. MDOT is in compliance with the requirements of the Fixing America's Surface Transportation (FAST) Act, enabling MDOT to use federal Freight Formula Funds and apply for funding derived from the FAST Act, including Infrastructure for Rebuilding America (INFRA) and Better Utilizing Investments to Leverage Development (BUILD) grants. MDOT has sought, and will continue to seek, opportunities to apply for funding from these sources. Recently, MDOT MPA was awarded a \$10.0 million BUILD Grant to provide critical flood mitigation improvements at the Dundalk Marine Terminal.

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



As the Baltimore and Washington regions continue to grow in population and jobs, more users will continue to add demand and congestion on much of the transportation system that already operates at or over capacity at peak hours. This measure tracks MDOT SHA and MDTA performance in reducing congestion on the State Highway system. MDOT SHA and MDTA continue to prioritize congestion reduction and mobility growth, while many projects, programs, and policies prioritize delay reduction. This measure is an indicator of overall congestion and the number of people/vehicles affected by delay on the Maryland highway network.

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



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

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

** 2019 data has been revised from previous report.

*** 2020 data is preliminary and subject to change.

Why Did Performance Change?

- The total number of crashes and incidents are down but reduced traffic volumes and free flow conditions due to COVID-19 have resulted in increased crash severity
- In 2020, the lower level of traffic and less congestion, due to the COVID-19 pandemic, led to a decrease in traffic volume and higher reliability of truck travel

What Are Future Performance Strategies?

- As Maryland recovers from COVID-19, data and performance driven capital and operational technology investments will be required as reliability trends change
- MDOT will continue to advance the Traffic Relief Plan (TRP), including furthering design for the I-695 from I-70 to MD 43 TSMO project
- \$125.0 million in federal funds have been approved for the Howard Street Tunnel in Baltimore, which will ease truck traffic, boost the economy, and create jobs

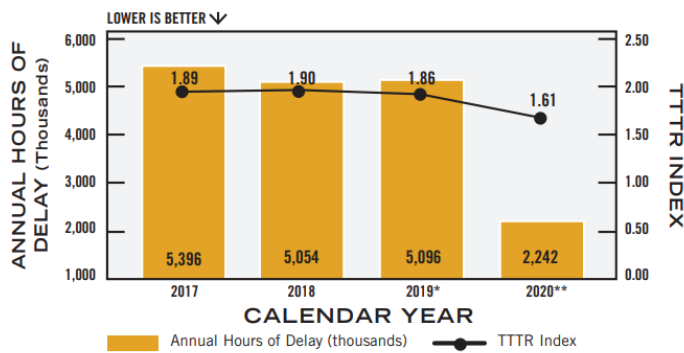
ANNUAL HOURS OF DELAY FOR TRUCKS AND TRUCK TRAVEL TIME RELIABILITY INDEX



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

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

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



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

* 2019 data has been revised from previous report.

** 2020 data is preliminary and subject to change.

Why Did Performance Change?

- In 2020, the COVID-19 pandemic resulted in significant decrease in traffic volumes on Maryland highways; in Spring of 2020, traffic volumes were down by 50% and in Summer of 2020, traffic volumes were down by about 20%, compared to 2019 volumes
- In 2020, also due to COVID-19, the annual cost of congestion decreased 50% from 2019 to 2020
- Truck vehicle miles traveled (VMT) has been down by 20% compared to 2019 conditions, these huge reductions in travel demand have resulted in fewer vehicles and less congestion compared to prior years
- In June 2020, MDOT cut the ribbon on the new I-270/Watkins Mills Interchange in Montgomery County, MD 2/4 widening in Calvert County, and in August 2020 MDOT cut the ribbon on the MD 180 widening/bridge project in Frederick County

What Are Future Performance Strategies?

- Continue active monitoring of transportation system, incident detection, and clearance and deploy road weather management strategies to restore capacity on Maryland highways
- Modernize transportation infrastructure by incorporating Intelligent Transportation System (ITS) technology and Transportation Systems Management and Operations (TSMO) strategies,

PERCENTAGE OF THE MDOT SHA NETWORK IN OVERALL PREFERRED MAINTENANCE CONDITION



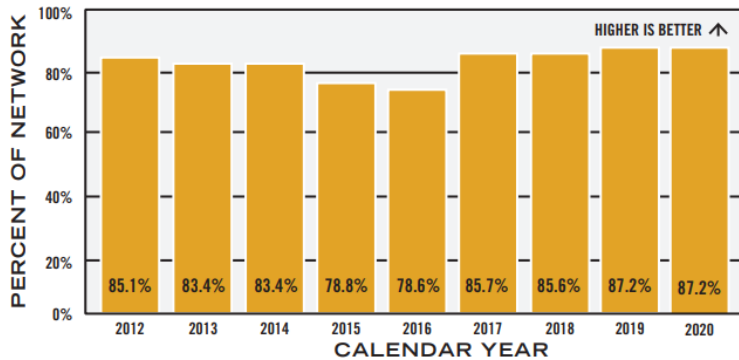
The overall condition of the network is indicative of the positive effect that asset management strategies have on existing highways. Effective asset management strategies ensure continued usability, quality, and safety along Maryland’s roadways.

Why Did Performance Change?

- MDOT SHA utilized the 50% drop in traffic volumes due to COVID-19 to extend work hours, while ensuring MDOT employees were safe, appropriately physically distanced, and using personal protective equipment

What Are Future Performance Strategies?

- Due to a reduction in funds, MDOT SHA will see a reduction of 7% of its operating budget (\$900.0 million in capital), which may impact the percentage of the network in preferred maintenance condition in future years
- MDOT will continue to prioritize state of good repair and system preservation efforts, through the asset management program



Target: 85% Annually

OVERALL ACCEPTABLE PAVEMENT CONDITION*



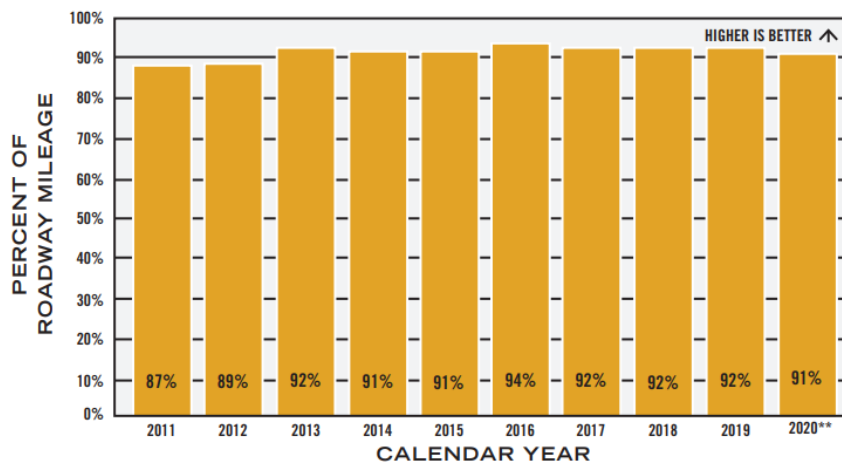
Overall pavement condition is based on remaining service life, which is a scale of 0 to 50 years to describe pavement condition. Ride quality, functional cracking, structural cracking, and rutting data are collected utilizing Automated Road Analyzer (ARAN) vehicles; friction data is collected using skid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

Why Did Performance Change?

- MDOT SHA continued focusing on improvements in roadways with deficient conditions and is preparing for future federal rulings on nationwide pavement performance measures introduced through the Fixing America’s Surface Transportation (FAST) Act legislation
- MDOT SHA increased use of non-traditional pavement preservation treatments, where appropriate, to extend the service life of MDOT SHA roadways at the lowest possible cost; due to innovative pavement materials, maintenance, and repairs, cracking (a significant cost driver) has been reduced, decreasing maintenance costs and increasing surface quality

What Are Future Performance Strategies?

- Increase the use of more durable materials and investigate alternative pavement treatments to extend the pavement life
- Continue to implement the Federal Highway Administration (FHWA) and MDOT SHA Pavement Preservation Program to strategically utilize system preservation activities
- Continue to focus on higher-priority prevention and maintenance and monitor high demand roadway degradation



Target: 90% Annually

* 2012-2019 data is updated based on a new friction approach and has been revised from previous report.

** 2020 data is preliminary and subject to change.



NUMBER OF BRIDGES AND PERCENT THAT ARE IN POOR CONDITION



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

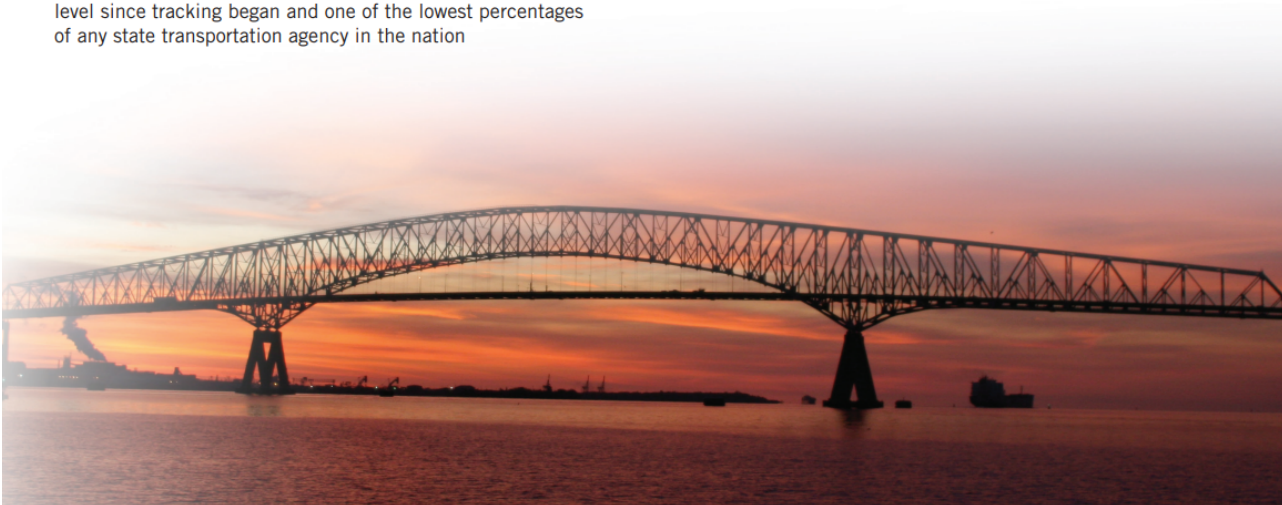
CALENDAR YEAR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of MDTA Bridges in Poor Condition	5	4	1	1	1	1	1	1	1	1
Number of MDOT SHA Bridges in Poor Condition	106	97	87	81	69	69	67	62	52	36
Total Number of Bridges in Poor Condition	111	101	88	82	70	70	68	63	53	37
Percent of Bridges in Poor Condition	3.9%	3.5%	3.0%	2.8%	2.4%	2.4%	2.4%	2.2%	1.8%	1.3%

Why Did Performance Change?

- MDOT SHA continued its bridge rehabilitation and preservation program in order to minimize the number of bridges that would have deteriorated to a poor rating without rehabilitation
- MDOT SHA opened a \$13.0 million MD 355 bridge over CSX in the Monocacy National Battlefield in partnership with the National Park Service and a new \$19.0 million MD 180 bridge over US 15 and US 340, part of a collaboration between the County, City, State, and private sector, and a package of improvements to the Solarex Court intersection
- MDTA completed the Westbound Bay Bridge right lane deck rehabilitation ahead of schedule in April 2020, installing a new tolling gantry and implementing full-time all-electronic (cashless) tolling (AET)
- MDTA also advanced major bridge projects including the replacement of the I-895 Bridge in Baltimore and Nice/Middleton Bridge in Southern Maryland
- MDOT recorded 36 poor rated MDOT SHA bridges, the lowest level since tracking began and one of the lowest percentages of any state transportation agency in the nation

What Are Future Performance Strategies?

- Budget constraints due to COVID-19 will impact future bridge work; however, MDOT remains dedicated to ensuring the safety of bridge assets, as well as the overall system state of good repair
- MDTA Nice/Middleton Bridge Replacement funding is reduced in the FY 2021-FY 2026 CTP; however, the project completed more work in FY 2020 than originally forecasted
- Despite funding cuts, select MDTA bridge projects are preserved including the Bay Crossing Tier I NEPA Study and ongoing Bay Bridge future work



TRANSIT ROLLING STOCK WITHIN USEFUL LIFE BENCHMARK



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

TRANSIT VEHICLES	2020 PERCENT OF VEHICLE STOCK WITHIN USEFUL LIFE	TARGETS
Baltimore Metro	0%*	11%
MARC	100%	100%
Light Rail	100%	100%
Paratransit	71%	99%
Local Bus	100%	98%

* 78 new rail cars will be delivered between January 2022 and January 2023.

Why Did Performance Change?

- MDOT MTA purchased 140 clean diesel buses in 2019 and committed to continuing to replace vehicle stock with clean diesel buses through a five-year replacement contract
- 100 MobilityLink paratransit vehicles were replaced in 2019 and another 100 were replaced in 2020
- MDOT MTA invested in fleet modernization across all modes to provide safe and reliable operations, including \$54.0 million to overhaul 63 MARC III passenger coaches; seven overhauled coaches are currently in service
- MDOT MTA has a Transit Asset Management Plan, updated in 2019, and a group for locally operated transit systems
- MDOT MTA maintains an Asset Portfolio, condition data, and utilizes FTA's Transit Economic Requirements Model Lite (TERM Lite) analysis to better track asset needs and MDOT MTA's state of good repair backlog
- After monitoring the guideway performance for the past 18 months, MDOT MTA now has a dashboard that streamlines the data flow and has a user-friendly interface
- Began visually assessing the condition of MDOT MTA and Locally Operated Transit System (LOTS) facilities; tasks are underway to assess the condition of each MDOT MTA owned facility
- Completed an asset management pilot at the Eastern Bus Division, where MDOT MTA conducted field inventory verification, visual and functional condition analysis, asset hierarchy adjustments, and established a framework for criticality and risk management
- Completed an annual update on inventory and TERM Analysis, reflecting changes in the asset base over the past year, and improving the asset details
- Initiated a warranty management program at Eastern Bus Garage; improving warranty management was one of the key objectives highlighted in the MDOT MTA Transit Asset Management Plan

What Are Future Performance Strategies?

- MDOT MTA continues with replacement of 53-vehicle light rail vehicle fleet overhaul, replacement of all fleet vehicles is scheduled to be completed in 2022
- 83% of MobilityLink paratransit vehicles will be within useful life based on current procurements; MDOT MTA plans to retire and replace more cutaways and sedans in FY 2022 and sedans will be replaced with gas/electric hybrid SUVs
- Continue overhaul of 63 MARC III passenger coaches, set to be complete in 2021
- Continue complying with the new Federal Transit Administration (FTA) rule requiring asset management reporting via the National Transit Database (NTD)

MDOT MTA AND WMATA RIDERSHIP

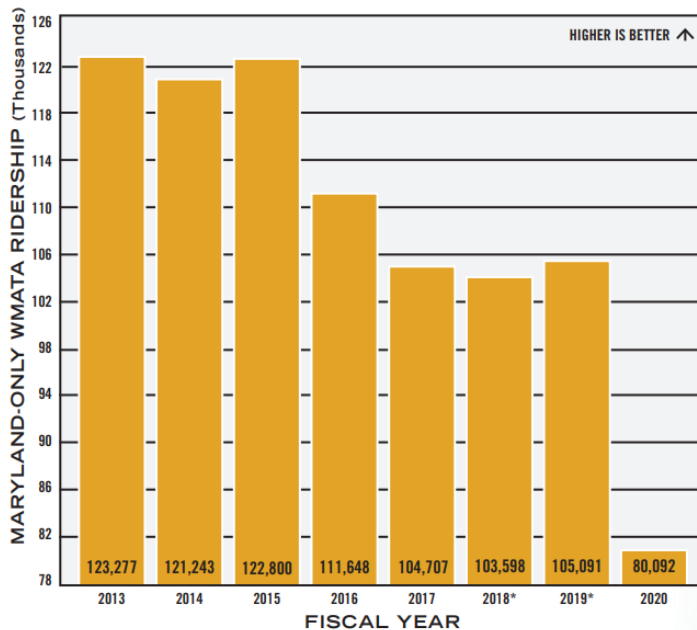
MDOT MTA and local transit partners provide transit options for residents and visitors throughout the State. MDOT also continues to strategically invest in its transportation infrastructure as shown in the FY 2021-FY 2026 CTP. MDOT MTA works to improve transit service and access with investments in fleet modernization, including a light rail fleet overhaul, as well as replacement of 63 MARC III passenger coaches. Continued construction of the 16-mile Purple Line light rail project also remains a high priority for MDOT.

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

FISCAL YEAR	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020*
TRANSIT RIDERSHIP—MDOT MTA DIRECT-OPERATED SERVICES (THOUSANDS)										
LOCAL BUS	78,390	79,535	80,071	75,780	78,697	75,619	69,587	63,730	63,989	55,342
BALTIMORE METRO	14,588	15,364	15,208	14,632	13,901	12,222	10,960	8,738	7,275	5,076
LIGHT RAIL	8,655	8,540	8,647	8,106	7,657	7,431	7,414	7,401	6,966	4,649
TRANSIT RIDERSHIP—CONTRACTED SERVICES AND LOTS (THOUSANDS)										
MARC	8,233	8,452	9,062	9,168	9,246	8,962	9,185	9,322	9,191	6,677
CONTRACTED COMMUTER BUS	4,097	4,290	4,187	4,017	4,034	3,928	3,866	3,841	3,623	2,619
MOBILITY PARATRANSIT & TAXI ACCESS	1,660	1,900	2,084	2,289	2,495	2,556	2,746	2,941	2,974	2,492
LOCAL OPERATING TRANSIT SYSTEM (LOTS)	40,243	40,908	40,281	42,500	39,441	38,476	39,818	41,096	32,866	27,543

* 2020 data is preliminary and subject to change.

MARYLAND-ONLY WMATA ANNUAL RIDERSHIP (THOUSANDS)



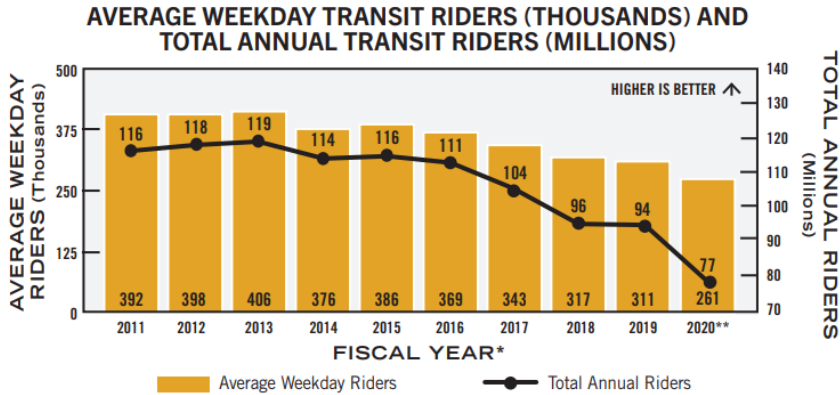
* 2018 and 2019 data have been updated from the previous report.



MDOT MTA TRANSIT RIDERSHIP



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



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

** 2020 data is preliminary and subject to change.

Why Did Performance Change?

- COVID-19 dramatically reduced travel, with transit being particularly adversely affected; MDOT MTA continues to focus on providing safe, efficient, and reliable transit service
- MDOT MTA adapted to the COVID-19 pandemic by taking appropriate health measures, including disinfecting vehicles and retrofitting buses or train cars with plastic seats and air ionizers
- MDOT MTA promoted two mobile applications for smart phones: the CharmPass Mobile Ticketing application, which allows riders to pay for services from their phone, and the Transit app, which provides real-time tracking
- MDOT MTA modified service based on ridership declines from COVID-19, focusing those cuts on the lesser utilized routes so the frequently utilized routes maintain strong ridership and level of service

What Are Future Performance Strategies?

- MDOT MTA continues replacement of 53-light rail vehicle fleet overhaul, set to be completed in 2022
- MDOT MTA continues overhaul of 63 MARC III passenger coaches, set to be completed in 2021
- MDOT MTA completed a Regional Transit Plan for Central Maryland, providing a 25-year vision of mobility and defining public transportation goals for Central Maryland and began working on a 50-year Statewide Transit Plan
- Coordinate with local transit operators to discuss the availability of local matching funds and to apply Coronavirus Aid, Relief, and Economic Security (CARES) Act funds and availability of local matching funds to support critical local transit needs



PERCENT OF TRANSIT SERVICE PROVIDED ON TIME



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

MODE*	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	LONG-TERM TARGET
Local Bus	85%	83%	82%	81%	81%	85%	77%	68%	69%	72%	85%
Light Rail	98%	96%	97%	96%	97%	98%	96%	94%	95%	93%	95%
Baltimore Metro	97%	96%	97%	96%	95%	96%	96%	94%	94%	97%	95%
MARC	89%	93%	93%	92%	92%	94%	91%	91%	87%	92%	93%
Mobility Paratransit & Taxi Access	89%	90%	89%	91%	88%	92%	93%	93%	86%	91%	95%

* Besides Local Bus, 2020 data is estimated and subject to change.

Why Did Performance Change?

- Local Bus OTP was 79.4% in February 2020, up from 59.5% prior to launch of BaltimoreLink; every month between November 2019 and February 2020 was an agency record-breaker
- MDOT MTA is completing scheduled major track maintenance activities during periods of low ridership, minimizing the effect of this work on riders
- Light Rail experienced several incidents of downed trees from storms and several accidents involving Light Rail vehicles that affected OTP

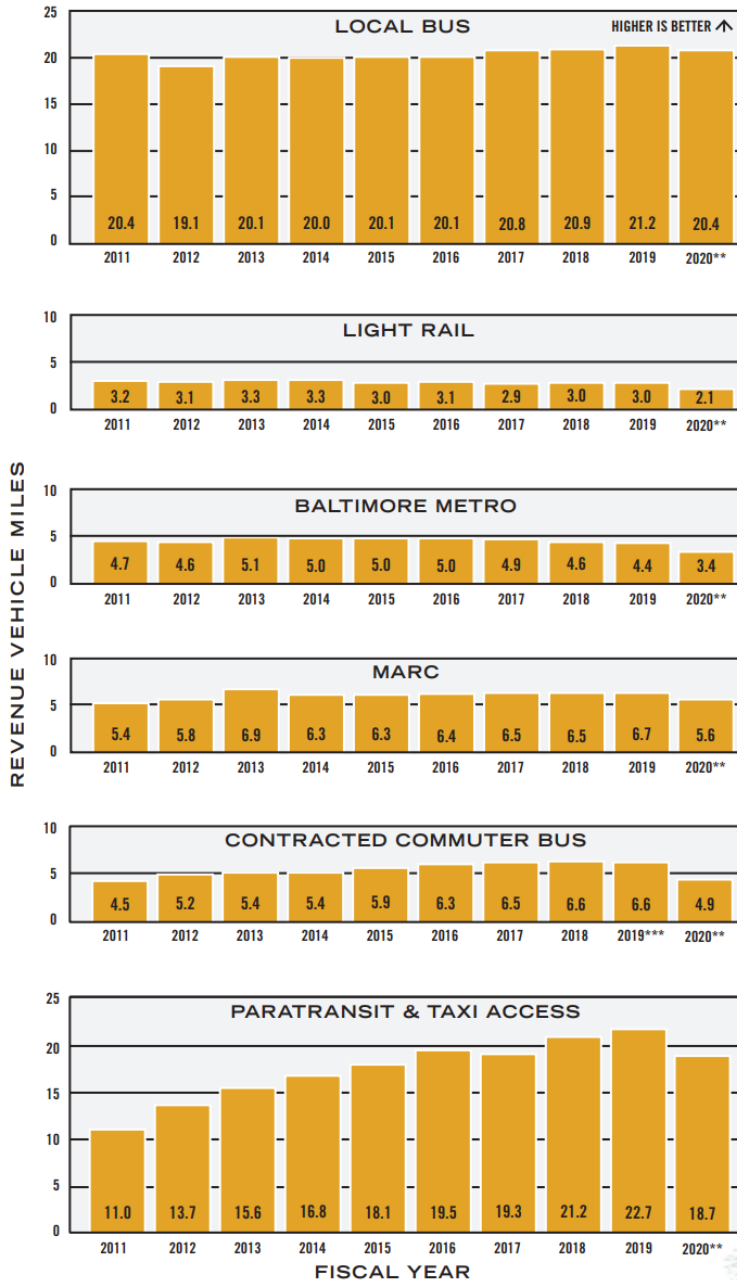
What Are Future Performance Strategies?

- Replace vehicles and complete preventive maintenance on time to support reliable service
- Continue to improve the accuracy of the real-time passenger information on MDOT MTA's transit services to improve customer experience
- MDOT MTA will continue using new data to maximize schedule performance and reliability
- Implement transit priority infrastructure including dedicated bus lanes and transit signal priority that improve bus reliability

ANNUAL REVENUE VEHICLE MILES OF TRANSIT SERVICE PROVIDED*



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



Why Did Performance Change?

- In FY 2020, as a result of the COVID-19 pandemic, MDOT MTA experienced a reduction in revenue vehicle miles as service was reduced
- Supplemental bus service to select Baltimore City Public Schools was established in Fall 2019, increasing service and vehicle revenue miles
- Baltimore Metro SubwayLink continued to perform scheduled track repair and maintenance, having an impact on the revenue miles but little impact on the riding public
- The second week of April, during the peak of the stay-at-home order, travel was down at an all-time low while the first week of September shows the latest return trends: MARC - was down 97% vs. 91% down in September; Contracted Commuter Bus - was down 95% vs. 88% down in September; Local Bus - was down 61% vs. 51% down in September
- During the pandemic, MDOT MTA continued to operate Core Bus and MobilityLink service and to prioritize transit service for riders, especially transit dependent households and essential workers; Core Bus saw less decline than other transit modes

What Are Future Performance Strategies?

- Throughout the COVID-19 pandemic, MDOT MTA focused on cleaning, awareness, and overall safety of employees and the public, and is repositioning services to focus on the core mission

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

** 2020 data is preliminary, subject to change.

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

