Goal Ensure a Safe, Secure, and Resilient Transportation System

OBJECTIVES:

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

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

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

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

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

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

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

To prevent fatalities and avoid serious injuries, MDOT conducts safe driving programs that focus on distracted and impaired driving, driver education, ignition interlocks to prevent impaired driving, motorcycle safety, safety belts, and child seats. Maryland's *Be the Driver* campaign continues to grab the attention of motorists by reminding them to stay focused; be sober; share the road with pedestrians, bicyclists, and motorcyclists; always buckle up; and to slow down. The messages are particularly relevant given the increase in fatalities during COVID-19. It is a plea for people to take personal responsibility for their safety and the safety of others on the roadway.

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

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

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

Maintaining the safety and security of the transportation system is a critical mission for MDOT, which works in cooperation with employees, customers, and partners to protect the health and safety of individuals that work for the agency, those who use the system, and people affected by agency projects and activities. MDOT improves safety performance through risk management, leadership, and engaging customers in the solutions. These safety and security efforts are important to helping ensure that MDOT maintains the highest quality cleanliness standards to keep customers and employees safe and healthy.

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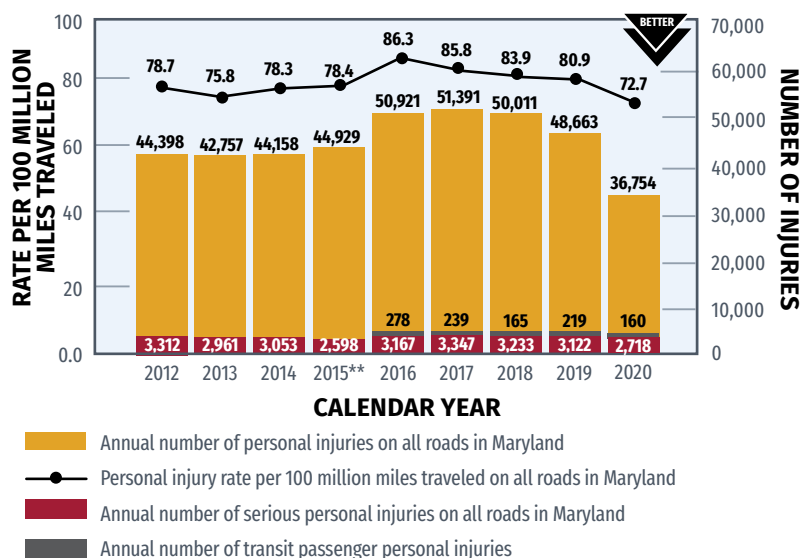Reduce the number of lives lost and injuries sustained on Maryland's transportation system

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

FACING CHALLENGES

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

ANNUAL NUMBER OF FATALITIES

Legend:
- Annual number of traffic fatalities on all roads in Maryland (including MDTA-owned roads)
- Traffic fatality rate per 100 million miles traveled on all roads in Maryland
- Annual number of traffic fatalities on all MDTA-owned roads, a subset of total annual number of traffic fatalities on all roads in Maryland
- Annual number of transit passenger fatalities
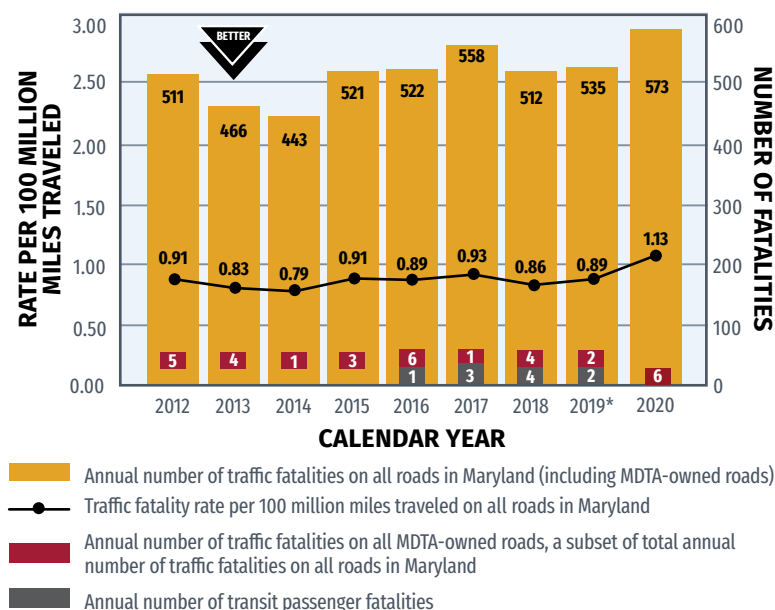
Target: ≤ 0.81 traffic fatality rate on all roads in Maryland by 12/31/2022, ≤ 4 transit fatalities per year by 12/31/2022, ≤ 476.6 fatalities on all state-owned roads per year by 12/31/2022

* 2019 data has been revised from previous report.

ANNUAL NUMBER OF PERSONAL INJURIES*

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

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

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

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

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

WHY DID PERFORMANCE CHANGE?
- In 2020, Maryland saw a significant reduction in VMT due to the pandemic with corresponding reductions in overall crashes and injuries suffered in those crashes
- While the number of overall crashes and serious injuries decreased in 2020, crashes were more severe, contributing to the rise in roadway fatalities
- Less vehicles on the roadways led to increased speeding, impaired driving, unrestrained occupants, and a continuing disturbing trend of increases in non-motorist deaths
- MDOT MVA's Maryland Highway Safety Office (MHSO) received data from law enforcement reporting speeding violations in excess of 100 miles per hour and increases in violations for drivers traveling 20 miles per hour and more over the speed limit, as well as many crashes that were attributed to excessive speed
- Research from the National Highway Traffic Safety Administration (NHTSA) confirmed that driving patterns and behaviors changed significantly and many of those who remained on the road engaged in more risky behavior
- Fatal crashes, attributed to speed, increased by 30% over a six-month period compared to the prior five-year average during the same time-period
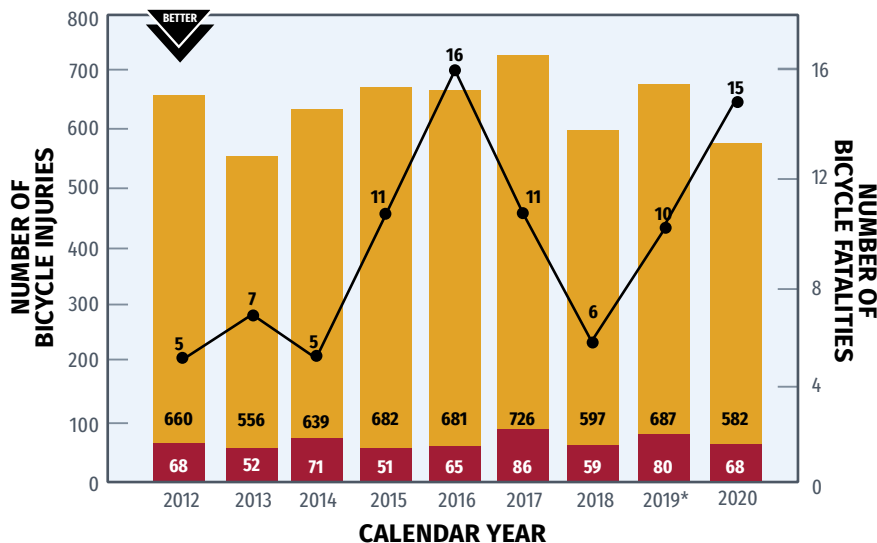
WHAT ARE FUTURE PERFORMANCE STRATEGIES?
- In January 2021, MDOT announced implementation of the 2021-2025 SHSP, the latest update of Maryland's five-year plan to identify strategies and actions to eliminate fatalities on state roadways
- The SHSP uses the 4 E's – Enforcement, Engineering, Education, and Emergency Medical Services – as the foundation of lifesaving efforts to address major areas of traffic safety: aggressive and speed-related driving, impaired and distracted driving, highway infrastructure, seat belt use, and pedestrian and bicyclist safety
- The implementation of the statewide SHSP coincided with the development and implementation of local plans, with many jurisdictions modeling their plan after the Maryland plan, recognizing that many crashes occur on locally maintained roads and require a site-specific approach that either is independent of, or in collaboration with, state-maintained road improvement efforts
- MHSO recently launched an overarching highway safety campaign targeting areas of concern and focusing on safe driving behaviors; eliminating motor vehicle crashes and serious injuries on Maryland roadways starts with every traveler following a few simple steps to *Be the Driver* who saves lives
- MDOT MTA will continue working collaboratively with other agencies and jurisdictions to address on-board and off-board safety and security concerns

NUMBER OF BICYCLE FATALITIES AND INJURIES

BETTER ▽

CALENDAR YEAR	2012	2013	2014	2015	2016	2017	2018	2019*	2020
Number of bicycle injuries	660	556	639	682	681	726	597	687	582
Number of serious bicycle injuries	68	52	71	51	65	86	59	80	68
Number of bicycle fatalities	5	7	5	11	16	11	6	10	15

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

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

* 2019 data has been revised from previous report.

NUMBER OF PEDESTRIAN FATALITIES AND INJURIES*

BETTER ▽

CALENDAR YEAR	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of pedestrian injuries	2,442	2,343	2,545	2,831	3,203	3,242	3,062	2,842	2,096
Number of pedestrian serious injuries	334	344	361	321	421	477	468	426	360
Number of pedestrian fatalities	96	110	102	99	107	111	130	124	131

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

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

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

WHY DID PERFORMANCE CHANGE?

- Mirroring national trends, Maryland has steadily experienced increases in fatalities and serious injuries among its most vulnerable road users–non-motorists (pedestrians and bicyclists), with one out of every four fatalities in Maryland now being a non-motorist

- While Maryland does not have an exposure measure to precisely determine an increase in road use by pedestrians and bicyclists, Maryland has increased pedestrian and bicyclist facilities year after year and is experiencing similar trends in changes in transportation mode use seen nationally

- With roads largely designed for vehicles moving at high rates of speed, communities with less access to a car or truck are at increased risks for death and injury

- State and local transportation and safety professionals and advocates have steadily shifted away from age-old philosophies regarding motor vehicle and non-motorist mobility and safety, evidenced by the adoption of Complete Street policies and plans, such as in Baltimore City

WHAT ARE FUTURE PERFORMANCE STRATEGIES?

- MDOT SHA recently launched a new, interactive web portal for its updated Context Driven Guide, an innovative planning and design resource that offers guidelines to create safe and effective transportation systems for all users – motorists, transit users, pedestrians, bicyclists, and those with mobility challenges; the portal also tracks actions being taken to tackle design issues

- MDOT SHA is developing a Pedestrian Safety Action Plan that will help them identify and prioritize key locations for targeted safety improvements, set goals and objectives, and take action

- Using the tools and processes outlined in this guide, MDOT SHA is striking a balance between land-use, the community setting, and the mobility needs of local and regional travelers; the guide is also used to help MDOT SHA address connectivity challenges throughout Maryland

- The 2021-2025 SHSP has pedestrians and bicyclists as a key emphasis area; the plan outlines six strategies to improve safety for pedestrians and bicyclists, including using data to identify issues, improving enforcement of laws that promote safe behaviors, building infrastructure that includes proven safety countermeasures, supporting development of new policies and laws, promoting a systemic safety culture through outreach initiatives, and supporting effective engineering and technological approaches to preventing collisions with pedestrians and bicyclists
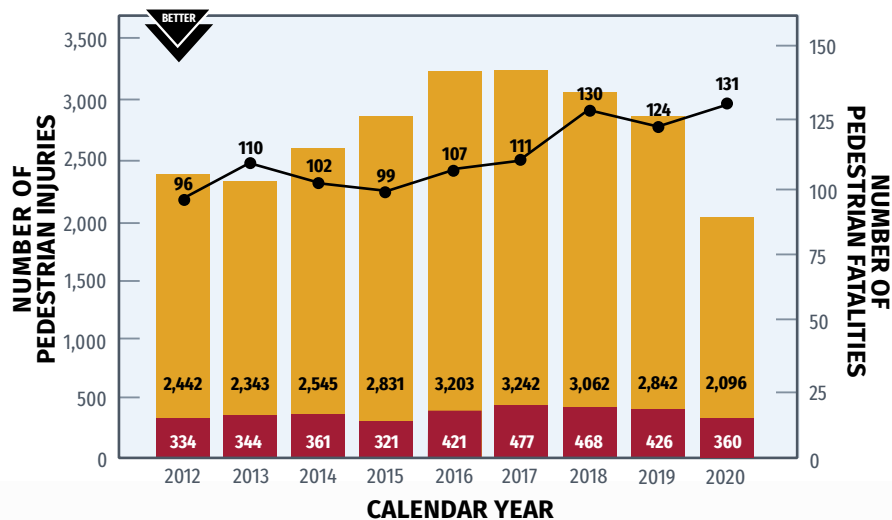
OBJECTIVE:
Provide for the secure movement of people, goods, and data

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

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

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

MAKING PROGRESS

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

WHY DID PERFORMANCE CHANGE?
- MDOT MTA joined the American Public Transit Association (APTA) National Safety Pledge to keep operators and passengers safe through the pandemic
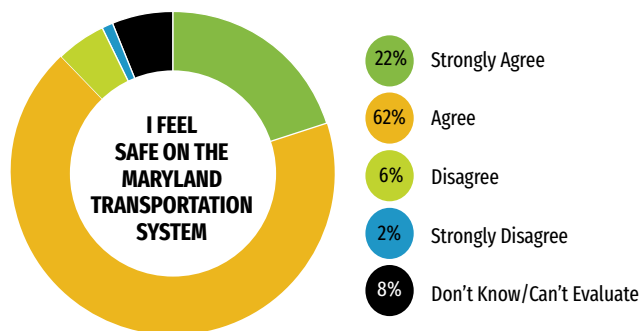
WHAT ARE FUTURE PERFORMANCE STRATEGIES?
- MDOT MTA will remain focused on adhering to constantly evolving best practices and continue to address safety concerns, public perception, and opportunities to improve safety and security for operators and passengers

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

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

MDOT SURVEY QUESTION

I FEEL SAFE ON THE MARYLAND TRANSPORTATION SYSTEM

- 22% Strongly Agree
- 62% Agree
- 6% Disagree
- 2% Strongly Disagree
- 8% Don't Know/Can't Evaluate

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

PREVENTABLE INCIDENTS PER 100,000 VEHICLE MILES

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

BETTER ▽

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

* 2019 data has been revised from previous report.

WHY DID PERFORMANCE CHANGE?
- MDOT MTA works with operators to collect their safety observations and analyze safety trends including near-misses to improve safety

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

OBJECTIVE:

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

Enhancing Maryland's transportation system's resilience involves preparing for, adapting to, withstanding, and rapidly recovering from all threats whether environmental, human-caused, or technological. MDOT is working on reducing its vulnerabilities and improving its response and recovery times and processes. Personnel at the State Operations and Emergency Operations centers track all incidents and dispatch emergency responders to deal with the situation.
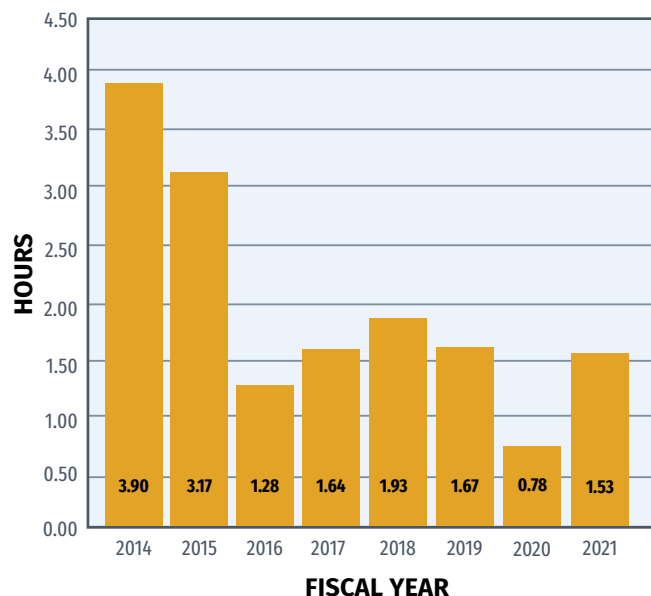
Despite the challenges of operating a system during a health crisis, MDOT and its employees have maintained all essential services and managed to prevent incidents and crashes before they happen. Appropriate MDOT personnel continue to be trained under the National Incident Management System (NIMS) and the Incident Command System (ICS), which provide an integrated approach to incident, crisis, and consequence management. According to MDTA, the average response time for messaging on unplanned events or crashes, excluding anomalies, was 3.25 minutes.

OBJECTIVE:

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

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

TARGET ACHIEVED

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

HOURS

FISCAL YEAR	Hours
2014	3.90
2015	3.17
2016	1.28
2017	1.64
2018	1.93
2019	1.67
2020	0.78
2021	1.53

FISCAL YEAR

Target: 4 hours or fewer to regain bare pavement

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

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