



2020

YEAR IN REVIEW

INNOVATION

MODERNIZATION

COMMUNICATION

CUSTOMER EXPERIENCE

MDOT
MARYLAND DEPARTMENT
OF TRANSPORTATION

STATE HIGHWAY
ADMINISTRATION

MESSAGE FROM THE GOVERNOR

In my recent role as Chairman of the National Governors Association, I chose to focus our efforts nationwide on transportation infrastructure in an initiative called “Infrastructure: Foundation for Success.” Little did I know at the time that a worldwide pandemic would soon test our critical supply chain in an emergency.

The plan we put forward provided a blueprint for our efforts here in Maryland, where we made significant gains in making our roads more safe, efficient and functional despite the challenges facing our citizens and our workforce. Our latest six-year Consolidated Transportation Program (CTP) allocates \$13.4 billion toward meeting our goal, including \$6.7 billion for MDOT SHA’s budget to fund roadway improvements.

As we address the challenges we face today, we are planning for the opportunities the future will bring. Our Maryland Strong Roadmap to Recovery is designed to get Maryland moving again and facilitating economic opportunity in a safe manner. As the economy recovers, so will the Transportation Trust Fund, as more people commute to their jobs, purchase vehicles and travel.

We are not wavering from our commitment to tackling big challenges in our Traffic Relief Plan, including our historic effort to add capacity to I-270 and I-495 through a public-private partnership, which will deliver \$9-11 billion in improvements to our most critical arteries linking Maryland, Washington, D.C. and Virginia. Under a landmark agreement with Virginia, we are going to share the cost to rebuild and significantly increase capacity on the American Legion Bridge.

Our administration continues to deliver transportation projects and innovative solutions, which are improving our roads, bridges, transit systems, airports and the Port of Baltimore. The Maryland Department of Transportation (MDOT) is making the most of every dollar and is delivering once-in-a-generation projects on an accelerated timeline. Our balanced program of transportation investments has included key projects and initiatives like electronic tolling, the CHARM Pass app, the Howard Street Tunnel, the Purple Line and the Chesapeake Bay Bridge.

The COVID-19 health emergency has been a shock to our transportation system, and I’m proud to see the men and women in transportation stepping up to the challenge with real success. There can be no doubt that Maryland is resilient, hopeful and committed to our goals of fortifying our supply chain, keeping our roadways safe and building a stronger future.



Larry Hogan
Governor

MESSAGE FROM THE SECRETARY

While I certainly never envisioned serving as Transportation Secretary during a national health crisis, this experience has only reiterated for me the crucial role transportation plays in all our lives.

Our transportation network has been critical to keeping the supply chain moving and getting essential employees to work safely and efficiently during the pandemic. From day one, our goal was to protect our employees and our customers. We continue to work hard to achieve those goals and keep people moving and safe across our transportation system.

Highway traffic volumes were down 52 percent comparing the second week of April 2020 to 2019. This created substantial revenue decreases from key sources, such as the gasoline tax and titling fees, amounting to a \$1.4 billion loss. MDOT SHA responded with cuts of \$900 million to its capital budget and 7 percent to its operating budget.

Despite the challenges of operating during a pandemic, more than 10,000 MDOT employees and our private sector partners continued to deliver outstanding customer service, provide essential services and achieve results in every business unit across the department. Among our biggest accomplishments were the completion of the Bay Bridge westbound deck rehabilitation, virtually cutting the ribbon on the new I-270/Watkins Mills Interchange in Montgomery County, widening MD 2/4 widening in Calvert County, and the MD 180 widening/bridge project in Frederick County.

While we have achieved tremendously with low traffic on the roads, we are seeing the numbers starting to come back. We are committed to ensuring that our infrastructure is maintained and improved for the citizens of Maryland.

Our goals have not changed. We are delivering big infrastructure projects that solve our congestion challenges statewide in a way that incorporates technology, flexibility, and capacity for future growth. We are prioritizing state of good repair and system preservation efforts to build intelligence across our assets. We are providing safe and accessible mobility choices for all users, including pedestrians and bicyclists, that consider the interplay of land use and transportation. Most importantly, we are establishing a sustainable, customer-focused transportation vision that incorporates roadway, transit, freight, air and port infrastructure.

By working together as partners at every level of government, from the municipalities and counties to the federal government, we can keep our workforce moving and safe as we rebuild Maryland’s economy.



Gregory Slater
Secretary

MESSAGE FROM THE ADMINISTRATOR

After more than two decades of service to MDOT SHA, I never imagined I would become Administrator during such a tumultuous time. But it's no surprise how well our staff and contractors rose to the occasion for the people of Maryland. Our team has never stopped working through the COVID-19 health emergency. We delivered another extraordinary level of construction to improve congestion and safety across the State, with 144 completed projects totaling \$427 million in 2020. Work continues on 342 active construction projects valued at \$3.4 billion. In addition, 14 previously State-funded solicitations impacted by COVID-19 in the May/June timeframe were all converted to Federal projects and are proceeding.

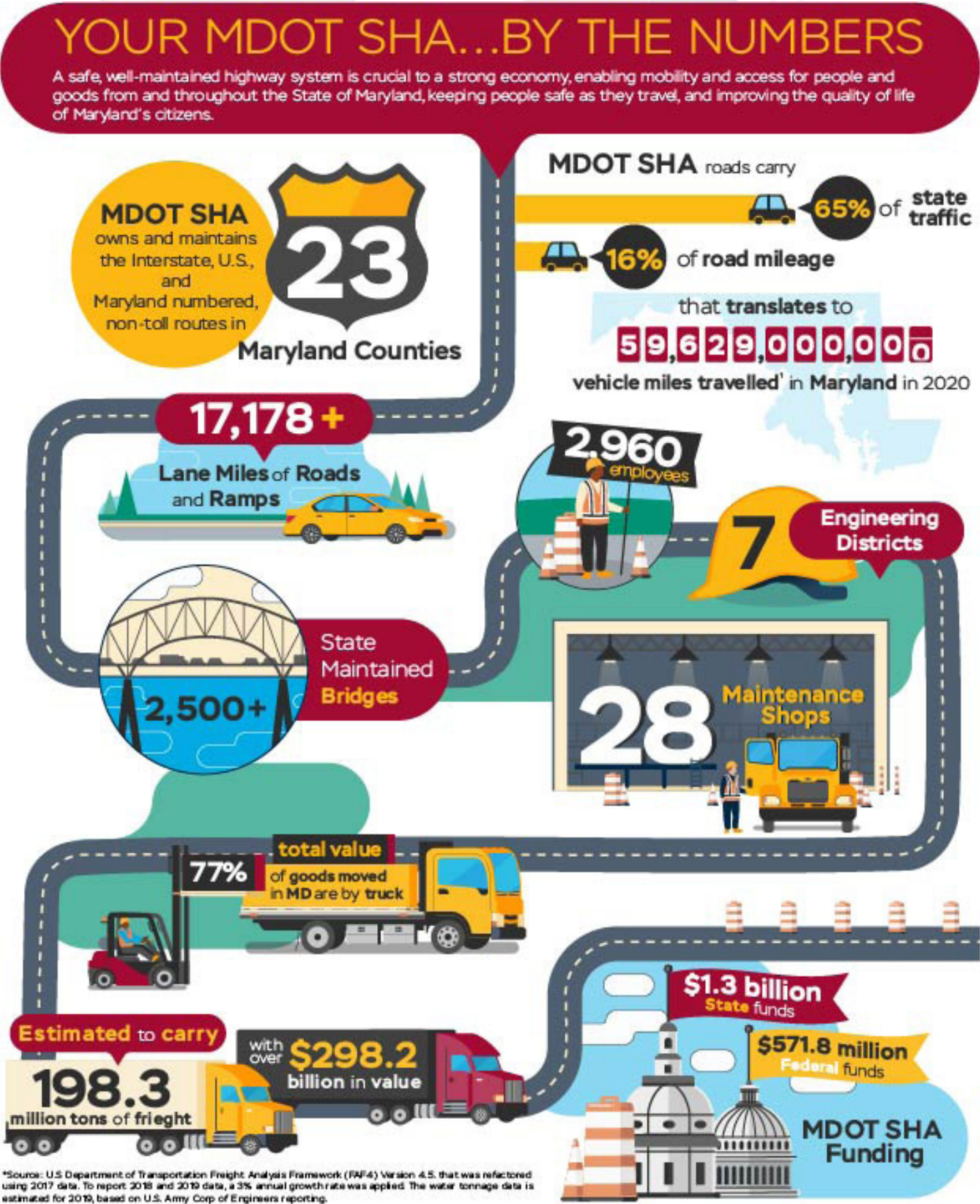
It might be my operational background, but I feel like we really shine when it comes to managing emergencies. Our primary goal was keeping our customers and our employees safe while delivering on our core functions. We advanced projects while following proper health practices, meeting virtually and using appropriate protective equipment. As traffic dipped to 50 percent lower than our typical volumes, our maintenance crews switched to alternating shifts to reduce the number of workers we had in any one location at any given time. That allowed us to keep them safe and continue to keep maintenance activities going. Once traffic slowly came back and reached closer to expected volumes, our maintenance staff returned full-time with additional proper health protocols. For our construction efforts, fewer vehicles on the roadway allowed crews to expand hours of lane closures and we could make more progress without impacting the mobility of our customers. One of our largest projects, the new \$126 million Watkins Mill Road Interchange on I-270 in Montgomery County, is a great example of what we accomplished this year. The project was completed six months ahead of schedule. It relieves bottlenecks on a critical artery to the Capital Beltway, decreases traffic on local roads, and includes pedestrian features such as sidewalks and bike lanes.

I would be remiss to not take this opportunity to ask for your support for our Work Zone Safety and Maryland's Move Over Law efforts. Even when traffic was down, we were having significant challenges with our work zones, with drivers just not adhering to the law. The worst case I've encountered was within a couple of weeks of being on the job in my current role when one of our contractor partners had an employee struck and a life was lost. We can all do more to make sure these hard-working individuals make it home safely at the end of their shifts.

Accessibility is also a priority, making sure that our roadways are safe for all users. One way we have changed the way we do business is by identifying proactive treatments in the Context Driven Guide that support safe access and mobility for pedestrians, bicyclists, and motorists. The guide is changing the way we deliver projects and a Vision Zero philosophy will aide in making our roadways safer for everyone. We will continue to look at ways to use data, smart devices and technology more efficiently in the projects we deliver in the future, as we continue to develop new approaches to solve problems and buid a transportation system for future generations.



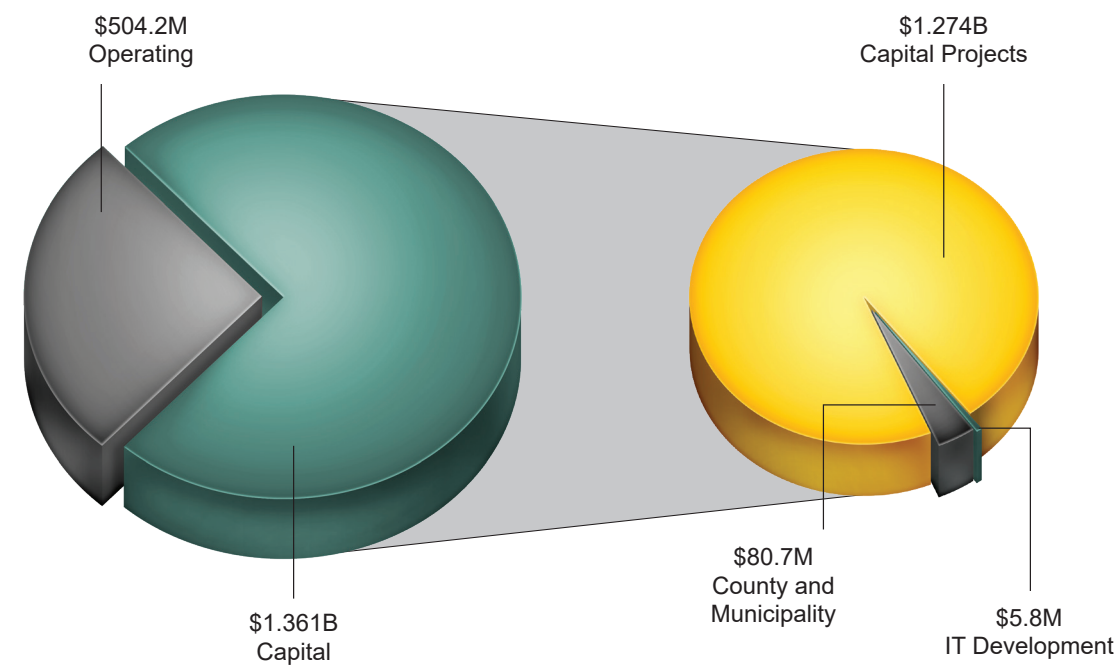
Tim Smith, P.E.
Administrator



FUNDING

FOR FY 2020

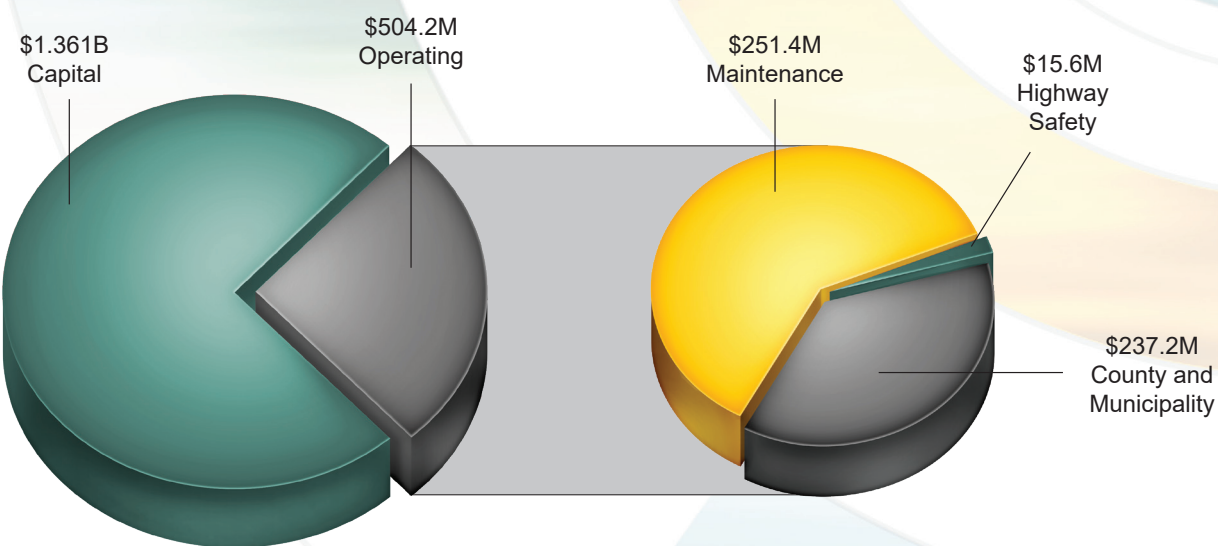
MDOT SHA USE OF FUNDING FOR CAPITAL FY 2020



CAPITAL PROJECTS FUNDS SPENT	FY 2020
Major Projects (planning, design, right of way and construction phases)	\$370.2M
Bridge Rehabilitation Projects	\$241.3M
Pavement Resurfacing/Rehabilitation Projects	\$208.9M
Safety-Related Infrastructure Projects	\$109.9M
Multimodal Access Projects	\$39.5M
Traffic Management	\$58.7M
Environmental Projects	\$118.5M
Facilities, Equipment, Research	\$73.8M
Reimbursable Expenses, Other	\$53.6M
TOTAL	\$1.274B

Funding for MDOT SHA activities originates from State and federal transportation funds. MDOT SHA collaborates with citizens, communities, and elected officials to deliver hundreds of high-quality projects, from system preservation to major investments, through planning, design and construction.

MDOT SHA USE OF FUNDING FOR OPERATING FY 2020



OPERATING MAINTENANCE FUNDS SPENT	FY 2020
Routine Maintenance	\$132.0M
Bridge Maintenance	\$4.1M
Environmental Design and Compliance	\$7.1M
Traffic/CHART Operations	\$31.6M
Winter Operations	\$36.3M
Electricity	\$8.5M
Maintenance Support	\$25.0M
Other	\$6.8M
TOTAL	\$251.4M



TOP TEN ACCOMPLISHMENTS OF 2020

1 Frontline Workers Deliver

Our 2,600 team members and 296 contractors never stopped working through the COVID-19 emergency, which is a testament to their dedication to the citizens of Maryland. Whether it was construction workers, inspectors, emergency technicians, dispatchers or project managers, there were countless examples of people adapting to new health guidelines while serving a critical role in keeping our State moving. While many of our citizens quarantined at home and worked remotely, these men and women were out in the field performing their jobs in creative ways to keep our roadway network safe, efficient and reliable.



2 Finishing Early

Traffic volume decreased by as much as 52 percent across the State in March of 2020, which provided an opportunity for construction crews to work greater daytime hours on several projects that benefitted motorists.

Normal rush hours made it impossible for crews to close lanes during these time periods prior to COVID because doing so would lead to traffic jams. As a result of fewer vehicles on the roadways, crews were able to catch up on projects that were behind schedule or finish others early.

These added work periods greatly benefitted paving projects across the state, but also benefitted large projects such as the \$126 million Watkins Mill Road Interchange on I-270. That project was completed six months ahead of schedule.



3 Supply Chain and Healthcare Access

One major priority of construction efforts in 2020 was to make sure that our supply chain remained strong and that access to healthcare facilities was improved.

4 Northbound Strategic Plan Launched

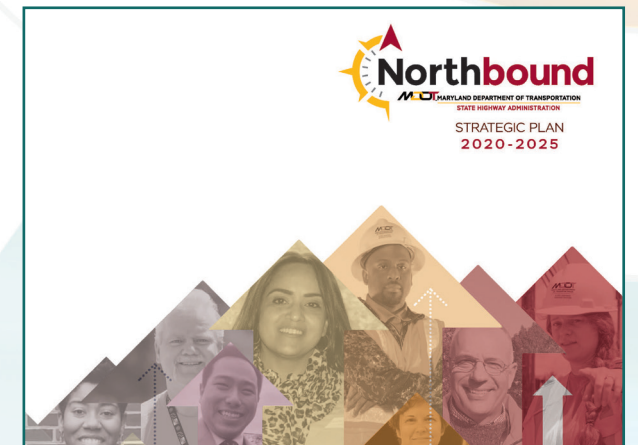
A successful organization must occasionally find its bearings, determine its destination, develop strategies to navigate obstacles and blaze a new trail for the years ahead. MDOT SHA launched its Northbound Strategic Plan, which will focus on 10 strategic goals and major initiatives – The Northbound Ten.



5 Pedestrian Safety

Our roadway network needs to function efficiently and safely for all users, including those who are walking or riding a bike. In 2019, approximately one out of every four people killed in Maryland in a traffic crash was a pedestrian on foot. That is why we adopted a “Vision Zero” strategy to make our network safer. A total of 196 projects around the state have been completed as part of the Context Driven effort in support of the State’s adoption of Vision Zero.

In addition to improving bike lanes, sidewalks and signals as a part of new road construction projects, many older intersections have been retrofitted to improve safety. We installed a new signal, continental crosswalk and sidewalks in front of the Annapolis Library in Anne Arundel County. A similar treatment was done on Veirs Mill Road in Montgomery County, where the Matthew Henson Trail crosses a busy highway. More than \$173 million has been programmed in our six-year plan for additional bicycle and pedestrian improvements.

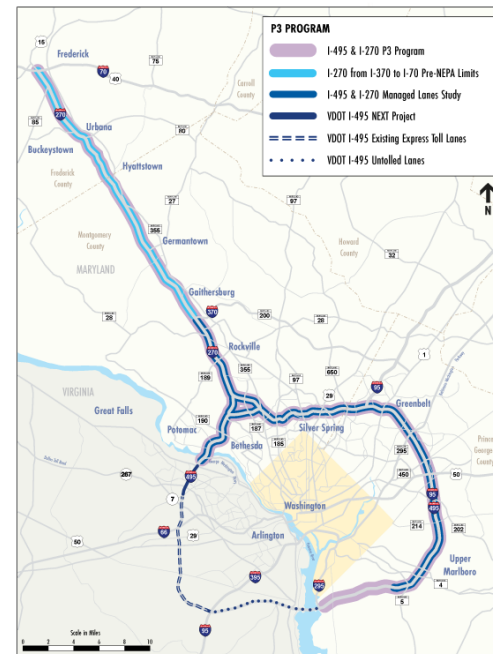


6 Continued Public-Private Partnership (P3) Program and the Managed Lanes Study as Part of \$9-11 billion Traffic Relief Plan

The I-495 & I-270 Public Private Partnership (P3) Program made great progress in 2020 toward fulfilling Governor Larry Hogan's vision to give Marylanders in the National Capital Region a new American Legion Bridge and innovative options for relieving congestion.

Even with the ongoing COVID-19 public health crisis, the P3 Program continued working to meet Marylanders' future transportation needs while prioritizing the health and safety of the public and its opportunity to fully participate in the P3 Program.

Most notable was holding six joint public hearings in August and September 2020 – four of which were held virtually and two in-person – during a more than 120-day public comment period for the I-495 & I-270 Managed Lanes Study (MLS) Draft Environmental Impact Statement (DEIS) that MDOT SHA and the Federal Highway Administration (FHWA) published. Nearly 3,000 comments are being reviewed and will be responded to in Final Environmental Impact Statement (FEIS) in the year ahead. More information on P3 is available on page 22.



7 Incident Response Innovation

Timing is everything when it comes to clearing crashes on our roads.

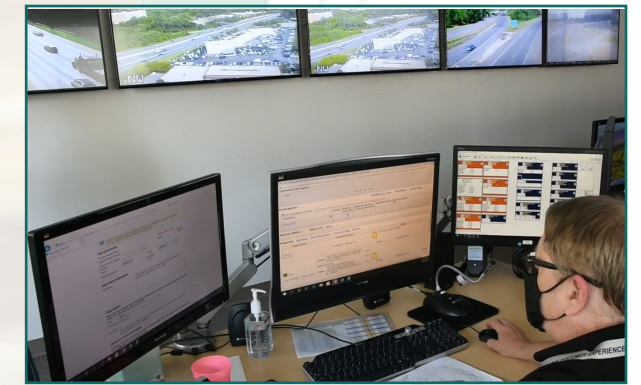
Emergency response technicians responded to about 100,000 incidents in Maryland, including disabled or stranded motorists, major crashes and special events. In order to respond more efficiently, we started a pilot program to purchase vehicles that combine functions of our tow trucks and our utility vehicles into one piece of equipment.

The Coordinated Highways Action Response Team, or CHART, has deployed three of these vehicles with three more in production. The Ford F-550 extended cab truck features an open bed to store tools and a hide-away stinger used to move disabled vehicles off the roadway. They are capable of lifting 4,000 pounds and towing 8,000 pounds, and have a longer life expectancy than other trucks.



8 Work Begins on New Statewide Operations Center

Work began on a \$5 million project to replace our Statewide Operations Center, the headquarters for operations dealing with incident response and traffic management. The new state-of-the-art center will be completed and operational in summer 2021. Improvements include upgrades to the center's configuration, mechanical and electrical equipment replacement, a new floor structure and a rear-projection wall on the upper level. The center serves as the hub for response to major incidents, weather events and special events. Capabilities include real-time traffic monitoring, traffic cameras, dispatch, communication capabilities and co-location of MDOT SHA personnel with law enforcement, utilities, and other government agencies.



9 Honoring the Past

MDOT SHA archeologists discovered evidence of the oldest-known slave quarters in Maryland, a 300-year-old site located on a Jesuit plantation in St. Mary's County. The artifacts are being analyzed to learn more about the people who lived there. All the findings will be incorporated into interpretive signs and materials associated with the Religious Freedom Byway and DNR visitor experience, web sites and public presentations. The team also searched for the home of Harriet Tubman's father, Ben Ross, in Dorchester County, and recovered artifacts from a log cabin once owned by Hagerstown founder John Hager in the historic African American Washington County neighborhood of Jonathan Street.



10 Awards Recognize Excellence (see more on page 48)

The Maryland State Transportation Innovation Council (STIC) presented an Excellence Award to MDOT SHA for programs and a leadership team that work to build, grow, and maintain a culture of innovation in Maryland. The Council is made up of leaders in the highway construction field.

The Office of Communications also won several awards from the Public Relations Society of America - Maryland Chapter for safety messaging utilizing video, print publications and social media. The products focused on work zone safety, distracted driving and construction project updates.

Training Magazine also recognized MDOT SHA in its Top 100 list again for the most successful learning and development programs in the world. An already successful program was adapted to function in a virtual environment.

MDOT SHA PRIORITY PROJECTS

In June, by way of MDOT SHA's first virtual ribbon-cutting event, Lt. Governor Boyd Rutherford, MDOT Secretary Greg Slater, MDOT SHA Administrator Tim Smith and Montgomery County and Gaithersburg officials announced the completion of the three-year, \$126 million interchange project at I-270 and Watkins Mill Road.

The I-270 corridor is known as Montgomery County's Technology Corridor and is home to dozens of existing businesses and planned development in the Gaithersburg area. The congestion-relief project includes a new bridge over I-270, ramps connecting Watkins Mill Road with the interstate, and enhanced accessibility for bicyclists and pedestrians.

Through its improved access to the Gaithersburg Medical Center, Metropolitan Grove MARC Station, the Montgomery County Police Department and local neighborhoods and businesses, the project is delivering more travel options for motorists, truck drivers, cyclists, pedestrians and transit users, while providing tremendous regional economic benefits.

Completed six months ahead of schedule, this long-awaited project is just one example of the work MDOT SHA has accomplished during Maryland's COVID-19 State of Emergency while maintaining safe conditions for commuters and work crews.



MD 273 Over Big Elk Creek – Cecil County:

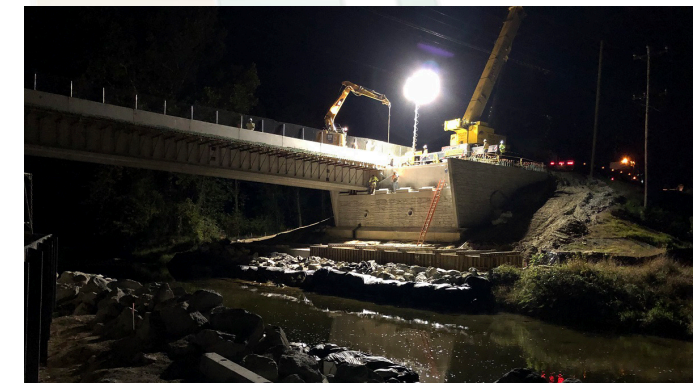
Complete replacement of the MD 273 bridge over Big Elk Creek is part of Governor Hogan's promise to address all poorly rated bridges in the State system. This bridge spans heavily used trails in the Fair Hill Natural Resources Management Area in northeastern Cecil County and the project includes reconstruction of the popular carriage trail under the bridge. MDOT SHA is working closely with the Department of Natural Resources to coordinate work phases and communicate trail impacts with park users. This \$10 million bridge replacement project is on schedule for completion by spring 2021.

US 1 - College Park Corridor Improvement Project – Prince George's County:

In May, MDOT SHA began construction on the \$50 million project to improve safety and operations along the 1.4-mile stretch of US 1 – the gateway to the University of Maryland. Work includes roadway widening and resurfacing, a new bicycle lane, improved ADA-compliant sidewalks and ramps, new lighting, upgraded drainage and stormwater management facilities, and added signage and pavement markings. MDOT SHA worked with utility partners to accelerate utility relocations and constructions, cutting a full year off the original schedule. Completion is anticipated in 2023.

I-95/I-495 (Capital Beltway) Bridges over Suitland Parkway – Prince George's County:

In fall 2018, work began on the \$36 million bridge rehabilitation project as part of Governor Hogan's commitment to address 69 poorly-rated bridges. In addition to replacing the bridges, crews will raise the profile of I-95/I-495 by one-foot to provide additional clearance for Suitland Parkway, as well as upgrade pedestrian lighting under the bridge and drainage improvements. The project is expected to be complete by year-end 2021.



I-95/I-495 (Capital Beltway) Bridges over Suitland Road – Prince George's County:

Work continues on the \$36 million project to replace the I-95 bridges over Suitland Road. The bridges were originally constructed in 1963 and have outlived their useful service life. This project is on schedule for completion by spring 2021.

I-95/I-495 (Capital Beltway) Bridges over MD 214 (Central Avenue) – Prince George's County:

This \$33 million project to replace two aging structures built in 1963 is expected to be complete by year-end 2021. This will add much needed capacity under the bridges to reduce congestion on MD 214.



I-270 Innovative Congestion Reduction Project –

Montgomery County: This \$132 million project will reduce congestion and improve safety and reliability along one of Maryland's most heavily travelled roadways – I-270 from I-495 to I-70. Improvements primarily include extending some acceleration/deceleration lanes, tying some acceleration/deceleration lanes together to form auxiliary lanes and ramp metering. The project is estimated to be completed in 2022.

I-270 Interchange at Watkins Mill Road –

Montgomery County: In June, MDOT SHA completed this three-year, \$126 million project aimed at reducing congestion in one of the most heavily traveled areas in Montgomery County. The project included a new four-lane bridge over I-270 with entry and exit ramps from Watkins Mill Road onto I-270, resurfacing I-270 collector/distributor lanes and a section of Watkins Mill Road, and constructing retaining walls. The I-270 Corridor is known as Montgomery County's Technology Corridor, home to dozens of existing businesses and a vital link to residential and commercial developments.

I-83 (Baltimore-Harrisburg Expressway) Bridges over Padonia Road – Baltimore County:

This \$25 million project will replace the dual bridges over Padonia Road, improve two ramp movements at the interchange and widen the culvert carrying a branch of Beaver

Run under the interchange. The project began in summer 2018 and is expected to be complete in spring 2022.

MD 140 (Reisterstown Road) from Painters Mill Road to Garrison View Road – Baltimore County:

The project will add a third travel lane, bicycle-compatible shoulder, and ADA-compliant sidewalks in the Owings Mills Area. The \$19 million project will support residential communities, institutions and business development and will break the bottleneck on the northbound side of this important connector route. Work is expected to be complete in early 2021.

US 40 (Pulaski Highway) Bridges over Big and Little Gunpowder Falls – Baltimore/Harford County line:

Work continues on this project to rehabilitate the superstructure and widen the decks of four aging bridges along US 40. The \$32 million rehabilitation project began in summer 2018 and is expected to be complete in spring 2022.

US 1 (Washington Boulevard) Bridge over CSX Transportation – Baltimore County:

This \$34 million project replaces the bridge over the rail tracks with added capacity for future rail lines, a rail service road and added height to allow for double stacked freight cars. The new structure will provide wider shoulders on the bridge, as well as a new left-turn lane from northbound US 1 to Clarke Boulevard, pedestrian features and reconstruction of the Clarke

Boulevard intersection. The project began in summer 2018 and is expected to be complete in summer 2022.

I-695 Southwest Outer Loop from US 40 to MD 144 – Baltimore County:

The project will improve mobility and safety on I-695 by reconstructing and widening 1.44 miles of the outerloop roadway from three to four continuous lanes. Other work includes replacing the Edmonson and Ingleside Avenue bridges over I-695, new retaining walls and sound barriers, realigning the ramp to MD 144 and reconstructing Ingleside Avenue beneath I-695. The \$133 million project will be completed in summer 2021.

MD 175 (Annapolis Road) from Reece Road to Disney Road – Anne Arundel County:

In fall 2020, crews opened to traffic the newly-widened MD 175 roadway between Reece and Disney Roads. This 1.1-mile, \$25 million project added one lane in each direction, a 5-foot sidewalk and a 10-foot shared-use path. Improvements will enhance access to Fort George G. Meade and other area military cyber commands. An additional \$25 million project to improve intersections at Mapes Road/Charter Oaks Boulevard and at Reece Road is expected to be complete in the spring of 2021.

MD 5 (Point Lookout Road) between Camp Brown Road and the Lake Conoy Causeway – St. Mary's County:

This \$24 million project will upgrade and widen 2.2 miles of MD 5 between Camp Brown Road and the Lake Conoy Causeway. The project also will include bicycle and pedestrian accommodations along this historic route – the only roadway that provides access to Point Lookout State Park. Construction is expected to be complete in 2023.

MD 5 at Abell/Moakley Streets Intersection

Improvements – St. Mary's County: MDOT SHA continues work on the \$14 million project to improve safety and operations and support existing and planned development along MD 5 at Abell and Moakley streets in Leonardtown. The intersection reconstruction project will accommodate buggies, bicycles and pedestrians

and add a left turn lane at the entrance to St. Mary's Hospital. Governor Hogan broke ground on this project during an event in March 2019. The project is expected to be complete in spring 2021.

MD 254 Bridge Replacement over Neale Sound connecting Cobb Island with mainland – Charles County:

In April, MDOT SHA completed construction on the \$18 million MD 254 Bridge replacement over Neale Sound. The original bridge was built in 1963 and is the only roadway connection to the mainland of southern Charles County for Cobb Island – a 290-acre island surrounded by the Wicomico River, Potomac River and Neale Sound waterways.

MD 2/4 Widening between Fox Run Boulevard and MD 231 (Church Street/Hallowing Point Road) – Calvert County:

In fall 2020, MDOT SHA announced the completion of construction of the \$50 million widening project that breaks the bottleneck on MD 2/4 (Solomons Island Road) from Fox Run Boulevard to Commerce Lane, marking a milestone in Calvert County. Solomons Island Road connects to Calvert Memorial Hospital, Prince Frederick Town Center, area businesses and recreational facilities. Work on the .8-mile-long stretch included adding a third lane in each direction as well as a raised median, bicycle-compatible 5-foot-wide ADA-compliant sidewalks, and a traffic signal with turn lanes at the Commerce Lane intersection.

US 219 North from I-68 to Old Salisbury Road – Garrett County:

This \$63 million upgrade and relocation of US 219 from I-68 to Old Salisbury Road is scheduled to be complete in spring 2021. This project realigns US 219 between I-68/US 40 and Old Salisbury Road as a four-lane divided highway and includes a new interchange at I-68 and was Garrett County's top priority project. Improvements will enhance accessibility and promote economic development for the community through the replacement of existing intersections at the I-68 exit and entrance ramps with roundabouts.

I-81 Widening & Replacement of Dual Bridges over the Potomac River – Washington County: More than two decades in the making, improvements to the I-81 bridges over the Potomac River are nearly complete. This \$104 million project improves safety and mobility, accommodating higher commercial truck volumes and capacity for travel into Washington County and West Virginia. Built in 1965, the bridges were safe but in need of upgrades. This project is a partnership with Washington County, the West Virginia Department of Transportation and the National Park Service.

MD 32 Phase 2 Widening between Linden Church Road and I-70 – Howard County: MDOT SHA continues Phase 2 of MD 32 improvements between Linden Church Road and I-70. The project will widen this section of MD 32 (6.6 miles) from a two-lane road to a four-lane highway with shoulders and a median. The new Triadelphia Road Bridge over MD 32 opened in summer 2020. The \$127 million dualization project began in June 2019 and is scheduled to be complete in summer 2022.



I-270/MD 85 Interchange – Frederick County: Construction continues on the \$88 million I-270 interchange reconstruction at MD 85 (Buckeystown Pike) that will enhance safety, increase capacity and accommodate future widening of I-270. This project includes widening MD 85 along 0.8 miles between Spectrum Drive and Crestwood Boulevard and building a new interchange that replaces the obsolete 1954 configuration. The project is expected to be complete in fall 2022.

MD 30 Business (Main Street) Urban Reconstruction – Carroll County: A priority for Governor Hogan and Carroll County, the \$35 million project improved roadway, drainage, and sidewalks along MD 30 Business from south of North Woods Trail to the CSX Railroad north of Hampstead. Along with safety improvements, streetscape enhancements will help restore the town’s historic Main Street to an attractive and pedestrian-friendly urban roadway. Work was completed in December 2020.

COMPLETED PROJECTS

DISTRICT 1	AMOUNT
Dorchester County	
MD 16 from Brannocks Neck to MD 335 Church Creek	\$6.7 million
Wicomico County	
US 13 (Business) improvements	\$8.6 million
Cleaning and painting of various bridges	\$1.8 million
Worcester County	
MD 346 from US 113 to Healthway Drive	\$2.8 million
US 50 at MD 589 geometric improvements	\$4.5 million
US 113 Phase IV north of MD 365 to north of Five Mile Branch	\$72.6 million

DISTRICT 2	AMOUNT
Cecil County	
Maloney Road at MD 40 intersection geometric improvements	\$3.1 million
MD 272 bridge over Amtrak in North East replacement	\$23.4 million
Kent County	
Painting three bridges in Kent County	\$1.1 million
Queen Anne’s County	
MD 213 bridge rehabilitations	\$9.8 million
MD 213 patching and paving through the Town of Centreville	\$1.2 million
Area-Wide	
Repairs to multiple bridges	\$1.6 million

DISTRICT 3	AMOUNT
Prince George's County	
MD 198 from Van Dusen Road to 8th Street	\$1.8 million
Stream restoration of Charles Branch tributaries at Rosaryville State Park	\$10.2 million
MD 210 Charles County Line to 350 feet north of Palmer Road	\$619,000
Montgomery County	
I-270 interchange at Watkins Mill Road	\$126 million
Outfall restoration at tributary to Cabin John Creek	\$2.1 million
Area-Wide	
Drainage improvements (Prince George's and Mongtomery counties)	\$3.1 million

DISTRICT 4	AMOUNT
Baltimore County	
Replacement of Crosby Road Bridge over I-695	\$9.2 million
Rehabilitation of US 1 bridge over Big Gunpowder Falls	\$4.2 million
Safety and resurfacing on US 1 (Belair Road) from I-695 to Still Meadow Road	\$4.8 million
Stream restoration of Little Gunpowder Falls Tributary at MD 145 and MD 165	\$6.9 million
Outfall restorations between I-83 South and Stable Church Road; tributary to little falls along I-83 near MD 45	\$3.3 million
Harford County	
Safety and resurfacing on MD 22 from Prospect Mill Road to MD 136	\$9.4 million
Safety, resurfacing and drainage improvements on MD 132 (West Bel Air Avenue) from MD 462 to US 40	\$3.0 million



DISTRICT 5	AMOUNT
Anne Arundel County	
MD 175 intersection improvements - Reece and Mapes Road/Charter Oaks Boulevard	\$25.4 million
I-97 patching	\$1.7 million
Calvert County	
MD 2/4 roadway widening from Fox Run Boulevard to south of Commerce Lane	\$49.7 million
Charles County	
MD 254 Cobb Island Bridge over Neale Sound	\$17.8 million

DISTRICT 6	AMOUNT
Allegany County	
Mount Savage MD 36 over Jennings Run bridge replacement	\$9.1 million
Garrett County	
US 219 from I-68 to Old Salisbury Road	\$62.7 million
Washington County	
New bridge and widening of I-81 over Potomac River	\$103.9 million
US 40 sidewalk upgrades in Hagerstown	\$2.4 million
MD 845A Keedysville Urban Street reconstruction	\$7.2 million

DISTRICT 7	AMOUNT
Carroll County	
MD 32 from Main Street to MacBeth Way roadway widening	\$5.9 million
Hampstead streetscape along MD 30 Business	\$35.1 million
Frederick County	
MD 180 reconstruction from Swallowtail Road to I-70 ramp	\$18.9 million
I-70 paving from MD 17 exit to Washington County Line	\$6.7 million
Howard County	
MD 32 at Broken Land Parkway Park & Ride expansion	\$1.6 million

P3 PROGRAM UPDATE

I-495 & I-270 PUBLIC-PRIVATE PARTNERSHIP (P3) PROGRAM UPDATE

The I-495 & I-270 Public Private Partnership (P3) Program made great progress in 2020 toward fulfilling Governor Larry Hogan’s vision to give Marylanders in the National Capital Region a new American Legion Bridge and innovative options for getting out of congestion.

Even with the ongoing COVID-19 public health crisis, the P3 Program continued working to meet Maryland’s future transportation needs while prioritizing the health and safety of the public and its opportunity to fully participate in the P3 Program.

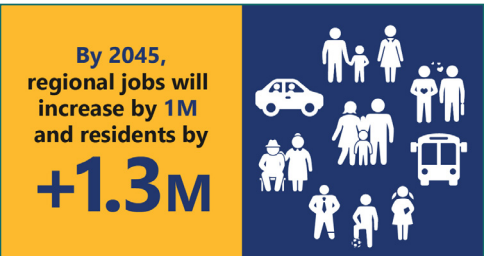


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While the health crisis impacted travel in the region, by year’s end, traffic in the National Capital Region (NCR)

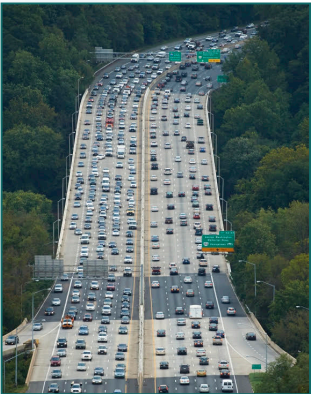
remained more than 80 percent of what it was just a year before. This is particularly important since pre-pandemic commuting times and congestion on I-495 & I-270 in the P3 Program area consistently rank as the second highest in the nation. With an additional 1.3 million residents and 1 million new jobs expected to be added to the NCR by 2045, increased travel and congestion are projected to increase commuting times from pre-pandemic levels.



With this in mind, the P3 Program’s two reporting agencies – MDOT SHA and the Maryland Transportation Authority – also forged ahead in concurrently advancing the P3 Program’s solicitation for a Phase Developer to help deliver and perform predevelopment work for Phase 1 of the P3 Program. Phase 1 would improve I-495 from the vicinity of the George Washington Memorial Parkway in Virginia, across and including the American Legion Bridge, to I-270, and I-270 from I-495 to I-70. The American Legion Bridge to I-270 and I-270 to I-370 would be delivered in the first phase.

2020 Highlights of the P3 Program’s important milestones:

- On January 8, the Maryland Board of Public Works (BPW) voted to amend its earlier designation of the I-495 & I-270 P3 Program to advance with a proposed competitive solicitation process for Phase 1 including the American Legion Bridge and I-270.
- On February 7, MDOT SHA and MDTA issued a Request for Qualifications (RFQ) to identify the most highly qualified teams seeking to be shortlisted as potential Phase Developers to respond to a Request for Proposals (RFP).
- In May, the P3 Program’s Transit Work Group – comprised of county, State and federal transit agencies, released the Transit Service Coordination Report outlining potential regional transit service improvements and ridesharing opportunities possible if managed lanes are built along the I-495 and I-270 corridors.



- On May 20, four teams submitted a Statement of Qualifications (SOQ) expressing interest in becoming the Phase 1 Developer.
- On July 10, the MLS DEIS was published and a 90-day public comment period announced.
- On July 17, MDOT SHA and the Maryland Transportation Authority (MDTA) announced a shortlist of highly qualified private-sector teams eligible to respond to a Request for Proposals (RFP) to be the Phase Developer responsible for designing, building, financing, operating and maintaining Phase 1 of P3 Program.
- On August 28, based on input from community partners, stakeholders and local and federal officials, MDOT SHA and FHWA extended the MLS DEIS public comment period from 90, which was already double the regulatory minimum, to 120 days.
- On November 9, the public comment periods for the I-MLS DEIS concluded.
- On December 18, MDOT SHA and MDTA finalized the Request for Proposals (RFP) for a Phase Developer for the P3 Program’s Phase 1 after a nearly six-month collaborative process of feedback and refinement with the shortlist.

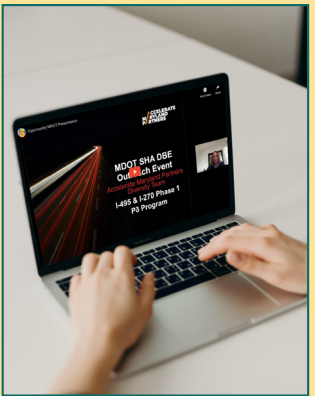
OPPORTUNITY MDOT

Opportunity MDOT continued to support the P3 Program through proactive outreach to ensure participation by small, minority-, women- and veteran-owned businesses and disadvantaged businesses are participating in all aspects of the program.

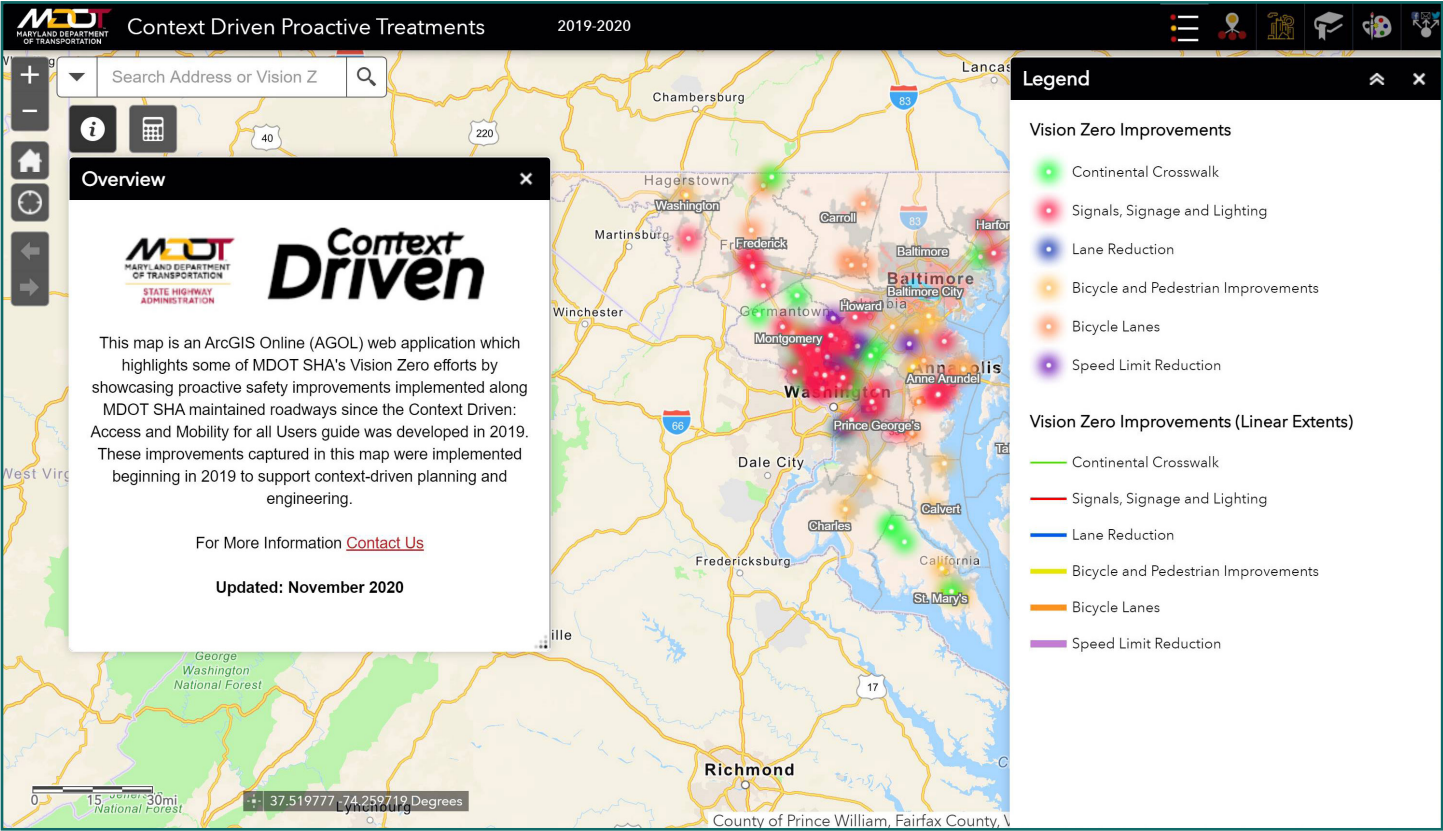
With in-person events put on hold during COVID-19, Opportunity MDOT adapted to bring their initiatives to a virtual platform – a first of its kind for MDOT SHA. On November 6, staff virtually hosted an online multi-session Redevelopment/

Professional Services Networking event to connect 120 certified Disadvantaged Business Enterprise (DBE) professional service firms with the shortlisted proposer teams competing to become Phase Developers the P3 Program’s Phase 1.

In addition to hosting this event, Opportunity MDOT also attended and spoke at 16 events during the course of the year.



MDOT SHA CONTEXT DRIVEN



In 2019, MDOT SHA began implementing its Draft “Context Driven – Access and Mobility for All Users” version 1.0 guide that focuses on creating a safe, accessible, and balanced multimodal transportation system. A core tenet reestablished in this guide was the need to appropriately balance accessibility and mobility. In this guide, MDOT SHA established six context zones, ranging from urban core to rural, to ensure this balance is set to meet the specific needs of Maryland’s varied communities. MDOT SHA began to pursue context-appropriate improvements that reinforce or newly implement the appropriate balance between accessibility and mobility.

The Context Guide identified several proactive treatments that will improve access, mobility and safety for all users, especially pedestrians and bicyclists, on MDOT SHA’s network. Those treatments include

implementing a series of low-cost, high-impact countermeasures in urban cores and urban centers, including high-visibility continental crosswalks, speed-limit reductions, right-turn-on-red restrictions, leading pedestrian interval signal-timing adjustments and lane reductions. These treatments have been shown to reduce the likelihood and severity of pedestrian crashes and will lead us to Vision Zero.

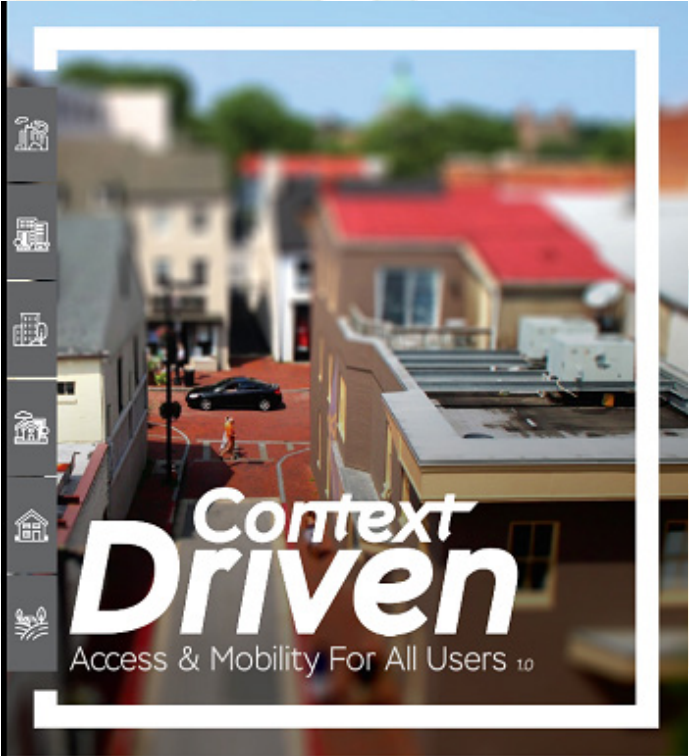
Since 2019, a total of 196 proactive Context Driven projects around the State have been completed as part of Context Driven and to support Statewide Vision Zero goals. In addition to improving bike lanes, sidewalks and signals as a part of new road construction projects, many older intersections have been retrofitted to improve safety. MDOT SHA worked with local partners to study and improve corridors like Veirs Mill Road and cores like the Wheaton Triangle. MDOT SHA also installed a new signal, continental

crosswalk and sidewalks in front of the Michael E. Busch Annapolis Library in Anne Arundel County (see more on pg. 45).

Just recently, MDOT SHA announced its new comprehensive web portal on creating safe and accessible transportation systems that is now available through its homepage at roads.maryland.gov. The Context Driven Web Portal will house MDOT SHA’s suite of “Context Driven: Access & Mobility for All Users” resources, including an interactive Context Guide version 1.0 and a new Statewide Progress Project Map (see map on pg. 22).

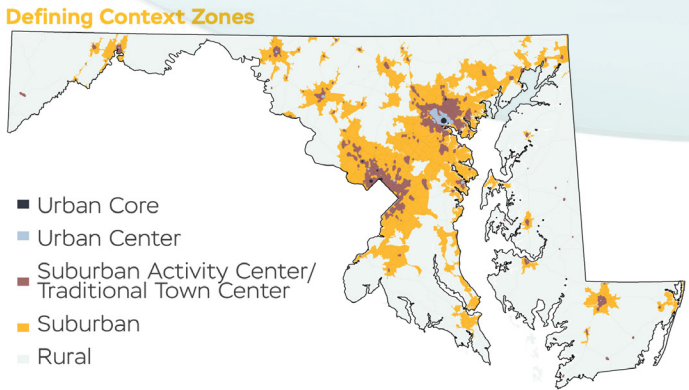
In the year ahead, MDOT SHA’s Office of Planning and Preliminary Engineering will work with other offices like MDOT SHA’s Office of Traffic and Safety (OOTs), MDOT MVA’s Maryland Highway Safety Office (MHSO) and other partners throughout the State to develop MDOT SHA’s first Pedestrian Safety Action Plan (PSAP). The PSAP will be one of the products housed under MDOT SHA Vision Zero efforts, which will streamline and coordinate all our safety products, tools and initiatives (like Context Driven) under one safety umbrella.

The PSAP, guided by principles established in Maryland’s Strategic Highway Safety Plan (SHSP) and MDOT SHA’s Context Guide, will identify areas of need and recommend safety countermeasures by employing a Context Driven approach to project planning and design. The Context Driven approach considers the appropriate balance between access and mobility, based on how bikes, peds, cars and other customers use the roadway. Roadway and bike/ped facility usage can vary among landscapes, or contexts, and the Context Driven approach allows us to tailor design to any of six different contexts – urban core, urban center, urban, suburban activity center or traditional town center, suburban and rural.



Access: **HOW MANY PLACES** you can get to in a given amount of time

Mobility: **HOW FAR** you can go in a given amount of time



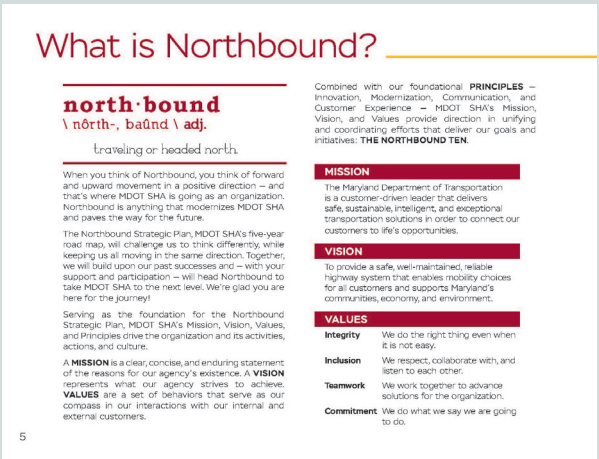
MDOT SHA NORTHBOUND STRATEGIC PLAN

While 2020 certainly held its share of unprecedented challenges, an organization can be ready to meet them if it has a plan. And, with the help of Team MDOT SHA members throughout the agency, that's just what they developed and launched in August 2020 – the Northbound Strategic Plan.

The Northbound Strategic Plan is the culmination of work that began in October 2019 during meetings that brought together a diverse and motivated cross-section of our workforce to discuss organizational culture; identify MDOT SHA strengths, weaknesses and opportunities; and create an energy for embracing the upcoming changes.

This document outlines a new direction and values for MDOT SHA and includes specific goals and major initiatives that we would like to focus on for the years to come, while staying true to our Principles – Innovation, Modernization, Communication and Customer Service. There are 10 goals – The Northbound Ten. Employees have been selected from throughout the agency to come together as Coaches, Navigators and Trailblazers to develop a Navigational Road Map with strategies and measures to deliver on these 10 goals.

Northbound will be integrated into everything that we do and lay the foundation for an exciting and productive future for the agency and the customers we serve. We're excited to see the entire agency engaged in moving MDOT SHA in an upward and positive direction for years to come!



MDOT SHA TRAC AND RIDES PROGRAMS

Although met with various challenges during 2020, MDOT SHA's Transportation and Civil Engineering Program (TRAC) maintained their success from previous years. While the COVID-19 pandemic presented new challenges to our work environments and hindered our abilities to work directly with teachers and students, SHA continued to provide training and engagement for programs in alternative ways. Unfortunately, the American Association of State Highway Administration (AASHTO) was unable to hold the National Bridge Builder Challenge for middle and high school students due to the ongoing pandemic. However, they encouraged eager participants to hold their own "school-based" challenges by providing interested schools with all necessary materials.

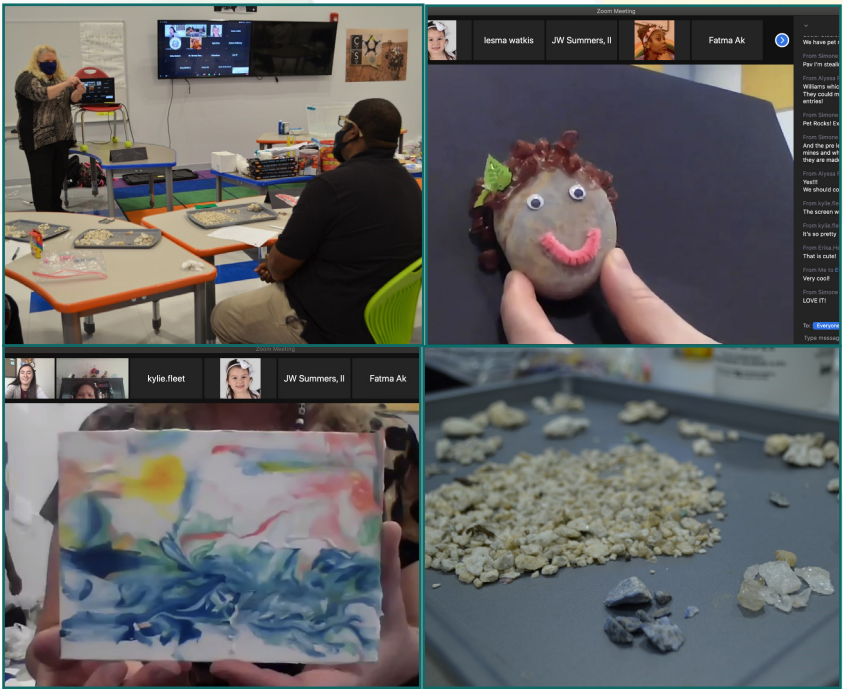
MDOT SHA continued to expand on our mission to engage today's youth in the possibilities of careers in engineering and transportation by providing them with fun and hands-on activities centered around the principles of Science, Technology, Engineering and Math (STEM). We are proud to have continued provided training for the Roadways in Developing Elementary Students (RIDES) program that was launched in 2019. RIDES is specifically geared

toward elementary aged students and activities are developed to have them apply basic STEM principles to real-world problems that effect transportation and civil engineering. In partnership with AASHTO and CMIT South Elementary School, MDOT SHA was able to support and participate in AASHTO's first virtual training for TRAC-related programs. With appropriate COVID-19 precautions in place, two trainers from AASHTO provided a hybrid-style training to the interested teachers of CMIT South Elementary School.

Educators were not only present in the classroom but were tuned in virtually from the comfort of their homes to participate in activities. The following week, the second session was held 100%

virtually, being hosted by our trainers who provided instruction from Alabama while participants were here in Maryland.

While our working environments and methods in which we conduct business looked a little different this year, MDOT SHA's mission for student engagement and education remained the same. We are proud to invest in the future engineers, bridge builders and professionals of the transportation industry.



This page is dedicated to former Office of Policy and Research Special Projects Manager Aaron Jones, who put his heart and soul into managing the TRAC and RIDES programs prior to his passing in July 2020. His passion was strong and will be missed.



As an agency dedicated to public service, MDOT SHA cares about the communities we serve. We demonstrate that commitment through special initiatives including helping during the pandemic, enthusiastic support of the Maryland Charity Campaign, as well as many localized efforts led by our district offices and maintenance shops throughout the State.

DRIVE THROUGH TESTING SITES SAVE LIVES

With coronavirus testing key to reopening the State and restoring our economy, MDOT cooperated with the Maryland Department of Health (MDH) to adapt MDOT MVA Vehicle Emissions Inspection Program (VEIP) stations to drive-through testing sites. MDOT SHA did its part as stations were set up in Glen Burnie, Waldorf, Columbia, White Oak and Bel Air. Five additional sites will open in May. MDOT SHA staff provided traffic-control plans, deployed Portable Display Message Signs (PDMS), and set up Portable Cameras (PCAMs) for Maryland Emergency Management Administration (MEMA) to monitor the flow of cars arriving for medical tests.



Intelligent Transportation Systems Chief Janet Frenkil, who coordinated the effort, attended site walks with multiple agencies, supported MDOT MVA

requests, and participated in each site's opening day to show our local shops where to deploy cones, signs and barrels. Among those contributing were teams from CHART ITS, OOTS TDSD, D3, D4 and D5, with participation by management and staff, including Cedric Ward, Joey Sagal, Anyesha Mookherjee, Dave Rineholt, Doug Stewart, John Coll, Patrick Crogan, Michael Garber, Aime Mondoua, Gary Hunt, Steve Rochon, Oscar Yen and William Stroud.

2020 MARYLAND CHARITY CAMPAIGN

MDOT SHA is made up of a wonderful team of caring people. Every year, employees and retirees make payroll donations to help thousands of people in our communities. While COVID-19 curbed the usual in-person fundraising efforts, several online fundraisers and payroll contributions allowed Team MDOT SHA to still raise \$40,884 (84.4% of its goal) to help those in need!



DELIVERING HOSPITAL BEDS IN A CRISIS

During the COVID-19 pandemic, MDOT SHA District 4 maintenance team members went beyond their essential highway operations duties to keep Marylanders healthy and safe.



On May 15, a team from three District 4 maintenance shops brought 65 badly needed hospital beds and hospital equipment all the way from a temporary Under Armour warehouse in Edgemere, Baltimore County to MedStar St. Mary's Hospital in Leonardtown.

This caravan is part of an ongoing statewide effort to ensure that Maryland has the hospital facilities and equipment throughout the State to respond to the COVID-19 pandemic. State agencies, including Maryland Department of Health, Maryland Emergency Management Agency, Maryland Army National Guard and MDOT work together to support emergency medical services and move essential equipment into place.

Six facility maintenance technicians (FMTs) from the Churchville, Golden Ring and Hereford shops joined a six-truck caravan to deliver the equipment: Mike Hunger, Golden Ring; Rudy Jones, Golden Ring; Garret Nemec, Hereford; Doug Openshaw, Hereford; Justin Cullum, Churchville; and Joe Spencer, Churchville.

"Our managers provided the support that the team needed for the day. They made sure the delivery team had the right equipment for the move and

checked in with us to make sure everyone arrived safely and the delivery was going smoothly," said Facilities Maintenance Supervisor at Churchville Nick Vogel, who was the District 4 coordinator for the effort.

Those managers included Alan Price, RME Golden Ring; Tony Sinclair, RME Churchville; Dave Lates, ARME Hereford; Wayne Smith, Facilities Maintenance Supervisor, Golden Ring; Shop Chief Scott Spangler, Golden Ring.

"Our team did an awesome job that day," said Assistant District Engineer - Maintenance Terry "Wil" Clark. "We'll be glad to step up and help out whenever we can."

DEAF TRANSLATOR SAVES THE DAY AT COVID TEST SITE

Having a healthcare worker give you a COVID-19 test can be frightening and confusing – even more so if you can't be reassured with instructions because you're deaf and need help communicating. Fortunately, an MDOT SHA team member recently stepped up to help a deaf patient at a Maryland testing site.



In October, MDOT SHA workers were helping MVA and Maryland's COVID-19 Testing Task Force route the cars arriving at a testing site operating at Six Flags Amusement Park in Bowie. The task force had received word that a deaf woman would be coming that day and needed assistance. But who could

act as a translator on short notice? Fortunately, someone was on hand who could help. FMT 1 Leon Coleman, who learned sign language as a young man, volunteered. He welcomed the woman and her companion, escorted her, and put her at ease by explaining the process that the healthcare team was using. The entire test went forward without a hitch.

“They were ecstatic that there was someone who could communicate for them,” recalls Leon.

“You never know the skills that the onsite staff have until the circumstances arise,” said Denise A. Albright, a Maryland State Coordinator, Local Public Health Initiatives. “Leon was a huge help today, and we thank him and the SHA team for their assistance for this patient today. It was great teamwork in action!”

Leon had studied sign language when he was attending high school in Jacksonville, Florida. In a classic case of turning lemons into lemonade, Leon, who has ADHD and dyslexia, wasn’t able to take a required foreign language course because of his disability, but found he could acquire the skills to communicate with the deaf. Since then, he has used these skills whenever serendipity put him at the right place at the right time: once at a Baskin Robbins to help a customer choose a tasty ice cream, another time at a Books A Million, where he helped a boy pick an enjoyable book to read.

Leon stands prepared not only to discharge his orders as a facility maintenance technician, but also to step forward when an unexpected situation calls for someone with his special talent. “I was happy to help,” he says.

SUPPORTING ROBERTA’S HOUSE

Looking back from the harrowing times of the coronavirus outbreak, last Christmas seems a particularly idyllic season. A highlight was the successful Maryland Charity Campaign (MCC), which raised funds to help the needy.



One project was led by the Office of Equal Opportunity (OEO). OEO MCC Coordinator Andrea Spriggs recalled that OEO staff coalesced around Roberta’s House. Roberta’s House is a family grief center that provides free counseling and peer support programs for children, teens and adults, as well as professional workshops and training. Their staffers offer a variety of counseling services for family members impacted by a loved one’s death, paying special attention to families of those who succumbed to overdoses, gunshots, and cancer.

OEO collected socks, hats and gloves, as well as candy canes, to deliver to Roberta’s House in time for the holiday.

MDOT SHA GIVES NEW LIFE TO USED EQUIPMENT FOR LIVING CLASSROOMS FOUNDATION

On November 5, MDOT SHA employees loaded up a van at 7:30 a.m. and delivered 50 computers to the Living Classrooms Foundation in Baltimore. The 35-year old non-profit organization serves thousands of Maryland and Washington D.C. area youth and families with innovative education, job-training and health and wellness programs.

“MDOT is proud to support the good work of the Living Classrooms Foundation,” said MDOT Secretary Greg Slater. “This donation is an extension of what we do at MDOT to help improve the lives of Marylanders, and we look forward to this

partnership with Living Classrooms continuing for years to come.”

The idea of a partnership came from MDOT SHA Deputy Director of IT Operations Keith Spraker, who is a member of the current Advanced Leadership Class. When visiting Living Classrooms Foundation as part of the class, Spraker learned the non-profit has 300 desktop workstations and about 100-200 of them are outdated to the point of uselessness.

“We inquired about their process and found out they accept donations. So instead of just condemning ours, we suggested that we could design a sustainable program of donations that would fit their replacement needs,” said Spraker.

Needing new equipment is nothing new for non-profit agencies, but this need came at a time when everyone is competing for donations of IT equipment and supplies due to the pandemic creating a “new normal” for schools and other organizations.



“When Living Classrooms Foundation reached out to MDOT for help replacing some of their 300 desktop workstations, State Highway was happy to help,” said Administrator Tim Smith. “It is our hope that we can continue to provide support through the donation of used workstations as they become available.”

“We are extremely grateful to MDOT SHA for the generous donation. This will be instrumental in helping Living Classrooms Foundation’s teams to expand our reach into the community and continue to provide children, youth, adults and families with the tools and support they need to pursue their goals,” said James Piper Bond, President and CEO of Living Classrooms Foundation.

The first donation of personal computers was as successful as it was meaningful. These computers will help Maryland children and families who would otherwise not have access to crucial information and support programs.

FIRST MARYLAND BRIDGE CHALLENGE READIES TRAC STUDENTS FOR NATIONALS

On January 31, Maryland’s 14 TRAC teams squared off at Morgan State University for the chance to represent Maryland in the National TRAC Bridge Challenge, hosted by the American Association of State Transportation Officials (AASHTO).

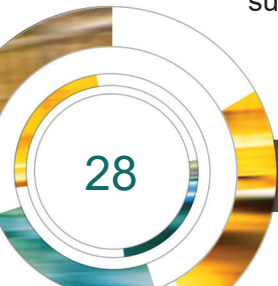
In the first Maryland Bridge Challenge, student teams competed against their peers from throughout the State. They recorded measurements for their bridge performance test and practiced oral presentations. The teams tested their bridge designs by placing them on a special scale. With each addition of weight to a bridge, students cringed in hopes they would hit the top mark before hearing the tell-tale sound of their bridge finally cracking under the load.

The Varsity Division winner was Hanover-based

Chesapeake Science Point High School for its Grade A Balsa Only (GABO) bridge.

Then-Office of Policy Research Special Projects Manager Aaron Jones coordinated the event with assistance from the Office of Communications’ Chisa Winstead and Kerry Brandt and Office of Structures Project Manager Justin Mohr served as a mentor.

While the teams were unable to travel to Kansas City for the National competition (which was cancelled due to COVID-19), it was still a very rewarding experience for everyone involved. A congratulatory video was produced by MDOT SHA to recognize the students and was shared on numerous social media platforms.



MDOT SHA PRIORITIES: COMMUNICATION

Good communication is the root of any organization's success. Marylanders expect and deserve clear, transparent information. Informed customers can make sound decisions regarding the State's transportation network when they receive communication frequently, accurately and effectively.

GOOD TIME TO TEAM UP ONLINE

With many workers telecommuting because of the Coronavirus, MDOT SHA's access to a newly obtained Microsoft product, MS Teams, makes collaboration easier.



Deputy Director IT Operations Keith Spraker (left) says that in February 2020, the Office of Information Technology (OIT) replaced Skype for Business with MS Teams, which, he says, has better features. "MS Teams has 98% of what Skype has and more," he indicated.

MDOT SHA employees were using Skype for Business primarily to make conference calls and not trying out other features. MS Teams is more inviting. It also allows conference calls. More importantly, it lets people from the same department and those collaborating interdepartmentally share information, exchange ideas and work through plans. Users of the software come together as groups and teams.

Those working together on a project find it easier to interact virtually. An example, says Keith, is the way the Advanced Leadership Program (ALP) classmates work closely. Directed by Chief Learning Officer Yvette Harrison (right), ALP team members can post important documents and books to Team Channels and discuss them. They can use the Chat



feature to communicate with one another as they prepare an assignment and decide the details of their PowerPoint presentation.

New communications efforts were critical in 2020. MDOT SHA established 240 new Microsoft Teams, activated 161 new phone lines and 26 new MiFi hotspot devices and distributed 464 devices. In addition, 30 forms were converted to DocuSign and paperless invoice processing that was averaging two weeks is now down to 2-3 days.



VIRTUAL TOWN HALL MEETINGS KEEP EMPLOYEES INFORMED



Using Teams, Administrator Tim Smith hosted MDOT SHA's first-ever online Town Hall Meeting on May 15. Thanks to our new technologies, we were able to

communicate with virtually any person from any place – and that's just what almost 1,000 of us did during the meeting.

The Town Hall gave leadership a chance to provide COVID-19 updates and provided an opportunity for employees to submit questions prior to and during the live event. Any questions not answered during the live event were responded to after the event and posted – along with a recording of the meeting – to the Intranet. After a successful Town Hall event was held in May, additional online events were held September 30 and January 26, 2021. The highly popular meetings are a unique opportunity for us to share information and come together as the MDOT SHA Team!



SMALL TOWN PAVING REQUIRES BIG TIME COOPERATION AND COMMUNICATION

On paper, there was nothing remarkable about the MD 213 paving through Centreville. It was a small project in Queen Anne's County less than a mile through town. In reality, the story was much different. MD 213 is a two-lane, two-way road that splits at each end of town with the resulting one-way streets encircling much of the downtown area. This meant that once paving was underway, residents, businesses and visitors could lose access for several hours. And work was set to begin in early June, just as many small business owners were trying to reopen as part of Governor Hogan's Phase 1 Road to Recovery plan.

Recognizing the critical need to minimize business impacts, MDOT SHA, the Town of Centreville and the contractor followed an aggressive schedule and worked closely with the public to maintain access in the downtown area. MDOT SHA staff issued daily recaps and look-aheads and met personally with residents and businesses to coordinate parking, pedestrian access, deliveries, etc. as the operation moved through town. Community Liaison Bob Rager estimates he walked about 10 miles each of the paving days, going back and forth among businesses all day with updates to help them coordinate parking,

customer access and curbside pickups. "For a project like this where we literally changed access block-by-block, hour-by-hour, the only effective way to provide accurate information was to stay one step ahead of the paving – literally," said Rager.

Area Engineer Terry Lehman adds the teamwork among multiple agencies and great cooperation from the public were "paramount in making this project a success."

WORKERS' COMPASSION OVERCOMES SNAGS IN KEEDYSVILLE PROJECT

Visiting the national historic district of Keedysville today provides a tourist walking down a well rebuilt State highway a look at a town with a mix of striking 18th century houses, church steeples and new suburban homes. (see photo pg. 16) Think back a year, though, and it was a place where construction had suddenly halted and residents expressed their frustration.

MDOT SHA had contracted with a construction company for the Keedysville Streetscape, but the company grew rapidly and then collapsed, leaving MDOT SHA scrambling for a replacement. Thanks to D6 Project Engineer Dave Mitchell, Area Engineer Christopher Perkins and the new contractor, the project has been completed and residents are delighted with the results. Keedysville's Main Street retains its character because MDOT SHA design staff customized the construction on the hilly street, making detailed modifications to sidewalks, railings and drainage. Dave Mitchell took a personal interest in the project, handing out his business card to homeowners, spending time with individuals and getting to know them personally. During the project a tree, beloved by its owner, couldn't be spared, but Dave took a piece of the wood into his woodshop and carved a rolling pin for her as a memento. Now *that* is communications above and beyond.

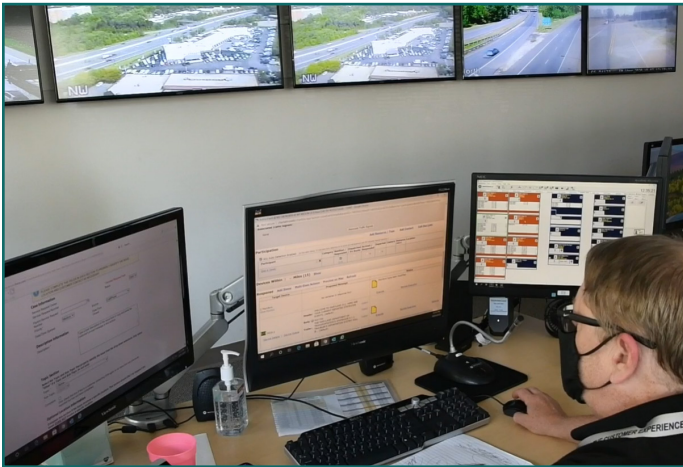
MDOT SHA PRIORITIES: INNOVATION

MDOT SHA sets an example by exploring new technologies and seeking creative ways to improve how we do business. The customer experience is at the heart of what we do. By setting the bar high, we are building a culture of innovation and excellence in the quest to offer new, transformative solutions that move Maryland.

SOC REBUILDING ON 25TH ANNIVERSARY

This year marks the Statewide Operations Center’s (SOC) 25th anniversary, and at least partially in that honor, a new SOC is now being built. The new design is meant to improve on the present center’s limitations.

Says CHART System’s Administrator Rick Dye, “We look like a lot of operation centers, like NASA, all facing the screens. But we’re not NASA. They concentrate on a single task, launching a rocket. For us, there’s always more than one event going on and our staff gets distracted. Believe it or not, we found that a better model was ESPN, a hub where one group is following basketball and another football and another baseball. They need good communication, but in their own areas.”



Rebuilding the Hal Kassoff SOC has begun and should conclude in 2021. In the meantime, SOC staff are being housed temporarily in the computer training room of Hanover’s Building 4. The relocation isn’t as painful as some feared because COVID-19 has already forced many to readjust, moving their operations to telecommuting.

RESCUE AND MOBILITY: COMBINED MISSION FOR NEW OFFICE

Easily recognized by its rescue trucks that come to the aid of stranded motorists on State highways, the Coordinated Highways Action Response Team (CHART) is more than a service that replaces blown tires and adds a gallon of gas to unexpectedly emptied tanks. It’s an operation that uses newly developing technology to tackle growing congestion in the DC corridor, Baltimore area and throughout the State.

To modernize and emphasize these overall goals, 2020 saw the debut of the newly formed Office of Transportation Mobility & Operations (OTMO), which incorporates multiple offices into one program.



OTMO’s purpose is to provide a safe, efficient and reliable travel experience to drivers on Maryland State highways.

OTMO manages three essential statewide programs -- CHART, Transportation Systems Management & Operations (TSMO) and the Intelligent Transportation Systems (ITS) program. CHART is the customer interface of OTMO that focuses on 24/7 traffic monitoring, traffic management, incident response and management, emergency operations and traveler information services like Maryland 511. It is responsible for real-time operations, emergency operations and special events. The SOC is the hub of CHART operations. Four Traffic Operations Centers (TOCs) spread across the State.

The second OTMO program is TSMO. TSMO looks at ways to optimize transportation networks and, thus, manage congestion, reduce delays, improve safety and provide a sense of reliability. TSMO supports activities that enable CHART to deliver its services to our roadway users. This support includes planning, project development, engineering design, advanced traffic management systems, advanced analytics, education, outreach and performance management. Equally important is the deployment and maintenance of the Intelligent Transportation System (ITS) and telecommunications infrastructure that supports the OTMO purpose.

WHERE WILL THE ROAD BE IN 20 YEARS? TRY TO SEE IT

Even with the very best data about a planned project, you may have trouble envisioning what a road will look like 5, 10 or even 20 years from now. Still, you need this projection to plan for future projects before the first shovel hits the ground. To the rescue comes our Travel Forecasting and Analysis Division (TFAD), a team of engineers who can help visualize a roadway with computer simulation and vivid animation that translates traffic data into something you can see.

TFAD Chief Lisa Shemer oversees a group of Team Leaders, Traffic Engineers and consultants, who are able to create impressive animations with realistic landscape features using the traffic simulation software VISSIM. The animations, based in real world data and forecasted future conditions, provide a sense of how traffic will look years into the future. Simulation and graphics can assist both MDOT SHA project planners and residents who come to public meetings to better understand how the proposed solutions will impact roadways. The animation lets you look at proposed alternatives. TFAD can insert satellite imagery and 3D representation of the study area to show numerous features along the roadway. The VISSIM software can provide different angles of view, for example looking down from a bridge or from behind the wheel of a car.

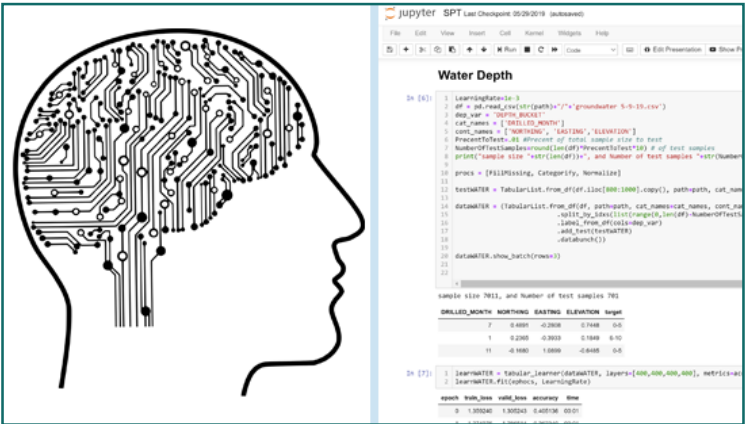
TFAD works on many internal projects and addresses many MDOT SHA needs. The ongoing collaborations with those working on Transportation Systems Management & Operations (TSMO) and Connected & Automated Vehicles (CAVs) are two of their current outstanding efforts. The US 50 Severn River Bridge Project was also a great example where TFAD used simulation to obtain a fast turnaround solution to a big problem.

OMT USES MACHINE LEARNING TO DETECT DATA PATTERNS AND AUTOMATE IMAGE RECOGNITION

You know a technology is really smart – and useful – when it can read information and then learn from it. The Office of Materials Technology (OMT) is working with the Office of Information Technology (OIT) to begin utilizing the technique of machine learning.

OMT enhanced its boring request tool with technology that provides the ability to make predictions. Now, all boring requests have the added sophistication of predicting subsurface and

scheduling information based on historic drilling data. Subsurface exploration predictions include groundwater depth, infiltration rates, general soil type and blow counts. Project schedule predictions include permitting, drilling, lab testing and reporting based on the location and types of work requested. Equipped with this useful information, team members can anticipate expected field conditions before work starts and set a more realistic work schedule.



A related mathematical technology, the neural network, identifies images for computers using object recognition. OMT has begun analyzing annual roadway right-of-way imagery with neural networks for several purposes,

including object identification and quality control of Automated Road Analyzer (ARAN) imagery. OMT Director Sejal Barot expects this technology to save time with asset identification and improve monitoring of geohazard risks, such as unstable slopes and sinkholes. These models will give MDOT SHA increasingly useful tools to support timely and informed decisions.

DOTS NATIONWIDE ADOPT OMT’S NEWLY APPROVED STANDARDS

What goes onto a highway’s surface helps ensure that highway’s safety. Following recommendations from an AASHTO taskforce chaired by MDOT SHA OMT Director Sejal Barot, AASHTO published two new provisional standards developed by this taskforce that will significantly help DOTs adopt these innovative tests. In July 2020, AASHTO officially published Provisional Standards, PP103 and PP104 (Preparation and Polishing of Unbound Aggregate and Asphalt Mixtures for Dynamic Friction Testing). MDOT SHA shared decades of friction

testing experiences by leading the AASHTO Committee of Materials and Pavement’s Task Force. We worked with its members to develop methods for sample preparation, polishing, and friction testing. When we drive, we need a skid-resistant pavement so when we break, the car safely comes to a full stop within a very short distance. Aggregate, the stones that are used in the asphalt mix, must exhibit skid resistance and provide adequate friction. The challenge is selecting the right aggregate for a given pavement. Well done!

OUTBREAK FOR MDOT SHA

For the Office of Construction (OOC), converting a process that had long been paper-based into a digital format meant working out some tricky problems: such as finding an innovative user-friendly solution to meet the needs of construction inspection staff on job sites, customizing that solution for veteran staffers accustomed to using pen and paper as well as for millennials born into this digital era using mobile devices.

A partnership between OOC and the Office of Information Technology (OIT) resulted in the birth of an electronic Maryland Construction Management System

(eMCMS). e-Construction applies an array of digital tools to operating the built environment. It links eMCMS to previously utilized AASHTOWare and Bid Express eBidding tools. A Federal Highway Administration (FHWA) State-based Innovation Councils (STIC) grant provided tablets and therefore mobility to Construction inspection staff, who can now access these tools from anywhere at any given time. The iPads increased collaboration with other stakeholders, eliminated trips to the field office and has made it easy to share data remotely with contractor leadership and MDOT SHA staff in other offices. Contractors benefit through this application, rapidly improving the approval workflow for paying monthly estimates on projects.



MDOT SHA DRONES GAIN SOPHISTICATION

What would you do if you could spot a landslide before it happened? That’s what one of MDOT SHA’s drones did on I-68 at Haystack Mountain. The Office of Material Technology (OMT) had been monitoring a crack on the mountainside for months. After a heavy rainstorm, inspectors climbed the mountain for a routine inspection and didn’t notice any new problems, but they wanted to use a drone for the first time. They called for it to fly overhead and that’s when Engineering Geology Field Manager Ross Cutts, through the drone’s camera, identified large fissures developing further up the mountain that weren’t noticed at ground level. Within minutes, the drone photos made the case for an emergency procurement project to stabilize the slope with a soil nail bed and build a catchment area for rainfall. No landslide, no closed road, no injury or loss of life.

MDOT SHA currently operates three drones out of 707 headquarters and the Hanover Complex. Each battery charge per drone lasts 20-25 minutes. OIT Unmanned Aerial Systems (UAS) Program Coordinator Matt Horowitz, a veteran of NASA, worked with the MDOT SHA drone taskforce to identify ways that various offices and districts can use drones in sophisticated ways to provide data that couldn’t easily be collected before.

The software used with MDOT SHA’s drone, Pix4D, uses a method called photogrammetry, in which the drone takes many overlapping photos of a site that are then stitched together into a single large map. the map is then used for obtaining reliable information about objects and the environment. The software has a mobile phone app that connects to the drone and serves as an autopilot for the flight.



MDOT SHA PRIORITIES: MODERNIZATION

MDOT SHA is building upon what is already great! From preparing for future Connected and Automated Vehicles to welcoming a new Statewide Partnering Coordinator, we are ready now to face the challenges of tomorrow's transportation needs.

CONNECTED AND AUTOMATED VEHICLES (CAV)



The MDOT SHA CAV Program team has a top group of employees ready to move Maryland highways forward with CAV as auto makers, the federal government, and other states make incremental advances. In 2020, the team was busy, busy, busy and accomplished the following:

- Piloted HAAS Alert connected vehicle technology on three types of MDOT SHA vehicles meant to notify the public through Waze that our staff is on the road (i.e. pay attention!).
- Kick-started the investigation of a roadway automation readiness methodology, not done before nationally, which led to Maryland's contribution to The Eastern Transportation Coalition AV readiness project.
- We are recognized nationally as an active stakeholder in national CAV initiatives, including the AASHTO National Strategy and USDOT Concept of Operations for roadway automation.
- MDOT SHA in partnership with The Secretary's Office deployed a survey to local jurisdictions to identify their needs relating to emerging technologies.

- Created a 60+ CAV solutions matrix with associated one-page summaries to support alternatives analysis development during the project planning stage.
- Created an AASHTO CAV educational training module for future national distribution to middle and high school students and piloted the training with two Maryland schools.
- Released an updated ITS Communications Plan with CAV communications infrastructure needs included in long-term deployment.
- CAV-related solutions for vulnerable users were championed by MDOT SHA and approved for the statewide 2021-2025 Maryland Strategic Highway Safety Plan.
- Secured funding for a Maryland law review to identify the legal impacts of CAV on statutes and support future CAV legislation in Maryland (to be completed in December 2021).
- The 2019 State Transportation Innovation Council funding we received to use connected vehicle technology to support vulnerable roadway users through I2V kicked off with the selected vendor for a crosswalk in Prince George's County. Expected deployment in winter 2021.
- Investigated the human impact for three types of automated vehicle technologies (automated mowers, snow plows, and truck mounted attenuators) to better understand the possible return on investment to MDOT SHA.
- The US 1 SPaT project officially kicked off in fall 2020 after several years of delay. The project is now slated for deployment in spring 2021.

MDOT SHA's CAV program has received high marks for its efforts and continues to lead the way in Maryland's overall CAV planning and implementation.

STATEWIDE PARTNERING COORDINATOR HELPS BUILD FUNCTIONING TEAMS AND MODERNIZE MDOT SHA

Let's say your project team is in a meeting with the gas utility, a community spokesperson, our maintenance of traffic staff, and the construction company. They're all arguing their own needs. You're the facilitator. How do you focus them on the shared vision and goals? Carly Levine is there to help.

In May, just before the COVID budget freeze hit, Carly joined the Office of Construction as a Statewide Partnering Coordinator. An expert in building functional teams, she's here to ensure that the principles of teamwork are applied on construction projects and internally between departments and divisions.

Here's her credo: "To me," she says, "a team is a group of people coming together to achieve a common goal, and partnering is the act of working together. Successful, high-functioning teams can resolve conflict through collaborative problem solving, open and honest communication, coordination and cooperation. Team members have cross-functional understanding of the roles and responsibilities within the team, holding themselves and others accountable, and maintaining mutual respect and constructive working relationships."



In this age of COVID, she can also get you past the doldrums of virtual meetings that just aren't moving your project forward.

The shift to a remote workforce fundamentally changed how teams interact and communicate. Carly has been working with a wonderful group of people to create resources, tools, and strategies for facilitating more effective meeting. Whether you want to learn more about running effective

meetings, collaborative problem solving, positive conflict resolution, or leadership principles, she's here to help.

A common difficulty, she says, is when a meeting gets derailed because someone goes off topic. She can

offer tips to get past that struggle and get your meetings back on track.

Carly comes to her expertise through a background in athletics. For more than 20 years, Carly pursued field hockey as a player, a teammate, a coach, a businesswoman, and an advocate. She held collegiate coaching positions at NCAA Division 1, 2, and 3 levels while organizing some of the best-known, large scale recruiting and developmental camps around the country.

Now, Carly is traveling across the State to meet engineers and staff, observe, and offer solutions to help build functioning teams and modernize MDOT SHA.

PREPARING FOR A CRISIS: MDOT SHA IMPLEMENTED COOP BEFORE COVID-19 THREATENED

In mid-March 2020, with the Governor’s Office signaling that emergency measures to combat coronavirus would force major changes to State government, MDOT SHA asked all staff to test the now indispensable Virtual Private Network (VPN) computer connection at the same time from their homes.

The test passed, and a critical portion of the administration’s plan would go into effect days later. OIT would go on to create 900 VPN accounts, bringing the total to 1,600 – a vast system that allowed MDOT SHA employees from the Eastern Shore to Western Maryland and beyond to see the same computer screen at home that they would at their office. Additionally, OIT acquired 75 laptops from DoIT, deployed over 160 laptops, and deployed additional smartphones to ensure continuity of services. Throughout MDOT SHA, departments went into emergency mode, advising staffers, whenever possible, to telecommute and mandating social distancing for employees reporting to work in person.

MDOT SHA had prepared a Continuity of Business Operations (COOP) Plan years before this crisis began. One of the departments that thoroughly prepared was CHART. CHART’s successful preparation rested on four foundations. One is the Advanced Management Traffic Systems (ATMS), a web-based operating system that’s shared by four CHART centers – three of them in Maryland State Police barracks – and the MDTA. The system – second nature to many of us – allows real-time viewing of incidents. Early on, the system allowed remote access – from home or any location – in a way that’s much used now during COVID-19. Two, a 700 MHz radio system, allows different agencies to talk in a way that has long been a challenge for responders from police, fire, and transportation.



Three, was the distribution of laptops, VPN, and portable radios long before the emergency. Useful during normal times for after-hour participation in community meetings and special events, they were in place for times like these. Four, was assigning each CHART driver a vehicle that didn’t need to be shared – now an important safeguard against disease transmission.

Looking to improve COOP across MDOT SHA, in 2019 a special team of researchers began meeting with offices and departments to create a phase two version with precise written instructions.

Working with the Office of Administration’s David Maier and preparing to hand off to Office of Homeland Security & Occupational Safety Director Darien Manley, consultant Eric Oddo is preparing a new plan that is both detailed and easy to implement. The draft plan will include not only an executive summary but individual sections for each department’s unique needs, making it easier to follow. Later this year, the Center will validate the plan with MDOT SHA by gathering staff to conduct exercises with hypothetical scenarios. A final plan will follow. Then comes the hard part: When coronavirus has passed, when it’s barely a memory, MDOT SHA staff from time to time must review the plan to keep it current and everyone prepared.

EMBRACING A NEW WAY OF DOING BUSINESS DURING COVID

Running through the infrastructure of our organization like plasma through a body, information technology, computer systems, telecommunication lines and electronic devices have allowed MDOT

SHA team members to keep the agency’s core functions going during this age of coronavirus, while staying away from the office and keeping everyone safe.

The emergency brought three major adjustments to the way MDOT SHA team members work:

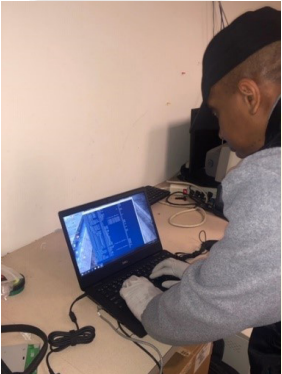
- 1. It emphasized the need for better, faster equipment. OIT is responding by modernizing the equipment bundle to improve the experience for MDOT SHA employees and those who drive our highways.
- 2. OIT strengthened the service desk bench by adding more analysts to its “soft phone queue.”
- 3. The OIT Service Desk staffers have been monitoring the volume of internal service tickets and service desk calls. As wait time or tickets increase, OIT adds people to quicken the



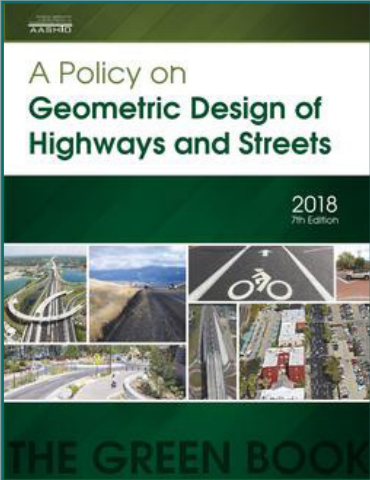
response. The Service Desk received 8,684 calls (taken by a 2-3 member team) and 24,000 service requests!

The personal touch counts, and many OIT staff earned enthusiastic complements from colleagues who posted to the Intranet Kudos page.

Joshua Green (below right), for example, won plaudits from many coworkers, especially those at Hanover, who sometimes drove up to the complex with a laptop or other piece of malfunctioning equipment, slipped it through the car window, and found it repaired soon after by Josh.



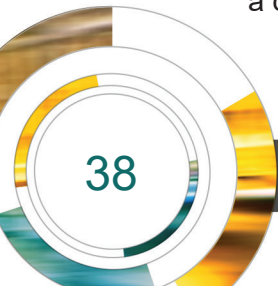
Charles Ostrander, left, who programs and repairs employees’ cell phones, drove across the State to help MDOT SHA staffers, sometimes opening the trunk of his vehicle in a mall parking lot and converting it into a mobile office.



GREEN BOOK OFFICIALLY ADOPTED

MDOT SHA recently adopted the latest edition (version 7) of the American Association of State Highway Transportation Officials (AASHTO) title, “A Policy on Geometric Design of Highways and Streets,” also known as The Green Book. In addition to more modern touches, like color pictures and updated charts and figures, the latest version incorporates more design flexibility, a greater emphasis on multimodal design, and a more performance-based approach than previous versions.

Starting with a total rewrite of Chapter 1, A New Framework for Geometric Design, The Green Book authors set a new tone for practitioners. The new chapter starts by identifying a project’s purpose and need, which will drive the scope of the project. At MDOT SHA we have already begun to implement this approach as part of a Practical Design. Additionally, classifying roads into either rural or urban highways is a thing of the past. There are now five context classifications (rural, rural town, suburban, urban, and urban core) so that practitioners can better identify the appropriate design elements on every project. Almost every chapter of The Green Book has been updated to emphasize the importance of designing for all transportation users, including pedestrians and bicyclists who use our facilities. This updated content will better address all needs, expectations of communities and the surrounding land use.



PAPERLESS TASKFORCE TAKES ON TOUGH REQUIREMENTS DURING COVID

Ask Accounting Operations Assistant Division Chief Michele Crowder how much paper that the Office of Finance (OOF) has to store and transport to meet official payment requirements and she leads you to her colleague Steven Brown (below), who stands beside a pile of boxes as tall as he is. A little later she thinks of another example and leads you to a tall stack of invoices awaiting shipment to the General Accounting Division (GAD) of the Comptroller’s Office.



To ensure proper payment and maintain fiscal oversight, the State of Maryland requires that the invoicing and payment system continue to use paper records. In Fiscal Year 2019, OOF processed 69,000 invoices.

Starting in March 2020, official requirements ran up against the COVID-19 emergency, when public safety forced most workers to telecommute. Working at a distance from the office added stress to the lives of staff required to sign and mail large numbers of official documents.

That’s when Deputy Administrator for Administration Betty Conners began working with Office of Finance Director Bill Bertrand and Office of Information Technology Director Laurie Goudy on creating new processes to ensure the electronic transmission of payment requisitions and other sensitive documents.

OOF and other departments like Human Resources and Procurement. OIT Deputy Director Karen Keller says that an immediate accomplishment for the Paperless Taskforce was finding an acceptable standard for electronically signing documents.

Vendors have begun submitting invoices electronically, and MDOT SHA offices have begun sharing documents online – 30 forms were converted to DocuSign and paperless invoice processing that was averaging two weeks is now down to 2-3 days. FMIS regulations still require printing of documents, so the process is in a hybrid stage. Still ahead: The Comptroller’s Office must approve a system that will serve not only MDOT SHA, but all State agencies.

OIT and the Taskforce are working to solve the needs of Human Resources, too, exploring the extension of MTrack to the approval of leave requests. HR leadership is recording its business processes as a precursor to moving many of them online. The Office of Procurement and Contracts is examining its A&E processes and its short and long forms. It has already begun signing some documents electronically, using Adobe Pro and DocuSign. The team is consulting with the Attorney General’s office and Legal to determine if there are documents that should never be transmitted electronically, although the hope is that there will be very few.

EASING PAPERWORK FOR EROSION AND SEDIMENT

Writing concisely can be a challenge. Keeping standard operating procedures from ballooning can also be difficult. That has been the case with erosion and sediment control, explains OHD Deputy Director Laura Ridler. OHD oversees project design, which includes an Erosion and Sediment Control sequence of construction aimed at preventing sediment-laden runoff and damage to the environment.

Over the past decade, these sequences went from simple to very detailed, which has led to a rise in contractor field modification requests – almost 1,000 in 2019 – delays, and frustration among contractors

and OED field compliance staff alike. Understanding the need for change, MDOT SHA launched a pilot in the fall, bringing together staffers to work out what should be in the sequence of construction and what shouldn’t. The result: they managed to reduce the sequence of construction from 198 lines down to a mere 22! Now the sequence is flexible and complies with erosion and sediment regulations. The pilot project, located on MD 212A, was advertised in February 2020. MDOT SHA will monitor project feedback from districts, Quality Assurance, designers, and contractors.

OLD BALTIMORE BETHLEHEM STEEL PLANT SITE OF MDOT SHA PROJECT

Marylanders of a certain generation remember how important Bethlehem Steel was to the State, in particular Baltimore, where its plant employed many local workers. While Bethlehem Steel is no longer in Sparrows Point, the bridges at the intersection of MD 151 and MD 151B, southeast of the I-695/ MD 158 interchange, live on. They now serve a vital economic corridor for new major employers, including Amazon and Under Armour.



MDOT SHA began work on a \$29 million interchange reconstruction project that is expected to conclude by fall 2023 and support the area’s industrial growth, expected to increase area traffic. The corridor leads to Tradepoint Atlantic, which includes an Amazon fulfillment center, a FedEx ground facility and Under Armour’s distribution facility. In addition, McCormick & Co. is scheduled to open a distribution center there. The project also will provide bicycle and pedestrian accessibility.

PILOT PROJECT TO EASE OVERFLOW TO US 1

Picture our current limitations when there’s a significant crash on I-95 in Howard County. If several lanes are closed, motorists will divert to the nearby arterial, US 1. Then what happens? Bumper-to-bumper traffic – not only on I-95, but also on the narrower US 1, where traffic signals are prevalent.

A pilot program beginning in Howard County will help MDOT SHA actively manage the arterial traffic and alert drivers with information that’s not yet available on popular GPS mapping apps. The installation of Intelligent Transportation System (ITS) technology along the US 1 Innovative Technology Deployment Corridor is the first of its kind for MDOT SHA as it will facilitate enhanced freeway-arterial operations along parallel corridors.

CHART, working with OOTS, plans to deploy 12 CCTV cameras, 9 dynamic message signs (DMS), and 19 travel time/origin-destination sensors on US 1. The new equipment will provide MDOT SHA with new capabilities: detailing how many cars and trucks are diverted by an incident on I-95 or MD 295; getting a broader picture of where these vehicles are originating and where they’re destined to go; adjusting the traffic-signal timing on US 1 so traffic moves; posting instructions to drivers on DMS; and providing enhanced information on driver apps such as Waze to improve situational awareness for the agency as well as the traveling public. By installing this equipment for use in the short-term, MDOT SHA also is positioning itself for the future and communications with Connected and Autonomous Vehicles that are being developed and, once on roads, will respond more quickly than drivers.



The Paperless Taskforce has short-term and long-term goals, both for

MDOT SHA PRIORITIES: ENHANCING THE CUSTOMER EXPERIENCE

Outstanding customer service is crucial to serving Maryland's travelers. We work each and every day to deliver the projects that matter to our customers. Reducing travel times and making daily trips smoother and safer, we are embarking on a bold mission to deliver an exemplary overall customer experience. Our customer service approach is exemplified from our attention to rapidly spotting and repairing potholes to our application of specialized skills that uncover Maryland's past.

PATROLLING FOR POTHOLE

The freezing and thawing cycle that occurs in winter and during the transition to spring takes its toll on the State's highways. In early spring, MDOT SHA sends extra patrols to scout for potholes. A pothole is formed when moisture seeps into a pavement crack and freezes, then thaws during the warmer temperatures. This stresses the pavement and when traffic is introduced, potholes form. Cold patch asphalt is a temporary repair. When temperatures consistently hold at 50 degrees and greater, crews switch to more permanent hot-mix asphalt, which is applied at a higher temperature and seals the potholes.

In fiscal year 2020, MDOT SHA patched approximately 20,000 square yards of potholes at a cost of approximately \$2.5 million. An average cost to repair a pothole is \$125. This includes the material, labor and traffic control during pothole patrols.

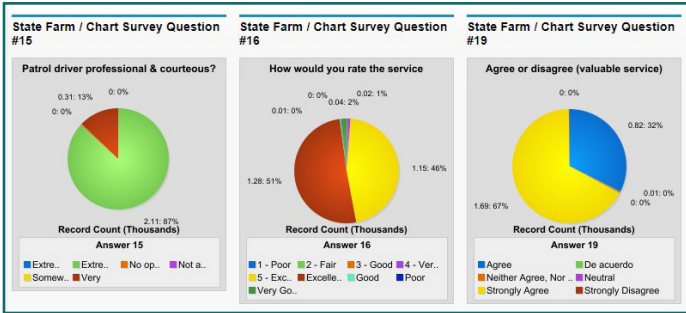
RESPONDING TO EMERGENCIES

Team MDOT SHA has continued its vigilance throughout the pandemic and has assisted a motorist, on average, every 10 minutes even with reduced traffic volumes. The service CHART Operations provides is mission-critical in improving the safety and efficiency of our roadways and delivering an



exceptional customer experience. In addition, 2020 was our first full year patrolling Maryland's Eastern Shore, joining patrols in our Western, Baltimore and National Capital regions.

A comprehensive and advanced traffic management system with a Statewide Operations Center "hub," CHART functions 24/7. With satellite Traffic Operations Centers and emergency traffic patrols spread across the State to handle peak-period traffic incidents, CHART has assisted nearly 1.2 million motorists since the program began in the mid-1980s. And we're doing a great job – 99% of the motorists we assist feel the service provided is valuable and the patrol drivers are very or extremely professional and courteous while providing services that are very good or excellent. MDOT SHA's CHART incident management program saved motorists \$1.393 billion in user costs and helped reduce delays by 32.6 million vehicle hours in CY 2019.



MDOT SHA ARCHAEOLOGISTS BRING MARYLAND'S HISTORY TO LIGHT

When it comes to our State's history, MDOT SHA's archaeologists lend their expertise when they can help counties, localities, and nonprofits make new discoveries.

In September 2020, a log cabin with significant ties to Hagerstown's African American community was the subject of research. The archaeologists went to Washington County to study artifacts from a cabin on Jonathan Street, which is estimated to be at least 180 years old.

"We want to know what these artifacts can tell us about the first citizens of Hagerstown," MDOT SHA Chief Archaeologist Dr. Julie Schablitsky, said. "The cabin is in the center of an African American neighborhood that was once the main street through Hagerstown. We're looking at the evolution of Jonathan Street, the cabin and how moving a major transportation route away from that space impacted the neighborhood."

In October, Schablitsky and her team worked with St. Mary's College of Maryland to unearth a 300-year-old slave quarters site at a historic Jesuit plantation in Southern Maryland.

Many of the archaeological remains lay buried in farm fields within Newtowne Neck State Park, which is managed by the Maryland Department of Natural Resources and located a stone's throw from an 18th century brick manor once occupied by Jesuit missionaries. Early indications suggest the slave quarters date to around 1700.

The team partnered with Maryland Rediscovery 400, an initiative to promote and interpret Southern Maryland's rich history. The archaeologists used metal detectors to pinpoint the locations of early cabins,

where the enslaved left evidence of their lives in broken clay tobacco pipes, ceramic cups and rusty nails.

In November, MDOT SHA's archaeologists went to Dorchester County to examine a property that local historians believe was the home of Harriet Tubman's father. Part of Blackwater National Wildlife Refuge and owned by the U.S. Fish and Wildlife Service (USFWS), it may once have been home to the Underground Railroad conductor herself and her family.

"Finding Harriet Tubman's father's home would be an amazing discovery," said Dr. Schablitsky. "Being able to add a new chapter to her life through archaeology and share it with the traveling public is an honor."

Working in partnership with USFWS, MDOT SHA examined the area southwest of Cambridge in hopes of finding the location of the home for possible inclusion in the Harriet Tubman Underground Railroad Byway.



DELIVERING EVERY DAY
FOR OUR CUSTOMERS

MDOT SHA ASSET MANAGEMENT

Asset management (AM) is a strategic method to manage MDOT SHA assets such as roads, bridges, pavement, guardrails, signals, and fleets of repair trucks. The key point about asset management is that making regular repairs allows MDOT SHA to extend the life of these assets and reduce overall cost. For example, by regularly painting a bridge, it suffers less corrosion. The bridge lasts longer and MDOT SHA saves the far greater cost of replacing it. Using a business term, MDOT SHA gets a better return on investment using asset management. MDOT SHA responds to immediate needs and at the same time, applies asset management systemwide.

We look at individual projects and at the system. We repair potholes as they're reported, but we also focus on maintaining pavement systemwide. We address congested locations with projects and the most congested roadways in the State with larger efforts, but we examine intersecting roads and the system to address broader issues.

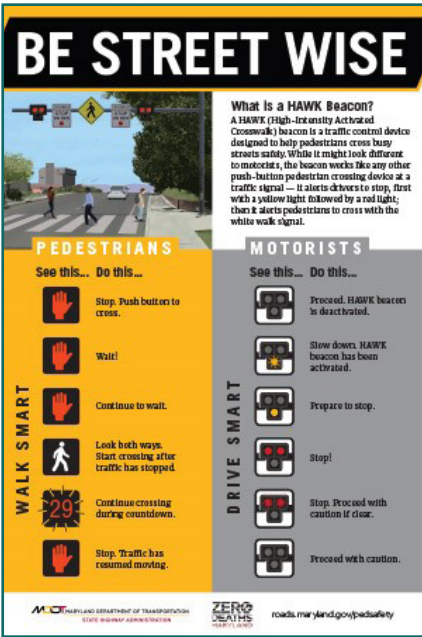
Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Excellent	3%	3%	4%	4%	3%	6%	5%	4%	4%
Very Good	12%	11%	13%	12%	11%	14%	13%	12%	13%
Good	21%	18%	20%	18%	19%	20%	20%	20%	20%
Fair	38%	38%	38%	39%	40%	36%	36%	36%	35%
Mediocre	17%	19%	17%	18%	18%	17%	20%	20%	20%
Poor	9%	11%	8%	9%	9%	7%	8%	8%	8%

Further, we work with MDOT TBUs to plan highways and transit – air, rail and truck freight – together. Using reliable data, MDOT SHA takes an active approach and invests wisely – from pothole repairs to fleet maintenance.

MDOT SHA ENHANCES PEDESTRIAN AND BICYCLE SAFETY ON THREE BUSY ROADWAYS

MDOT SHA is committed to delivering safety enhancement projects to communities across the State.

Three projects are making it safer for pedestrians and bicyclists to share the road with motorists. To help pedestrians and bicyclists safely cross MD 586 (Veirs Mill Road) in Montgomery County, a full-color traffic signal replaced a flashing pedestrian signal at the intersection of the Matthew Henson Trail. The project added a continental crosswalk, a straight-line crossing in the median and “passive detection” – a system in which sensors detect pedestrians and bicyclists standing in the flat landing area and activate the pedestrian signal.



In Anne Arundel County, a High-intensity Activated Crosswalk (HAWK) beacon was activated on MD 450 (West Street) in front of the Michael E. Busch Annapolis Library. This was only the second HAWK beacon that MDOT SHA has installed on a Maryland road.

Unlike a standard traffic signal, the HAWK beacon's lights remain off until a pedestrian activates the beacon by pressing the “walk” button. When activated, the beacon flashes yellow, then changes to steady yellow, followed by steady red lights. Once the steady red lights appear, drivers must stop, and pedestrians receive a walk indication. The steady red lights then change to flashing red lights. Motorists must still stop but may proceed with caution if no pedestrians are in the crosswalk.

And, in Frederick County, a crew recently completed work on installing a paved bicycle path next to the J-turns along US 15 to make it safer for bicyclists to cross this highway at an intersection. To cross, bicyclists travel to the shoulder of the roadway. When there's a safe and appropriate gap in traffic, they cross one direction of the road to the marked bicycle path in the median before crossing the other side of US 15 to the shoulder to continue their destination. More J-turns and bicycle paths will be installed at additional intersections along US 15.

IMPROVEMENTS HELP WITH HOSPITAL ACCESS ON EASTERN SHORE

MDOT SHA completed a new turn lane and sidewalk improvements along MD 346 (Old Ocean City Boulevard) between Healthway Drive and US 113 (Worcester Highway) in Berlin near Atlantic General



Hospital. The new lane and accompanying ramps provide a free-flowing connection between Healthway Drive

and US 113 (Worcester Highway). This greatly improves egress from Atlantic General Hospital and surrounding medical facilities, particularly during peak periods such as shift changes. The new sidewalk and related improvements protect pedestrians from the travel lane and provide heightened motorist awareness.

The project took about four months to construct. Additional improvements included realignment/ restriping of all MD 346 lanes, extension of the left turn lane from southbound US 113 to MD 346 and new stormwater management infrastructure.

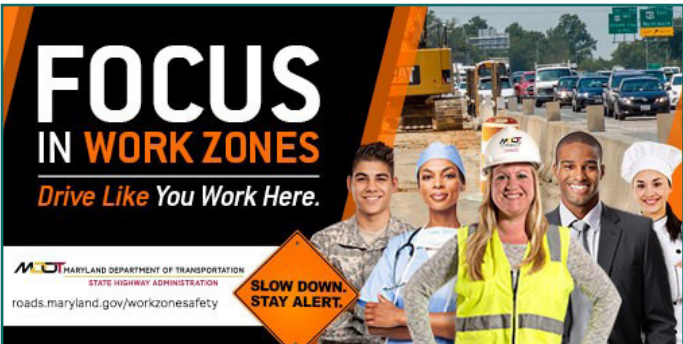
SAFETY EDUCATION CAMPAIGNS AND OUTREACH

Work Zone Safety Remains a Priority

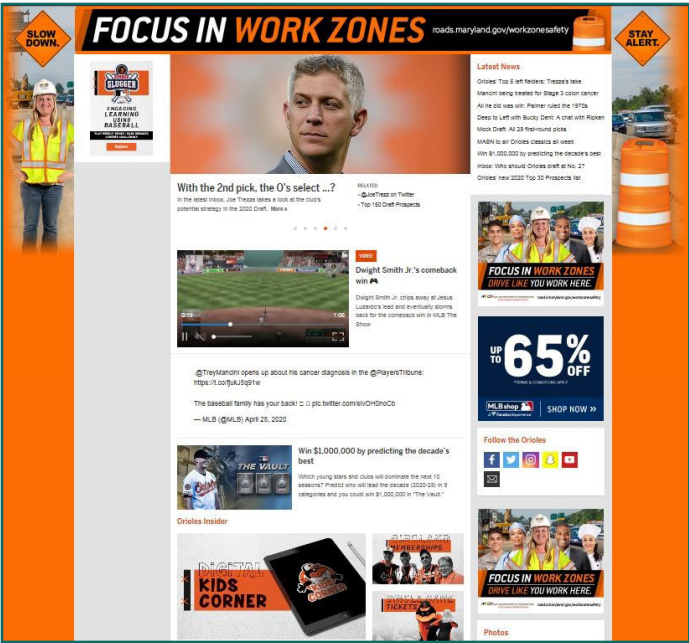
Work zones are an integral part of MDOT SHA's roadway improvements and despite COVID-19, crew were able to continue to work on a record high number of projects while following the guidance of the Centers for Disease Control (CDC) and their recommendations. Committed to reducing work zone crashes, increasing awareness of responsible driving in work zones, and ultimately keeping both our workers and customers safe, launching our Work Zone Safety campaign in April during Work Zone Awareness Month remained a priority.



Unable to hold a public event during this annual observance, MDOT SHA adapted and proceeded with an aggressive digital campaign. A toolkit with graphics and messages were developed and distributed to MDOT's other transportation business units and our partners for their social media platforms and websites. Running audio and banner ads on Pandora resulted in 588,000 impressions and 123 clicks to our website. The Baltimore Orioles provided free digital advertising



space on their website resulting in more than 60,000 display banner and column ad impressions. And we reached out to radio stations in the Baltimore and Washington markets and were able to secure 348 public service announcements.



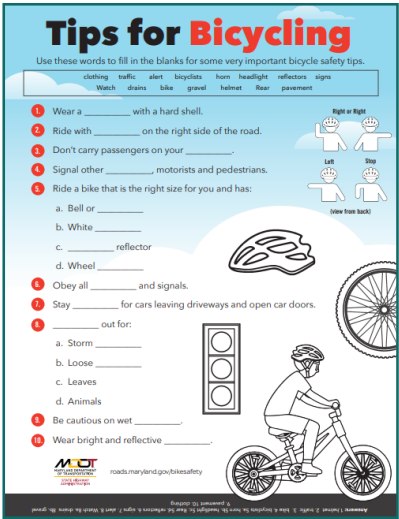
Bicycle Safety – We’re on this Road Together
MDOT SHA designs and builds roadways for all users including bicyclists. Through a combination of grassroots outreach, social media, advertising and public relations, our Bicycle Safety campaign’s goal was to raise awareness, reinforce safe riding and driving behaviors, and reduce the number of bicycle-related crashes.

Due to COVID, MDOT SHA’s grassroots outreach activities were limited to attending just two of the many events our safety ambassadors typically attend. The two events that occurred in February and early March provided an opportunity to distribute educational items and promote bicycle safety to several thousand people. Later in the summer, MDOT SHA partnered with Prince George’s County and provided bike reflectors to parents attending Helmet Grab and Go events held at 10 community centers.



to commemorate National Bicycle Month was cancelled, it did not stop MDOT SHA’s work. We utilized social media to reach all types of roadway users urging them to look out for each other and follow the rules of the road. Motorists were reminded about the increase in bicycle activity with children and many adults home during the day and implored to leave three feet when passing. Bicyclists were encouraged to practice social distancing and ride with the traffic.

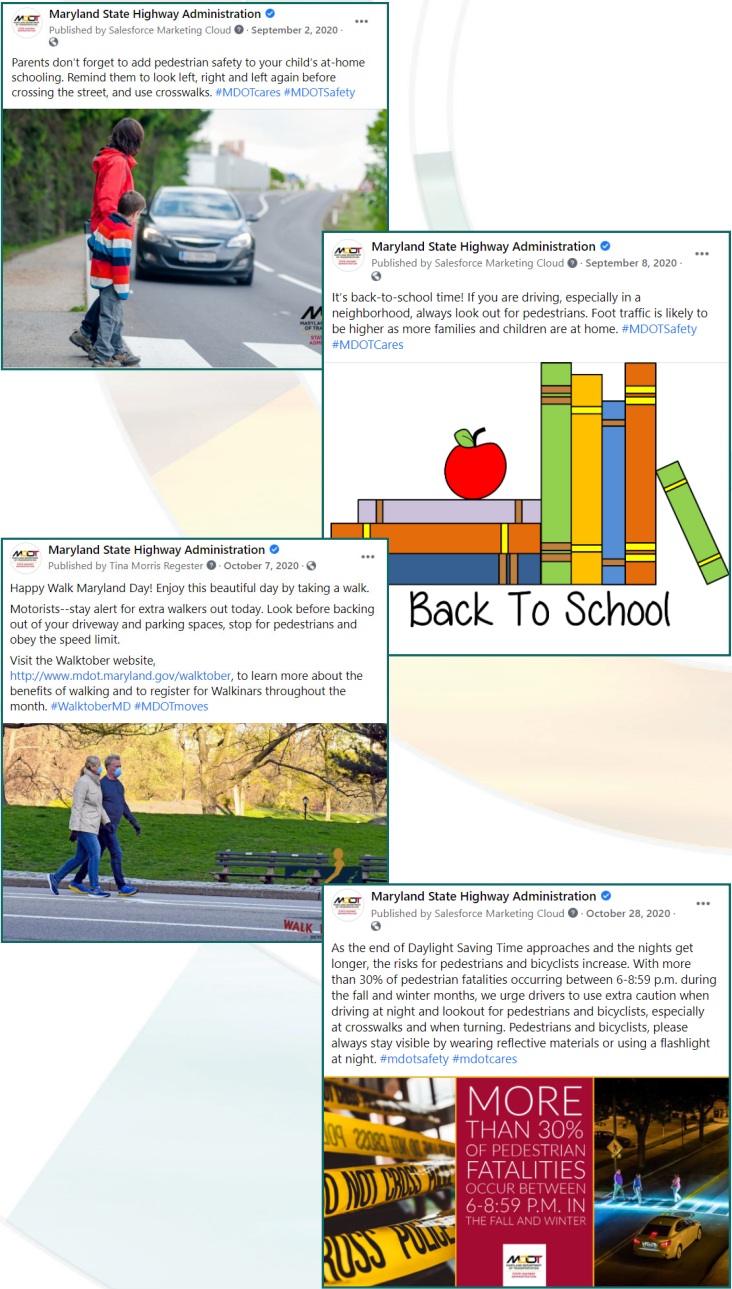
Radio stations in both the Baltimore and Washington markets played free public service announcements in May, and the Baltimore Orioles ran our safety messages on their website. In September, MDOT SHA partnered with Bike Maryland, the Baltimore Metropolitan Council, and other groups for the first Virtual Bike Week that took place on September 21-25. We created a children’s bike activity sheet and a hand-signal quiz that were housed on our website and shared on social media. An in-house public service announcement and other messages were uploaded on social media reminding both motorists and bicyclists that “We’re on this Road Together.”



Pedestrian Safety
On average, 100 pedestrians are killed each year in Maryland and most incidents are preventable. Even one life lost is too many. To keep all roadway users safe, especially vulnerable pedestrians, MDOT SHA’s Pedestrian Safety campaign supports our context-driven approach for planning and engineering roadways that provides safe access and mobility for all users.

COVID-19 prevented us from attending public outreach events, holding our annual back-to-school press conference, and conducting assemblies in schools throughout the State. Once again, we adapted and adjusted our plan focusing on running public service announcements, having a strong social media presence throughout the year, and seeking partnering opportunities. MDOT SHA joined our other business units for the first ever Walktober held in October during National Pedestrian Safety Month and saturated our social media pages with important safety messages.

While we continued to focus on urging drivers and pedestrians to stay alert and follow the rules of the road, we added additional messaging based on COVID-19 safety recommendations. Motorists were asked to drive only for essential purposes and to look out for children who may be out during the day taking breaks from virtual learning. Pedestrians were encouraged to follow social distancing guidelines and to use crosswalks.



NEW—Roadside Emergencies Safety

In the fall of 2020, MDOT SHA partnered with multiple State agencies and came together on a Roadside Emergencies Safety campaign. It provided guidance to motorists to keep them and others safe in the event of an emergency incident or minor vehicle crash while traveling. We issued a press release and created social media messages sharing with motorists and passengers the dangers created by roadside emergencies and vehicle breakdowns. We reminded them that all incidents are unique and should be treated as such when making a decision on staying in or leaving their vehicles. They were urged to use caution and common sense, prepare their vehicles in advance to avoid and minimize emergencies, assess the situation when one occurs, use good judgement in deciding how to respond and stay vigilant for other motorists.



PURSUIT OF EXCELLENCE

MDOT SHA WINS TRANSPORTATION AWARD FOR EXCELLENCE IN INNOVATION

MDOT SHA received an award for excellence from the Maryland State Transportation Innovation Council (STIC) for programs and a leadership team that work to build, grow, and maintain a culture of innovation in Maryland. MDOT SHA accepted the award in memory of their late colleague Aaron Jones. Aaron energized STIC in coordination with the Federal Highway Administration MDOT SHA formed a new STIC membership and work plan. Under Aaron's leadership, Maryland transportation stakeholders embraced innovation and made it a permanent tool in their project delivery.

Maryland STIC was one of only two winners of the 2020 STIC Excellence Award announced in December at the AASHTO Board of Directors meeting. The evaluation team remarked that Maryland STIC's nomination stood out for its multi-stakeholder leadership team that embraces innovation at a strategic level and is creating a culture of innovation in Maryland.



MDOT PROJECTS WIN AWARDS AT ANNUAL MDQI CONFERENCE

Maryland Department of Transportation (MDOT) projects received 17 awards at the recent Maryland Quality Initiative (MdQI) conference at the Baltimore Convention Center in January 2020. The MdQI Awards of Excellence recognized project

teams and private sector partners for exceptional projects in 2019. MDOT SHA led the awards total at the ceremony with six MdQI honors. MDOT SHA captured Project of the Year honors in the category of projects under \$5 million for construction of a retaining wall to promote slope stabilization along Conowingo Road in Harford County. Other MDOT SHA award-winning projects included the \$33.4 million widening and reconstruction of MD 32 between MD 108 and Linden Church Road in Howard County; the \$21 million bridge replacement at MD 261 over Fishing Creek in Calvert County; and intersection and safety improvements at US 50 and Sixty Foot Road in Wicomico County.



MdQI Project of the Year - Under \$5 Million
Project: Retaining Wall on US 1 (Conowingo Road)
Scope: Slope stabilization
Location: Darlington, Maryland south of the Conowingo Hydro Station
Cost: \$1.7 million
Firms: Whitman, Requardt and Associates, LLP - Baltimore, MD
Mercado Consultants - Columbia, MD
JJID, Inc. - Bear, DE

MBE/WBE Award Engineering
Project: US 50 at Sixty Foot Road Geometric Improvements
Scope: Intersection upgrades to ensure traffic safety
Location: US 50 / Sixty Foot Road intersection
Cost: \$600,000
County/City: Wicomico County
MBE/WBE Firm: Mercado Consultants - Columbia, MD

Partnering – Project Under \$5 Million
Project: MD 224 Bridge over Branch of Potomac River
Scope: Small structure replacement
Location: MD 224 over branch of Potomac River
Cost: \$1.1 million
County/City: Calvert County
Firm: Anchor Construction - Washington, DC

Partnering – Project Over \$10 Million
Project: MD 261 Bridge over Fishing Creek
Scope: Bridge replacement
Location: MD 261 bridge connecting the towns of North Beach and Chesapeake Beach
Cost: \$21 million
County/City: Calvert County
Firms: Wagman Inc. - York, PA
Town of Chesapeake Beach

Modal Awards – Projects Under \$5 Million
Project: Retaining Wall on US 1 (Conowingo Road)
Scope: Slope stabilization
Location: Along US 1 south of the Conowingo Hydroelectric Generating Station in Darlington
Cost: \$1.7 million
County/City: Harford County
Firms: Whitman, Requardt and Associates, LLP - Baltimore, MD
Mercado Consultants - Columbia, MD
JJID, Inc. - Bear, DE

Modal Awards – Project Over \$5 Million
Project: MD 32 Design-Build
Scope: Roadway Widening/Reconstruction
Location: From MD 108 to north of Linden Church Road
Cost: \$33.4 million
County/City: Montgomery County
Firms: Whitman, Requardt and Associates - Baltimore, MD
JMT - Hunt Valley, MD
Concrete General - Gaithersburg, MD

OMT WINS PRESTIGIOUS PAVEMENT AWARD

Paving a road is a surprisingly technical task that requires the evaluation of surfaces that should endure for years under the repeated pounding of cars and trucks. MDOT SHA takes pride in building roads that last. The people who appreciate this technical expertise recognized the Office of Material Technology (OMT) with a coveted prize for endurance.

The Asphalt Pavement Alliance (APA) announced in May 2020 that OMT was the winner of the Perpetual Pavement Award (PPA) for an 8.3-mile section of six-lane I-70 WB in Frederick County. The award, for work done in 2019, is MDOT SHA's fifth PPA prize.

"We are honored by the selection of I-70 WB from MP 20.85 to 29.19 for the 2019 Perpetual Pavement Award," said OMT Director Sejal Barot. "The selected project is subject to very high truck traffic and frequent freeze-thaw cycles due to wet-freeze climatic conditions. The success of this project was possible due to continued successful partnership efforts between MDOT SHA, industry and the contracting community."



MDOT SHA HONORED WITH MDOT ENVIRONMENTAL EXCELLENCE AWARD

Receiving an award from a parent organization confirms that you're both synchronizing your goals and operations. In June 2020, MDOT Secretary Greg Slater named MDOT SHA's Full Stream Delivery Restoration as an Environmental Excellence Award winner in the sustainability category. Secretary Slater cited MDOT SHA for halting sediment pollution at its source and for maximizing the contracting process to deliver successful projects.



The award read, “When confronted with the task of fulfilling permitting requirements for the newly issued municipal separate storm sewer system (MS4) permit, MDOT SHA decided to explore

innovative contracting solutions, leading to the development of a full delivery contract. This model integrates property acquisitions, design, permitting, construction and success monitoring; typically allowing for more rapid progress. In addition to the novel contracting methodology, the project included a large-scale stream restoration. Stream restoration is a unique MS4 restoration approach in that it is the only approved technique available that prevents sediment pollution at the source. Nineteen contracts were executed totaling over 150,000 linear feet of work, which are currently in various stages of development including two that have been completed.”

OD WINS TRAINING AWARD FOR SECOND YEAR IN A ROW

The Organizational Development (OD) Division has won the prestigious *Training Magazine's* Top 100 award for the second consecutive year. Training magazine's Training Top 100 Award winners are the organizations with the most successful learning and development programs in the world. It has been the premier learning industry awards program for 20-plus years. The 2021 Training Top 100 winners were announced at the end of November 2020 and rankings were scheduled to be announced during an interactive Virtual Gala to be held in February during the 2021 Virtual Training Conference. MDOT SHA competed for this award with major corporations. For the second year straight, MDOT SHA was the only governmental organization to win.



ALL-GIRL MD TEAMS MAKE TRAC NATIONALS

Three Maryland Student Transportation and Civil Engineering (TRAC) Bridge Building Teams, including two all-female teams representing schools in Prince George's and Anne Arundel counties, were selected as finalists in the American Association of State Highway Transportation Officials' (AASHTO) National Bridge Challenge.

Students invested countless extra hours learning and practicing bridge design principles. While we were all disappointed about the cancellation of the Spring National Conference, they represented Maryland admirably and made us all very proud.

The three TRAC finalist teams were Chesapeake Lighthouse Foundation (CLF) students, representing Chesapeake Science Point (CSP) in Hanover and Chesapeake Math and IT (CMIT) North Middle School in Laurel.

The AASHTO National Bridge Challenge is part of the TRAC program, which MDOT SHA has participated in for the last three years. In all, 17 Maryland teams from across the Baltimore-Washington metropolitan areas submitted balsa wood bridge projects to compete in this national challenge, which encourages careers in civil engineering.

OC HONORED FOR OUTSTANDING COMMUNICATIONS EFFORTS

MDOT SHA'S Office of Communications (OC) won five excellence awards from the Public Relations Society of America Maryland Chapter (PRSA Maryland) for campaigns urging safe driving and informing Marylanders about ongoing highway projects.

The categories include online video, social media, website and newspaper columns for the annual “Best in Maryland” awards competition. The winners were announced during a December online virtual ceremony.

The five campaigns and products recognized are:

- Editorials/Columns: Marylanders: Move Over for Emergency Vehicles
- Events and Observances: Work Zone Safety Week
- Social Media: “Move Over” law safety campaign
- Video: Virtual ribbon cutting for Watkins Mill interchange project
- Website: Project Portal page provides details and updates on individual projects



MDOT SHA also won a national award of excellence for its “Look Up, Look Out” video urging teenage drivers not to text and drive.

The American Association for State Highway Transportation Officials (AASHTO) Transportation Communications Committee (TransComm) selected MDOT SHA's video in the category of public service announcements, video or radio.

“We are committed to using every tool, including creative marketing, in order to reach people about the dangers of distracted driving, speeding and work zone safety,” MDOT SHA Administrator Tim Smith said. “We are grateful to be recognized for our efforts to keep Maryland roads safe.”

The 30-second video depicts situations where teenagers would never think of texting or talking on their phones – at the podium of a graduation ceremony, while practicing with a football team, during a ballet performance – and likens those forbidden instances to dangerous behavior behind the wheel of a car.



MDOT SHA debuted its “Look Up, Look Out” Pedestrian Safety Public Service Announcement in spring 2019. Many of the scenes were filmed at Bishop McNamara High School in Forestville, MD and feature actual McNamara students.

Awards were presented to state departments of transportation during a TransComm video conference on August 25.



Larry Hogan
Governor

Boyd K. Rutherford
Lieutenant Governor

Gregory Slater
MDOT Secretary

Tim Smith, P.E.
MDOT SHA Administrator

Maryland Department of Transportation
State Highway Administration
707 North Calvert Street
Baltimore, Maryland 21202

800-323-MSHA | TTY 800.735.2258

roads.maryland.gov

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