Goal: Deliver System Quality
Deliver a Reliable, High-Quality, Integrated Transportation System

Key Outcomes: Four objectives and 16 performance measures will support the goal to deliver system quality. By investing to achieve system quality, MDOT will work to create an infrastructure program that is sustainable financially, environmentally resilient and maintains a state of good repair.

MDOT is committed to delivering a high-quality, reliable and integrated multimodal transportation system. To implement this goal, MDOT has been working strategically to address more system preservation needs, ensuring Maryland's multimodal transportation system is safe, reliable and convenient. In 2023 and 2024, MDOT won several Maryland Quality Initiative (MdQI) awards, including the Nice/Middleton Bridge Replacement Project and the Bay Bridge Automated Lane Closure System. MdQI is a Maryland transportation industry organizations that supports and quality improvement in the transportation system for Marylanders.

To promote resilient infrastructure, TSO's Office of Climate Change Resilience and Adaptation hosted a three-day Federal Highway Administration (FHWA) National Highway Institute training on "Addressing Climate Resilience in Highway Project Development and Preliminary Design" in November 2023. Additionally, MDOT developed initial criteria for vetting projects eligible for FHWA's Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) formula program funds and submitted an MDOT Transportation Resilience Improvement Plan to FHWA's Maryland Division, and was approved.

After the tragic collapse of the Key Bridge in March 2024, MDOT is leaving no stone unturned to expedite its safe rebuilding while improving alternate transportation options to lessen the impact on the current roadway network due to the bridge's inoperability.

Objective: Provide a Multimodal System Resilient to Changing Conditions and Hazards

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

FACING CHALLENGES

LOWER IS BETTER

11% 2023*

11% 2024

FISCAL YEAR
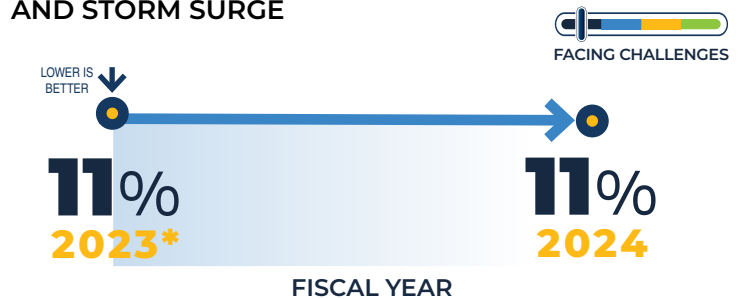
TARGET: OVERALL DECREASE

* 2023 data have been revised from previous report due to a change in methodology.

What Is the Trend?

- In FY 2023 and FY 2024, 11% of lane-miles/fixed guideway transit-miles were susceptible to flooding and storm surge.

- In 2023, SHA released the Highway Drainage Manual, which includes standards for uniform design practices and encourages engineers to consider potential risks. MDOT also established a Climate-Focused Funding Portal for MDOT modal administrations to submit potential resilience projects.

What Are Future Strategies?

- MDOT is preparing a Risk and Resiliency Assessment Policy for investments to ensure flooding and storm surge impact considerations occur at the early stages of project development. MDOT will continue to develop tools and deliver training to support risk and resilience assessments.

- MDOT released its Transportation Resilience Improvement Plan 2024 to guide strategic investments in critical infrastructure, proactively identify and address actions, and align adaptation and mitigation efforts with MDOT's resilience objectives.

Objective: Increase the Percentage of State-Owned or Funded Facilities and Assets in a State of Good Repair

UNFUNDED STATE OF GOOD REPAIR BACKLOG LOWER IS BETTER ↓

	FY 2023	FY 2024
Unfunded State of Good Repair Backlog	$2.2 billion*	$3.8 billion

TARGET: NONE

This data has been revised from the last report due to a methodology change.
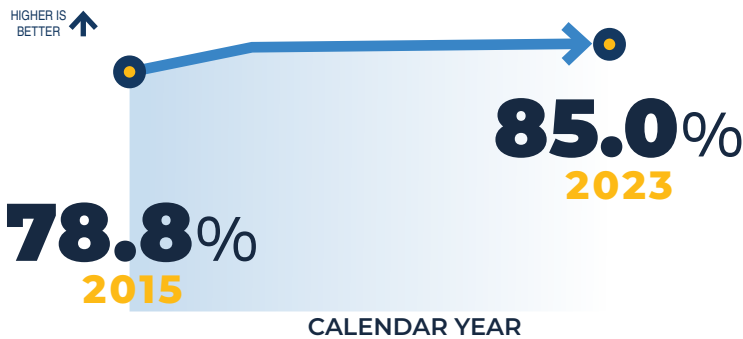

What Is the Trend?

- Based on the seven critical asset classes, in FY 2024, there were $3.8 billion in projects that were still unfunded from the state of good repair backlog, compared to $2.2 billion in FY 2023.

- There are limited State funds for state of good repair improvements, meanwhile costs of goods and materials have been on the rise, as well as inflation.

What Are Future Strategies?

- MDOT is updating the Strategic Asset Management Plan to identify strategic goals and key needs and will continue to seek innovative financing for enhancement projects in order to free up funding for state of good repair.

- In June 2024, MDOT completed the preliminary planning of MD 198 (Old Columbia Pike/Spencerville Road) Burtonsville Improvement Project. The project includes improvements to multimodal connectivity, accessibility and roadway safety. Once the funding becomes available, the next step is designing the roadway improvements.

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

HIGHER IS BETTER ↑

85.0% 2023

78.8% 2015

CALENDAR YEAR

TARGET: 2030: 85%

What Is the Trend?

- The overall preferred maintenance condition of the Maryland State highway network has remained steady at 85% in the last year, with an 84% average for the last 10 years.

- Some of the highway improvement projects completed in the past year include:
  - US 40 (Pulaski Highway) replacement and widening of bridge decks and superstructures over Little Gunpowder Falls and Big Gunpowder Falls.
  - MD 500 (Queens Chapel Road), from MD 208 (Hamilton Street) to Eastern Avenue, construction of landscaped median with sidewalk and crosswalk improvements.
  - MD 100 (Paul T. Pitcher Memorial Highway), from Howard County Line to MD 170, roadway safety and resurfacing improvements.

What Are Future Strategies?

- SHA plans to invest in a new asset management system that will track individual asset performance at a more granular level, which will enable SHA to allocate funding based on a pragmatic/individual asset approach. This improvement will support data-driven and strategic investment planning in a way that the current approach to assessing performance, which consists of a visual inspection with a customer perspective based rating system, has not.

OVERALL ACCEPTABLE PAVEMENT CONDITION

ACCEPTABLE PAVEMENT CONDITION*

HIGHER IS BETTER ↑

92 % **2015**

91% **2023**
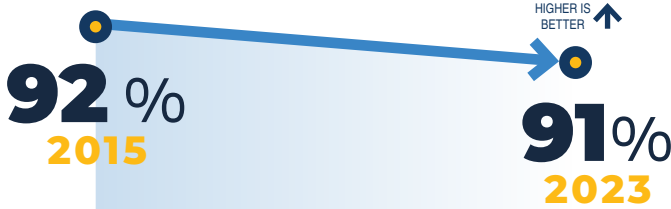
CALENDAR YEAR

TARGET: 2030: 90%; 2050: 95%

STATE OF GOOD REPAIR REMAINING SERVICE LIFE**

17yrs. **2015**

17yrs. **2023**

CALENDAR YEAR

TARGET: 2030: 20 YEARS; 2050: 20 YEARS

"Acceptable" pavement condition includes pavements in both "Fair" and "Good" condition.

** Remaining Service Life represents condition on a scale of 0 to 50 years, where 0 years is "Poor", "Fair" is 0 to 20 years, and "Good" is 20 to 50 years.*
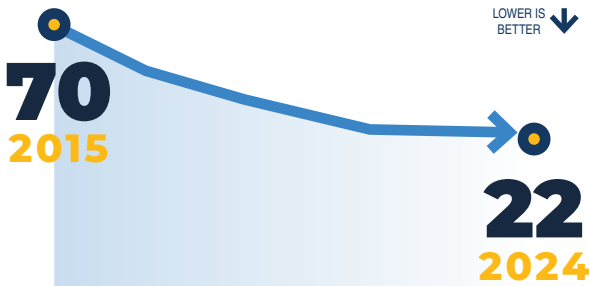
What Is the Trend?

- It is expected that the percentage of pavements in "Acceptable" condition will decline from 91% in 2023 to 82% after 2027, with the Remaining Service Life deteriorating from 17 years to 15 years.

- Since the percentage of "Poor" pavements is expected to double due to potential budget shortfalls, it likely will cost exponentially more to restore pavements to a state of good repair as a result of more pavements needing costly reconstruction.

- In CY 2023, SHA resurfaced about 5.1% of its pavement network, and preventive maintenance covered an additional 10.2% of the network, both slightly higher than reported in CY 2022.

What Are Future Strategies?

- SHA continues to increase the use of non-traditional and innovative pavement preservation treatments to extend the service life of SHA roadways at the lowest possible cost.

NUMBER OF ALL MARYLAND BRIDGES THAT ARE IN POOR CONDITION*

LOWER IS BETTER ↓

70 **2015**

22 **2024**

CALENDAR YEAR

TARGETS: 2030: 30; 2050: 50

* 2024 data are preliminary and subject to change.

What Is the Trend?

- SHA recorded 22 poor rated bridges during their annual condition submission to FHWA in March 2024, a big reduction since 2015. This success can be attributed to the efficient use of federal funds for current bridge replacement projects and the successful bridge rehabilitation and preservation program.

- SHA continued the bridge rehabilitation and preservation program to address bridges rated as "poor" or "fair" to bring them into a state of good repair and minimize the number of bridges that would achieve a poor rating without rehabilitation.

What Are Future Strategies?

- SHA will use National Bridge Element data analysis to refine the current Bridge Asset Lifecycle Management Plan. The analysis results in combination with the National Bridge Inventory ratings will refine state of good repair definitions for each bridge in the inventory.

- In August 2024, MDOT received $1.6 million under FHWA's Bridge Investment Program to support a Planning and Environmental Linkages Study of the I-68 Viaduct in Cumberland.

- SHA will continue to advertise bridge rehabilitation and replacement projects to advance the bridge program. "Poor"–rated bridges such as the Capital Beltway in Prince George's County (I-495/95) and I-70 through Hagerstown and other high-volume roadways will be prioritized. A Large Bridge Program will continue to be developed to rehabilitate and replace larger bridges.
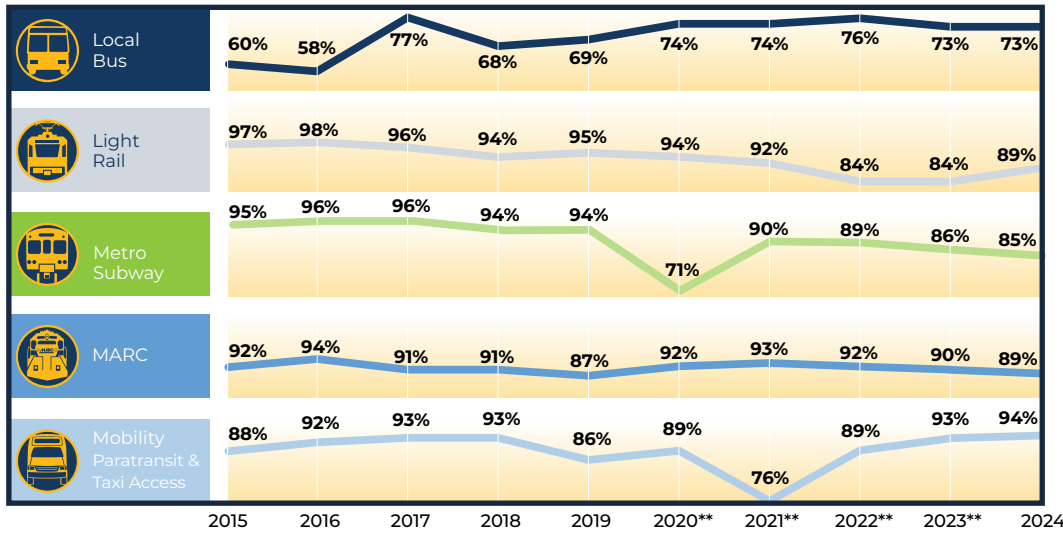
Objective: Minimize Travel Delays and Improve Reliability and Quality

PERCENT OF ALL MDOT TRANSIT SERVICE PROVIDED ON-TIME

HIGHER IS BETTER ↑

	2015	2016	2017	2018	2019	2020**	2021**	2022**	2023**	2024
Local Bus	60%	58%	77%	68%	69%	74%	74%	76%	73%	73%
Light Rail	97%	98%	96%	94%	95%	94%	92%	84%	84%	89%
Metro Subway	95%	96%	96%	94%	94%	71%	90%	89%	86%	85%
MARC	92%	94%	91%	91%	87%	92%	93%	92%	90%	89%
Mobility Paratransit & Taxi Access	88%	92%	93%	93%	86%	89%	76%	89%	93%	94%

TARGET: 2030: 99% FOR ALL EXCEPT LOCAL BUS; 2050: 90%

* MARC and Metro data have been revised from previous report.

** 2020, 2021, 2022 and 2023 data have been revised from previous report.
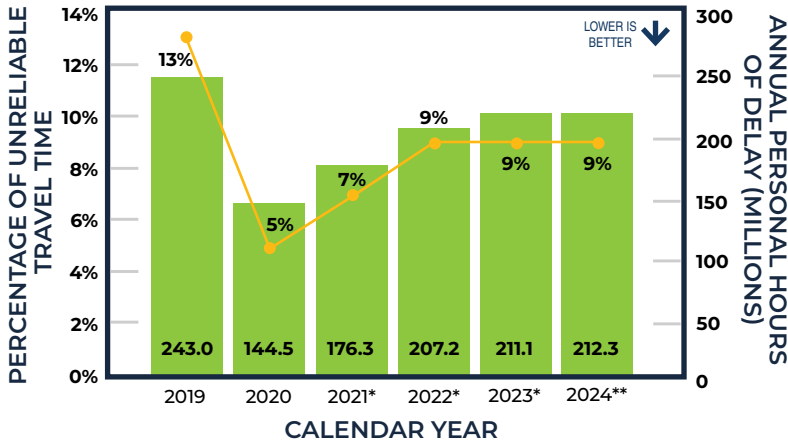
What Is the Trend?

- In 2024, on-time performance (OTP) for Light Rail experienced substantial improvement, increasing from 84% in 2023 to 89% in 2024, while OTP for Metro Subway and MARC decreased by 1%.
- The Key Bridge collapse in March 2024 has continued to disrupt traffic and increase congestion, which has impacted the OTP of MDOT transit service.
- MTA added additional management staff to better oversee and support operators.
- MTA offers a free subscription to the Transit Royale version of its transit app, which includes access to upcoming departures for transit lines, route maps and vehicle tracking.
- MTA continues to focus on investments like dedicated bus lanes and transit signal priority in Baltimore City to improve transit travel times and reliability.

What Are Future Strategies?

- MTA utilizes real-time data to assess the performance of its vehicles while in service to help build better routes and operator schedules.
- MTA received a $213 million Rail Vehicle Replacement grant award to replace each Light Rail car in the fleet with a modern, low-floor vehicle allowing for easier and more accessible boarding. The new Metro vehicles are in testing and will begin revenue service in 2025.

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

Chart: Annual person hours of delay (millions) and travel time reliability by calendar year.

Calendar Year	Person hours of delay (millions)	Travel time reliability
2019	243.0	13%
2020	144.5	5%
2021*	176.3	7%
2022*	207.2	9%
2023*	211.1	9%
2024**	212.3	9%

LOWER IS BETTER

Legend:
- Annual person hours of delay (millions)
- Travel time reliability

TARGET: 2030: 202 MILLION HOURS; 2050: 201 MILLION HOURS

*Data have been revised from previous report.
**2024 data are projected and subject to change.

TRUCK HOURS OF DELAY AND TRUCK RELIABILITY ON MARYLAND PUBLIC ROADS

Calendar Year	Truck hours of delay (millions)	Truck reliability
2019	6.3	1.95
2020	3.7	1.69
2021	4.7	1.71
2022	5.5	1.76
2023	5.7	1.81
2024*	6.0	1.83

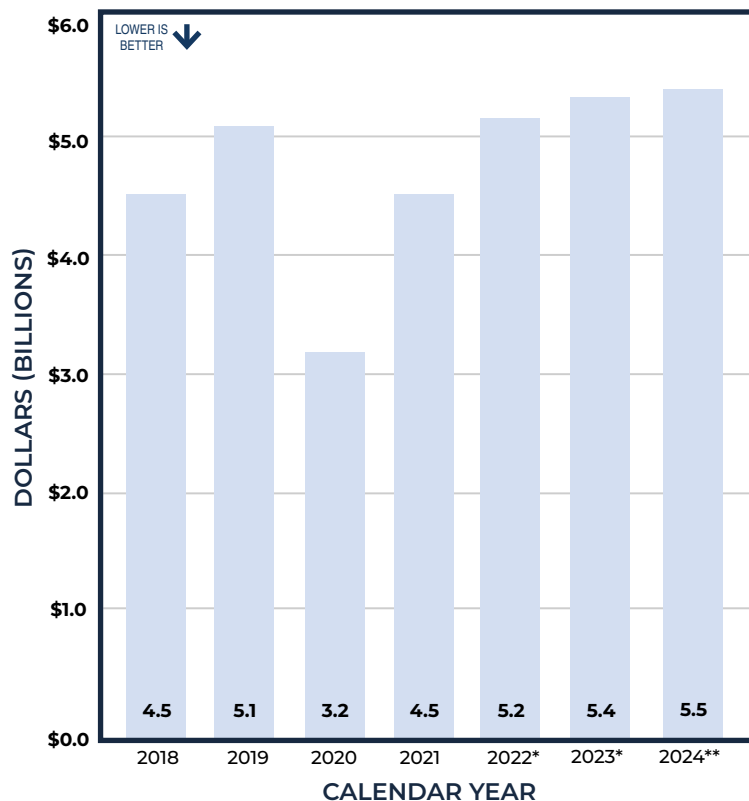LOWER IS BETTER

Legend:
- Truck hours of delay (millions)
- Truck reliability

TARGET: 2030: 5.3 MILLION HOURS; 2050: 5.3 MILLION HOURS

*2024 data are projected and subject to change.

Note: The methodology used for reporting the 2022 (and prior years) delay values was updated to reflect recent refinements in the Office of Planning and Preliminary Engineering's Maryland Roadway Performance Tool and because the trends calculated seem to more reasonably reflect Average Daily Traffic (ADT)/VMT and congestion trends. The methodology for reliability indices remain the same.

What Is the Trend?

- Gradual increases in person hours of delay seem to correlate with the post-pandemic increase of Vehicle Miles Traveled (VMT) starting in CY 2021. However, it is estimated that delay will continue to increase at a slower rate due to more travel outside of peak hours and VMT increasing more slowly.

What Are Future Strategies?

- MDOT is working on the Transportation Systems Management and Operations (TSMO) project on I-695 (Baltimore Beltway) from I-70 to MD 43 (White Marsh Boulevard) in Baltimore County to reduce congestion and delay and increase reliability of travel within the project area.

- MDOT is deploying Intelligent Transportation System (ITS) technology where deemed appropriate, such as the US 50 corridor from the Bay Bridge to the Eastern Shore to increase travel reliability.

- The 2022 State Freight Plan identified projects for initial National Highway Freight Program funding to improve freight movement in the State.

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

DOLLARS (BILLIONS) vs **CALENDAR YEAR**

LOWER IS BETTER

Year	2018	2019	2020	2021	2022*	2023*	2024**
Cost	4.5	5.1	3.2	4.5	5.2	5.4	5.5

TARGET: 2030: $6.0 BILLION; 2050: $10.0 BILLION

Data have been revised from previous report.

** 2024 data is projected and subject to change.*

Note: The methodology for this performance measure has been updated.

What Is the Trend?

- Overall, there is an increasing trend in annual cost of congestion on Maryland roadways. There was a pandemic-related drop in cost of congestion in CY 2020, but this continued to rise and CY 2023 showed greater cost in congestion compared to pre-pandemic levels at $5.4 billion.

What Are Future Strategies?

- MDOT will conduct evaluation of the CHART patrol program to determine continuing improvements in reduction in roadway delays and user cost savings and increases in roadway reliability.

- MDOT will complete traffic incident management (TIM) timing plans and staff training for TSMO System 1, which covers active traffic management strategies along multiple routes, including I 70, US 40, US 29 (29th Infantry Division Memorial Highway) and MD 99 (Old Frederick Road). These incident timing plans will be activated along with Freeway Incident Traffic Management Plans to optimize vehicle throughput during detours along parallel arterials.

- MDOT will finish final site selection and recommendations for Truck Parking Availability System deployment.

USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT

ON TARGET

DOLLARS (MILLIONS) vs **CALENDAR YEAR**

HIGHER IS BETTER

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Savings	$1,356	$1,512	$1,500	$1,312	$1,393	$1,080	$1,875	$2,031	$2,231

TARGET: 2030: $2.2 BILLION ; 2050: $3.0 BILLION

Data have been revised from previous report.

What Is the Trend?

- Incident management saved roadway users $2.2 billion in CY 2023, a consistent increase in savings from CY 2022 ($2.0 billion).

- In 2023, the Office of Transportation Mobility and Operations' (OTMO) CHART program responded to 70,533 incidents and disabled vehicle events on Maryland roads.

- MDOT established the Maryland State Police TIM Unit, which works directly with CHART Field Patrol Units and communicates directly with CHART traffic management centers.

- MDOT received a $11.9 million Advanced Transportation Technology and Innovation (ATTAIN) grant award to manage traffic dynamically in rural communities along the US 50 corridor between the oceanside resort areas and the Baltimore-Washington metropolitan area.

What Are Future Strategies?

- MDOT will continue to deploy field ITS assets (closed-circuit television (CCTV) cameras, traffic detectors, etc.) to improve traffic monitoring and traveler information. MDOT also will complete TIM timing plans and staff training for TSMO System 1.

Objective: Accelerate Project Completion Through Improved Project Delivery

PERCENT OF CTP PROGRAM THAT IS FUNDED WITH FEDERAL DOLLARS

31%
2016-2021

37%
2025-2030

CTP FISCAL YEARS
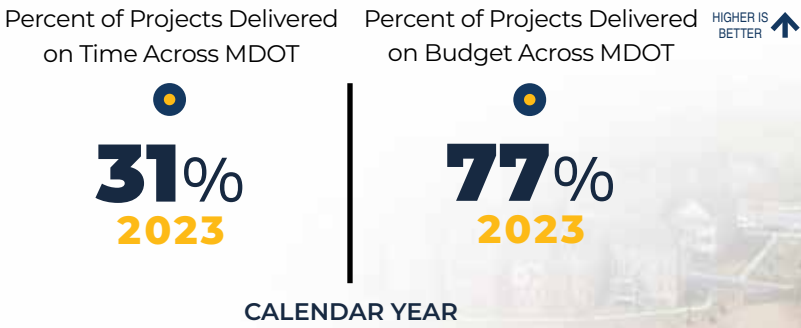
TARGET: NONE
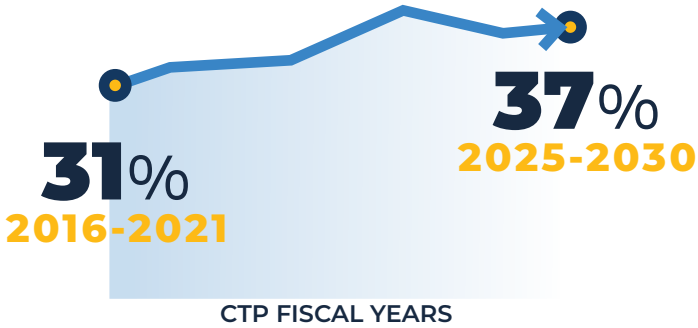
What Is the Trend?

- For the FY 2025 - FY 2030 CTP, MDOT expects to receive 37% of CTP funding from federal sources, which is a slight decrease from 41% in FY 2023 but a slight increase from 36% in FY 2022.
- The Federal Railroad Administration (FRA) awarded approximately $7 billion in projects to Maryland in CY 2023, including the Frederick Douglass Tunnel, the Susquehanna River Rail Bridge and Penn Station in Baltimore City.
- In January 2024, USDOT announced MDTA was awarded $80 million, the State's first ever Mega Grant for the I-895 at Frankfurst Avenue Interchange Improvement project in Baltimore.

What Are Future Strategies?

- MDOT will continue to seek federal grants whenever appropriate and pursue opportunities for maximizing federal match to supplement state and local funds.

PROJECT DELIVERY ACROSS MDOT*

Percent of Projects Delivered on Time Across MDOT

Percent of Projects Delivered on Budget Across MDOT

HIGHER IS BETTER

31%
2023

77%
2023

CALENDAR YEAR

TARGETS: NONE

* Measure only tracks completed major capital projects from the FY 2024 - FY 2029 CTP.

What Is the Trend?

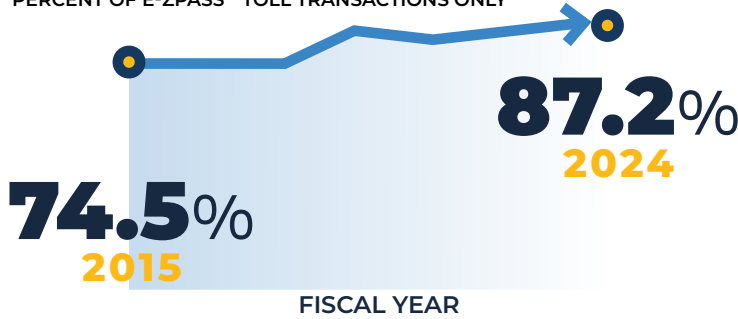- This is the first year these measures have been reported, so there is no trend yet.

What Are Future Strategies?

- Continuing to track the percentage of on-time and on-budget major capital projects will help determine actions to improve performance.

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

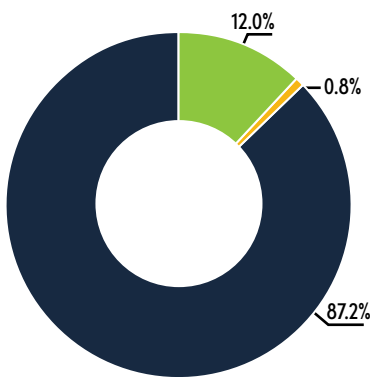**PERCENT OF E-ZPASS® TOLL TRANSACTIONS ONLY**

87.2%
2024

74.5%
2015

FISCAL YEAR

TOLL TRANSACTIONS COLLECTED IN FY 2024 BY TYPE

12.0%

0.8%

87.2%

▬ Percent of total toll transactions collected via pay-by-plate
▬ Percent of total toll transactions collected via video toll
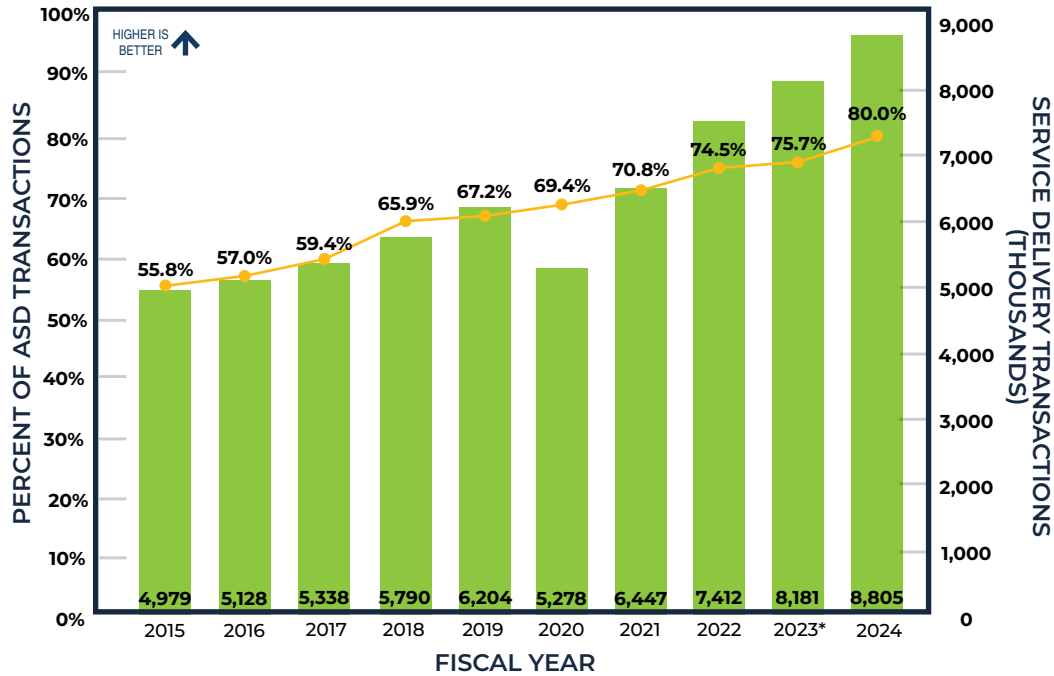▬ Percent of *E-ZPass*® toll transactions only

**TARGET: TARGET BEING DEVELOPED FOR NEXT
YEAR'S REPORT**

What Is the Trend?

- Since FY 2021, all toll transactions in Maryland are collected electronically. The percentage of toll transactions shows an increasing trend since FY 2021. In FY 2024, 87.2% of toll transactions were collected by *E-ZPass*®. The remaining 12% and 0.8% of toll transactions were collected via video toll and pay-by-plate, respectively.

What Are Future Strategies?

- MDTA is working with the Communications & Marketing team to run an educational Pay-by-Plate campaign and also is looking at completing a Request For Proposal for the out-of-State collection effort.

- MDTA is in the preliminary stages of conducting a pilot program with Maryland Department of Natural Resources to use transponders to pay for parking at parks. Additionally, MDTA Chief of Operations will be chairing the Pay-by-Car initiative to use transponders to pay at gas stations, parking garages, etc.

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

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

HIGHER IS BETTER ↑

PERCENT OF ASD TRANSACTIONS

SERVICE DELIVERY TRANSACTIONS (THOUSANDS)

Fiscal Year	Percent	Transactions
2015	55.8%	4,979
2016	57.0%	5,128
2017	59.4%	5,338
2018	65.9%	5,790
2019	67.2%	6,204
2020	69.4%	5,278
2021	70.8%	6,447
2022	74.5%	7,412
2023*	75.7%	8,181
2024	80.0%	8,805

FISCAL YEAR

■ Number of service delivery transactions
─●─ ASD transactions as percent of total transactions

TARGET: 2030: 85%; 2050: 90%

Data have been revised from previous report.

What Is the Trend?

■ The percentage of ASD transactions as percent of total transactions increased from 75.7% in FY 2023 to 80.0% in FY 2024.

■ MyMVA, which provides more than 60 online transactions, have got more than two million accounts. As of November 2024, more than 3.7 million MyMVA transactions have been completed online.

What Are Future Strategies?

■ MVA will build upon its MyMVA brand to increase ASD transactions and continue to expand ASD awareness among customers.

MVA AVERAGE COST PER TRANSACTION

LOWER IS BETTER

$16.4
2015

$16.8
2024

FISCAL YEAR

TARGET: 2030: $18.31; 2050: $18.00
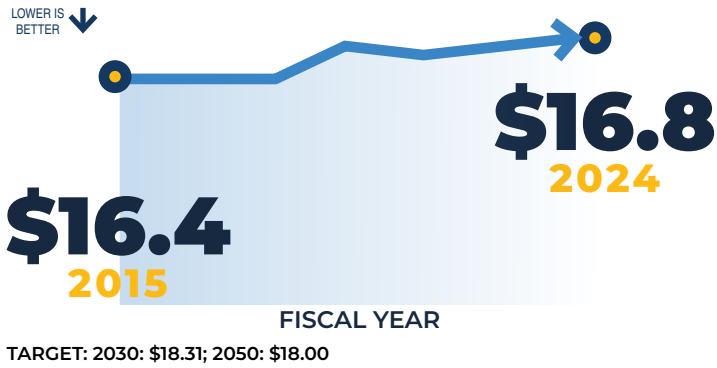
What Is the Trend?

- The MVA average cost per transaction increased from $15.53 in FY 2023 to $16.84 in FY 2024.
- Statewide salary action and cost inflation affected operating costs across the board. As MVA continues to implement its systems' modernization, integration and efficiencies, the cost per transaction will normalize.

What Are Future Strategies?

- MVA continues to partner with other State agencies and look for ways to increase efficiencies, internally and for its customers. As MVA is better able to coordinate with the government partners, it can offer more services to customers.
- MVA will engage in cost-effective business practices through the employment of better technology and operational practices and to increase the use of ASD methods.