Maryland Department of Transportation

2017 ANNUAL ATTAINMENT REPORT

On Transportation System Performance

Implementing the Maryland Transportation Plan & Consolidated Transportation Program

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Pete K. Rahn
Secretary

LARRY HOGAN
► GOVERNOR

Our administration is dedicated to providing reliable, safe and efficient transportation to all who live in and travel through the State of Maryland. Our transportation system facilitates economic growth, fosters job creation, supports business development and improves our overall quality of life. The Helen Delich Bentley Port of Baltimore and the Baltimore/Washington International Thurgood Marshall Airport transport travelers and goods, as well as employ thousands of workers who contribute to our economic vitality and quality of life.

The Maryland Department of Transportation Attainment Report provides a comprehensive review of how well transportation is performing for the State of Maryland. This report will detail our progress on major projects, including our commitment of an unprecedented additional $2 billion in shovel-ready infrastructure projects, restoration of hundreds of millions of dollars in highway user revenues to local governments, and the replacement or repair of every structurally deficient state-owned bridge.

We have exceeded expectations with our success stories at the Port of Baltimore and BWI Marshall Airport. Maryland is now welcoming the world by accommodating some of the largest containers ships on the East Coast, especially those new larger ships coming through the Panama Canal. And, BWI Marshall Airport has set an all-time record high of nearly 24 million passengers coming through the gates of our airport.

We are focused on improving our transportation infrastructure with the transformative Baltimore Link Transit System, which is a long-term commitment to major improvements for mass transit in the Baltimore region. We have dedicated $765 million in funding for the construction of a new Harry W. Nice Memorial Bridge, which is essential to thousands of Marylanders who depend on this bridge for work, business and recreation.

The Hogan Administration will continue to plan and invest in safe, sustainable and innovative transportation solutions. Maryland plays an important role in transportation throughout the Capital Region and the eastern United States, and with your continued support, we can ensure that our state remains open for business!

PETE K. RAHN
► TRANSPORTATION SECRETARY

The Maryland Department of Transportation (MDOT) is a customer-driven agency that directly touches the lives of Maryland residents and visitors each and every day. We facilitate the movement of millions of people and the daily flow of goods and services helping connect our customers to life's opportunities.

We serve our customers as "One MDOT" through the work of our six transportation business units. We strive to ensure Maryland residents and visitors enjoy a transportation system that is safe, reliable and a key contributor to the State's continued economic prosperity. As Secretary of this remarkable agency, I manage a $4.7 billion annual budget (FY 2017) and lead more than 11,000 employees, all of whom are dedicated to meeting the needs of our customers.

The Annual Attainment Report measures our progress toward achieving our strategic goals through our investment in projects in our Consolidated Transportation Program (CTP). Programmed investments include roadway and transit investments, improvements to the Helen Delich Bentley Port of Baltimore and the Baltimore/Washington International Thurgood Marshall Airport, and the maintenance of safe, sustainable transportation facilities throughout the state.

We have assembled an excellent team and are committed to getting the most of every taxpayer dollar we spend. MDOT delivers successful projects through innovation, teamwork, accountability and enhanced communication. This report is part of the Department's accountability and communication efforts. It measures, evaluates and reports the performance of our transportation system and provides an overview of our approach to planning, funding and programming transportation improvements. It helps us understand how well we are meeting our transportation goals and needs of our customers.

I invite you to read this Annual Report and to let us know how we are doing. We strive to meet your needs as we continue to change Maryland for the better.

TABLE OF CONTENTS

Introduction 1
Transportation System Highlights 2
List of Performance Measures by Goal 3
Summary 5
System Finance & Mobility 7
Economic Prosperity 17
Safety & Security 23
System Preservation 29
Quality of Service 33
Environmental Stewardship 43
Community Vitality 51
Glossary 57
List of Performance Measures by Business Unit 58

HOW TO READ THIS DOCUMENT

This Report contains information about the Maryland Transportation System and its performance. It provides facts about the Department of Transportation and its programs, policies and investment strategies designed to address the goals of the long range Maryland Transportation Plan (MTP). This document is broken into the following sections:

- Information about the Maryland Transportation System and the Department's structure, as well as information on funding, investment, and mobility can be found in the beginning of this Report. The Introduction of the Report also includes summary information on freight and specific modes of travel, as well as a summary of performance and a list of performance measures by goal.
- Performance graphics and data as well as discussions on performance and improvement strategies for each of the Department's six goals is the heart of this document in the middle of this Report.
- In back of this Report is a Glossary and list of all of the transportation performance measures tracked in this Report.

MARYLAND TRANSPORTATION BUSINESS UNITS

ACRONYM	BUSINESS UNIT
TSO	The Secretary's Office
MAA	Maryland Aviation Administration
MPA	Maryland Port Administration
MTA	Maryland Transit Administration
MDTA	Maryland Transportation Authority
MVA	Motor Vehicle Administration
SHA	State Highway Administration

The State of Maryland also supports:

WMATA	Washington Metropolitan Area Transit Authority

Introduction

GUIDING MARYLAND'S TRANSPORTATION SYSTEM

The Maryland Department of Transportation's (MDOT) customers expect to travel to their destinations on a transportation system that is reliable, safe, sustainable, well-managed and that allows them to connect to life's opportunities.

Annually, MDOT evaluates and reports the performance of Maryland's transportation system through the Annual Attainment Report on Transportation System Performance (AR) according to the goals for the Maryland Transportation Plan (MTP) and the six-year budget for transportation projects, the Consolidated Transportation Program (CTP). Together, these three documents are the State Report on Transportation (SRT).

For more information on the FY 2017–FY 2022 CTP, please visit *www.CTP.maryland.gov*.

The AR provides an overview of the Maryland transportation system, system finance and mobility. MDOT assesses progress toward achieving the goals through the reporting of data for performance measures that correspond to each of the goals of the MTP, evaluates past performance and defines future strategies to improve the customer's experience on the transportation system, according to the following MTP goals:

MTP GOALS

ECONOMIC PROSPERITY – Support a healthy and competitive Maryland economy.

SAFETY & SECURITY – Enhance the safety of transportation system users and develop a transportation system that is resilient to natural or man-made hazards.

SYSTEM PRESERVATION – Preserve and maintain the State's existing transportation infrastructure and assets.

QUALITY OF SERVICE – Maintain and enhance the quality of service experienced by users of Maryland's transportation system.

ENVIRONMENTAL STEWARDSHIP – Ensure that the delivery of the State's transportation infrastructure program conserves and enhances Maryland's natural, historic and cultural resources.

COMMUNITY VITALITY – Provide options for the movement of people and goods that support communities and quality of life.

To view the MDOT Attainment Report Dashboard and previous MDOT Attainment Reports online, please visit *www.mdot.maryland.gov/newMDOT/Planning/Index.html*.

Established concurrent with the MTP, MDOT's Bicycle and Pedestrian Master Plan (2014) lays out a 20-year vision to support cycling and walking as modes of transportation in Maryland. To view the Bicycle and Pedestrian Master Plan, please visit *http://www.mdot.maryland.gov/bikewalkplan*.

Other major planning efforts that MDOT has recently completed include the Strategic Goods Movement Plan, the Statewide Freight and Rail Plans and, as required by the Maryland legislature, the Maryland Climate Action Plan.

ONE MDOT – INTEGRATING MULTIMODAL TRANSPORTATION

Maryland's transportation business units operate as ONE MDOT, working together to deliver safe and efficient transportation solutions and services. Citizens and visitors use MDOT services and transportation systems from their origin to destination, regardless of the transportation mode. MDOT strives to serve these customers with a customer-focused perspective, providing an integrated multimodal transportation system and services responsive to their needs. Statewide transportation policy, planning and programming are coordinated throughout MDOT, which includes The Secretary's Office (TSO) as well as the following:

- **MDOT-Maryland Aviation Administration (MAA)** operates Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport) and Martin State Airport, a general aviation/reliever airport northeast of Baltimore;
- **MDOT-Maryland Port Administration (MPA)** was established to increase the flow of waterborne commerce through the State of Maryland in a manner that benefits the citizens of the State and promotes the Port of Baltimore as a leading east coast hub for cargo and cruise activity;
- **MDOT-Maryland Transit Administration (MTA)** provides Local Bus, Light Rail, Metro Rail, Paratransit services and regional services through Commuter Rail (MARC) and Commuter Bus, as well as grant funding and technical assistance to all of Maryland's Locally Operated Transit Systems (LOTS) counties, in including to Annapolis and Ocean City;
- **MDOT-Motor Vehicle Administration (MVA)** serves as the gateway to Maryland's transportation infrastructure, providing a host of services for drivers and vehicles, including registration, licensing and highway safety initiatives; and
- **MDOT-State Highway Administration (SHA)** manages the State's highway system, which includes an estimated 17,132 lane miles of roads and 2,564 bridges.
- The MDOT Secretary also serves as Chairman of the **MDOT-Maryland Transportation Authority (MDTA)**, which owns, operates and maintains the State's eight toll facilities.
- MDOT is also a funding partner of the regional **Washington Metropolitan Area Transit Authority (WMATA)**, and coordinates with WMATA and the Washington Suburban Transit Commission (Montgomery and Prince George's Counties) to provide planning and oversight of transit and paratransit service in the region.

Maryland Department of Transportation

"The Maryland Department of Transportation is a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities."

TRANSPORTATION SYSTEM HIGHLIGHTS

Travel by Land

- In FY 2016, transit ridership in Maryland was 225 million, with 111 million riders on MTA local and commuter systems, 38.5 million on LOTS, and 111 million on the WMATA system in Maryland. MDOT has planned for more than $135 million in targeted BaltimoreLink, investments in the Baltimore metropolitan area, to improve transit service quality and reliability, facilitate access to high frequency transit, strengthen connections between bus and rail routes, and provide Baltimore residents and visitors better connections to life's opportunities.
- MDTA continues to improve the State's transportation system through innovative projects, such as the implementation of the cable dehumidification project on the Bay Bridge (US 50/301). This project has received local and national recognition through its cost-effective means of preserving main cable systems through dehumidification, a process proven to deliver superior protection to bridge cables.
- Ongoing construction to reconfigure northbound and southbound I-95 between the Fort McHenry Tunnel and the I-95 Express Toll Lanes (ETL) will provide four continuous mainline lanes in each direction.
- System preservation at our tunnel and bridges along I-895 is underway, including replacing the deck and superstructure of the bridge carrying I-895 over the Patapsco River Flats, replacing the Canton Viaduct portion of the roadway just north of the Baltimore Harbor Tunnel, and ongoing rehabilitation of bridge structures throughout the facility, will help to ensure a safe and reliable ride.
- In FY 2016, there was a slight increase in Maryland licensed drivers, totaling 4.3 million, with 187,991 Maryland drivers holding a Commercial Drivers License (CDL), a 2% increase from the previous year for CDL. Just under three-fourths of Maryland's entire population (71%) possess a driver's license.
- During FY 2016, over 1 million new and used vehicles were processed and sold in Maryland. The total number of Maryland registered vehicles, at 5 million, remained consistent from the prior fiscal year.
- MVA processed over 11 million transactions in FY 2016. These transactions were conducted by walk-in branch office visits, Vehicle Emissions Inspection Program (VEIP) Station visits, online, kiosks, mail-in and via the call center. As MVA offered more services online and at the self-service kiosks, there was a slight decrease in walk-in customers, with 3.8 million in-person visits to statewide branch offices.
- In FY 2016, MDOT reached an agreement on a 36-year Public Private Partnership (P3) with the State's concessionaire, Purple Line Transit Partners, to facilitate the design, construction, financing, operations and maintenance of the Purple Line, a 16.2 mile rail line that will extend from Bethesda in Montgomery County to New Carrollton in Prince George's County. The P3 approach includes a long-term, performance-based agreement between MDOT/MTA and the Purple Line Transit Partners. A P3 project partnership creates a predictable, transparent and streamlined approach for implementing and operating this project.
- Addressing structurally deficient bridges and making bridge investments has been a primary focus in 2016. For the second year in a row, the number of SHA structurally deficient bridges is at its lowest level, 69, since tracking began.
- In FY 2016, the Coordinated Highways Action Response Team (CHART) incident management program handled 115,552 events. CHART uses on-the-road response, along with the latest technologies (closed-circuit television (CCTV) cameras, dynamic message signs, weather pavement sensors and speed sensors), to keep travelers safe and traffic moving.

Travel by Air

- In FY 2016, there were 24.7 million passengers, an increase of 8.4% from the previous year and an all-time fiscal year record for total passengers at BWI Marshall Airport.
- The number of nonstop airports served totaled 78 markets in FY 2016, a slight increase from the previous fiscal year, indicating BWI's attractiveness as the airport of choice in the region as well as MAA's effective marketing efforts to increase the competitiveness of BWI Marshall Airport for business and leisure travel.

Travel by Water

- In FY 2016, MPA handled 9.8 million tons of general cargo, setting a new fiscal year record, marking the fifth consecutive fiscal year record for Maryland's public terminals.
- The Port handled 32.4 million tons of international cargo worth nearly $51 billion in FY 2015. In FY 2015, 23,000 intermodal containers were moved by rail through the Port.
- The Journal of Commerce ranked the Port of Baltimore as first in the nation for the number of containers handled per berth-hour for the second consecutive year.
- In FY 2016, the number of international cruises using the Port's terminal increased to 94, along with an additional eight port calls by international cruises.

List of Performance Measures by Goal

ECONOMIC PROSPERITY 17

TSO	Freight originating and terminating in Maryland	19
MPA	Port of Baltimore foreign cargo and MPA general cargo tonnage	20
MPA	Revenue operating expense and net income	20
MPA	International cruises using the Port of Baltimore	20
MAA	Number of nonstop airline markets served	21
MAA	Non-airline revenue per enplaned passenger (RPE)	21
SHA	Percent of roadway access permits issued within 21 days or less (after receipt of a complete application package)	22
SHA	User cost savings for the traveling public due to incident management	22

SAFETY & SECURITY 23

MVA/SHA/MDTA	Annual number of traffic fatalities and personal injuries on all roads in Maryland	24
MVA/SHA	Number of bicycle and pedestrian fatalities and injuries on all Maryland roads	25
MTA	Customer perceptions of safety on the MTA system	26
MTA	Preventable accidents per 100,000 vehicle miles	26
MAA	Rate of air field ramp incidents and accidents per 1,000 operations	27
MAA	BWI Marshall Airport crime rate	27
MAA	Number of repeat discrepancies in the annual Federal Aviation Administration's Federal Aviation Regulation inspection	28
MPA	MPA compliance with the Maritime Transportation Security Act of 2002	28
MVA	Percent of Homeland Security REAL ID Act benchmarks achieved	28

SYSTEM PRESERVATION 29

SHA & MDTA	Percent of roadway miles with acceptable ride quality	30
SHA & MDTA	Number of bridges and percent that are structurally deficient	30
MPA	Dredged material placement capacity remaining for Harbor and Poplar Island sites	31
MTA	Average fleet age of transit revenue vehicles	32

QUALITY OF SERVICE 33

SHA	Maryland driver satisfaction rating	34
SHA	Percentage of the Maryland SHA network in overall preferred maintenance condition	34
MTA	Percent of service provided on time	35
MTA	Operating cost per passenger trip	36
MTA	Operating cost per revenue vehicle mile	37
MTA	Customer satisfaction rating	38
MVA	Branch office customer visit time versus customer satisfaction rating	39
MVA	Alternative service delivery transactions as percent of total transactions	39
MVA	Cost per transaction	40
MVA	Percent of information system availability compared to total number of records maintained	40
MAA	Airline cost per enplaned passenger (CPE)	41
MAA	Percent of BWI Marshall Airport customers rating the airport "good" or "excellent" on key services	41
MPA	Average truck turn-around time at Seagirt Marine Terminal	42
MDTA	Overall customer satisfaction of *E-ZPass*® customers	42
MDTA	Percent of toll transactions collected electronically	42

ENVIRONMENTAL STEWARDSHIP 43

SHA	Percent of compliance on erosion and sediment control ratings	45
SHA	Total fuel usage of the light fleet	45
MPA	Acres of wetlands or wildlife habitat created, restored, or improved since 2000	46
MVA	Compliance rate and number of vehicles tested for Vehicle Emissions Inspection Program (VEIP) versus customer wait time	46
MDOT/SHA /MTA	Travel Demand Management; Transportation Emission Reduction Measures (TERMs)	47-48
MDOT	Transportation-related emissions by region	49
MDOT	Transportation-related greenhouse gas emissions	50

COMMUNITY VITALITY 51

MTA	Transit ridership	53
MTA	Annual revenue vehicle miles of service provided	54
SHA	Percentage of State-owned roadway directional miles within urban areas that have sidewalks and percent of sidewalks that meet Americans with Disabilities Act (ADA) compliance	55
SHA	Percentage of State-owned roadway centerline miles with a bicycle level of comfort (BLOC) grade "D" or better	55
SHA	Number of directional miles improved for bicycle access	55
SHA & MDTA	Percent of VMT in congested conditions on freeways/expressways and arterials in Maryland during the evening peak hour	56
MPA	Intermodal containers moved by rail through the Port	56

MDOT would like to offer special thanks and recognition for provision of photos: Page 11, Martha G. Baker, upper two cycling images; page 17, Bill McAllen, lower left.

Summary

Below are some of the performance results over the past year contained in this 2017 Report.

ECONOMIC PROSPERITY

- The value of originating and terminating freight in Maryland in CY 2016 totaled over $410 billion. This includes an estimated 273 million tons of freight transported by air, rail, truck and water.
- In FY 2016, MPA handled 9.8 million tons of general cargo, which is the fifth consecutive fiscal year record for the state's public terminals. Roll-on / Roll-off (RoRo) (farm, mining & construction equipment) fell 3.5% due to weakness in the overseas markets and the strong U.S. dollar but the Port remains the largest RoRo port in the U.S.
- Nonstop service from BWI Marshall Airport expanded to 78 markets in FY 2016, an increase from 77 in FY 2015. Allegiant Airlines started service from BWI Marshall Airport in April 2016, adding six nonstop destinations, including five that previously had no nonstop service.
- In CY 2015, SHA's Coordinated Highways Action Response Team (CHART) incident management program saved motorists and commercial carriers $1.4 billion in user costs and helped reduce delay on Maryland roadways, equating to 39.2 million vehicle hours.

SAFETY & SECURITY

- Maryland's fatality rate increased from 0.79 fatalities per 100 million miles of travel in CY 2014 to an estimated 0.91 in CY 2015. There were 78 more fatalities on Maryland roadways in 2015 compared to 2014 (an increase of 18%). However, the 521 fatalities in 2015 is lower than the total fatalities in 2008 (592). The increase in fatalities in CY 2015 has been observed nationwide.
- The number of pedestrian fatalities on all Maryland roads decreased from 102 in CY 2014 to 99 in CY 2015. SHA established an official pedestrian safety committee / task force that developed a strategic approach to pedestrian safety, including identifying high crash locations, performing pedestrian safety audits and implementing pedestrian safety action plans. SHA uses educational marketing in tandem with engineering solutions.
- SHA's bicycle committee continues to improve bicycle guidance and policies for SHA roadways and MDOT, with SHA, continues to install bicycle improvements when feasible within a project's scope.
- The preventable accident rate on MTA Local Bus Service has increased between CY 2015 and CY 2016, from 1.43 preventable accidents per 100,000 vehicle miles to 1.54, but is still below the target of 2.26.
- In FY 2016, the rate of airfield ramp incidents and accidents at BWI Marshall Airport decreased from 0.119 in FY 2015 per 1,000 operations to 0.073 in FY 2016. This is well below the average airfield rate of 0.244 as reported by Airports Council International.
- All of MPA terminals' Facility Security Assessment and Facility Security Plans currently meet Maritime Transportation Security Act requirements and for the past seven years have received "Excellent" ratings following the U.S. Coast Guard's annual security inspection.

SYSTEM PRESERVATION

- In CY 2016, 87% of SHA and MDTA roadway mileage provided an acceptable ride quality, meeting the short-term and long-term targets of 87%.
- For the second year in a row, the number of SHA structurally deficient bridges is at its lowest level (69) since tracking began. SHA's bridges newly rated as structurally deficient increased from 5 in 2015 to 12 in 2016. SHA has long expected that the many bridges built in the 1950s and 1960s would start to reach the structurally deficient stage; this highlights the importance of a continued investment in structurally deficient bridges.
- On average, there are 0.9 million cubic yards (mcy)/year of Harbor maintenance dredging and 0.6 mcy/year of new work dredging in the Harbor to make improvements to the channel system. On average, Bay channels require 2.0 mcy/yr and Chesapeake & Delaware (C&D) Canal approach channels require 1.2 mcy/yr of dredging.
- The average age of the MARC rail car fleet increased from 9.3 in 2015 to 10.4 in 2016; however, this is still lower than the average fleet age five years ago in 2011, which was 23.6 years.

QUALITY OF SERVICE

- Although the overall preferred maintenance condition decreased to 78.6%, SHA is moving additional contract and fiscal resources in this area to begin to reverse the trend.
- All MTA services increased on time performance between 2015 and 2016, with MTA's Local Bus and Paratransit Mobility exceeding on time performance targets, at 85% and 92%, respectively.
- MPA's reports its average turn-around time per box was 30.7 minutes in FY 2016, up slightly from 28.4 the previous year and slightly over the goal of 30 minutes.
- The average MVA branch office visit slightly increased from 30 minutes in FY 2015 to 33 minutes in FY 2016. MVA continues implementing policy and process enhancements to reduce wait times, such as Alternative Service Delivery (ASD) enhancements, with the percentage of ASD transactions increasing from 55.8% in FY 2015 to 57.0% in FY 2016.
- The cost per enplaned passenger CPE at BWI Marshall Airport continues to be the lowest in the mid-Atlantic region and well below the average of comparable airports.
- In FY 2016, 85% of surveyed passengers at BWI Marshall Airport stated they were likely to fly from BWI Marshall Airport on their next trip, down 2 percentage points from 2014, but still exceeding the MAA target of 80%.
- The percentage of toll transactions collected electronically decreased by one percentage point from FY 2015 to FY 2016 but the total number of total toll transactions increased by 2.4 million, likely due to toll decreases and the new I-95 ETLs.

ENVIRONMENTAL STEWARDSHIP

- SHA performed over 3,500 Erosion and Sediment Control (ESC) inspections with only 17 non-compliance findings for a compliance rate of 99.5%.
- The total fuel usage by SHA's light fleet decreased to 745,962 gallons in FY 2016, a decrease from 817,552 gallons in FY 2015 but still above the target of 730,000 gallons.
- The total acres of wetlands or wildlife habitat created, restored or improved has been steadily increasing since 2000, with 57 additional acres added in CY 2016.
- MVA's Vehicle Emissions Inspection Program (VEIP) tested nearly 1.8 million vehicles in FY 2016, with a compliance rate of 93% and average customer wait time of five minutes, well below MVA's target of 15 minutes.
- Over 698.5 million vehicle miles traveled (VMT) were reduced in CY 2016 through various Travel Demand Management (TDM) projects and programs, including Commuter Choice Maryland, Commuter Connections, the Telework Partnership, various transit marking and subsidy programs, and statewide park-and-ride facilities. This reduction in VMT results in less air pollution and reduced greenhouse gas (GHG) emissions.
- The FY 2017-FY 2022 CTP includes $597.2 million to plan, design and construct stormwater controls and alternative water quality improvement strategies adjacent to Maryland roadways to help meet the Total Maximum Daily Load (TMDL) requirements by 2025.

COMMUNITY VITALITY

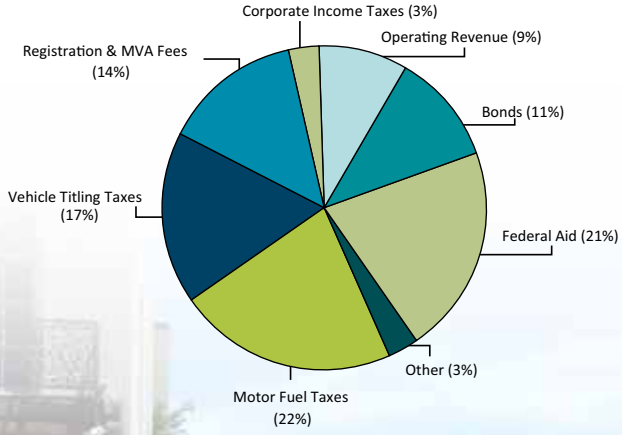
- SHA added more than 48 directional miles of bicycle lanes and shared use lanes in FY 2016, representing a 242% increase since this performance measure was first measured in 2011. The percentage of centerline miles at a bicycle level of comfort (BLOC) grade 'D' or better increased to 59% in CY 2015.
- Congestion levels on Maryland's arterials and freeways remained steady between CY 2015 and 2016 despite VMT increasing.
- In FY 2016, 23,000 intermodal containers moved by rail through the Port, an increase of 29% from the previous year. This is the highest number of intermodal containers since this performance measure started being reported in this report in 2007.
- Total average weekday transit ridership decreased from 385,892 in FY 2015 to 369,215 in FY 2016. Other peer agencies, such as WMATA (Washington, D.C.), SEPTA (Philadelphia), MARTA (Atlanta) and PAAC (Pittsburgh) are experiencing similar ridership decreases. In addition, Maryland experienced a record blizzard in January 2016, leading to surrounding agencies not operating any service between two to three days due to safety reasons.
- The portion of State-owned roadway directional miles within urban areas that have sidewalks slightly decreased from 21.9% in FY 2015 to 19.8% in FY 2016 while the portion of sidewalks meeting Americans with Disabilities Act (ADA) compliance remained consistent at 67%.

PROMOTING ENVIRONMENTALLY SUSTAINABLE TRANSPORTATION

A primary responsibility of MDOT is to develop, test and implement internal best management practices, track environmental performance, and to help ensure minimal impacts from transportation on Maryland's diverse natural resources, ensuring a sustainable future. MDOT's commitment to protecting and preserving Maryland's environment is also advanced through transportation infrastructure decisions, from how best to manage stormwater, to mitigating energy consumption, to protecting historical assets, to offering greener alternatives to travel, including providing charging stations for electric vehicles, bike sharing and clean technology transit vehicles.

To learn about MDOT's environmental initiatives, compliance actions and goals, please review the goal chapter, Environmental Stewardship, which begins on page 43.

MDOT TRANSPORTATION TRUST FUND SOURCES FY 2017–FY 2022 CTP

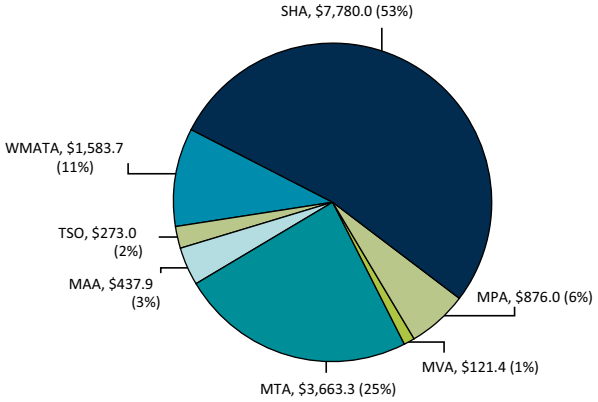


MARYLAND'S INVESTMENT IN TRANSPORTATION

The Transportation Trust Fund (TTF) is the vehicle through which Maryland invests in its transportation facilities. The TTF receives funding from a variety of sources that include motor vehicle fuel taxes, vehicle titling taxes, motor vehicle fees, corporate income taxes, sales and use taxes, operating revenues, bond proceeds, federal sources and minor sources. MDOT uses these funds to implement the goals and objectives of the MTP across all modes of transportation – addressing congestion relief, safety improvements, transit expansion and upgrades at the Port of Baltimore and BWI Marshall Airport. The priorities of the MTP are reflected in the CTP. In FY 2017, MDOT and its agencies allocated $1.2 billion towards system preservation, ensuring that infrastructure assets are maintained on a continuous basis. Other projects and programs focus on mobility and safety throughout the region, such as upgrading security at MPA cargo terminals, SHA intersection and roadway geometric improvements, development of the MTA Purple Line and the implementation of BaltimoreLink bus redesign. MDOT continues to track the "percentage of budgeted dollars expended" in order to monitor the current budget with borrowing levels. In FY 2016, MDOT expended 96% of allocated dollars, exceeding the goal of 90%.

MDOT's capital and operating budget allocations, the FY 2017–FY 2022 CTP funding sources, and capital and operating budgets by transportation business units and WMATA are shown in the following series of pie charts.

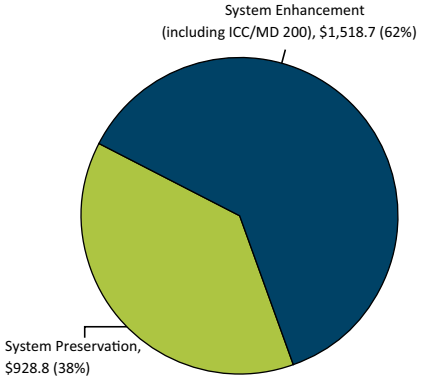
MDOT CAPITAL BUDGET (MILLIONS) FY 2017–FY 2022 CTP



Total MDOT Capital Budget: $14.8 Billion

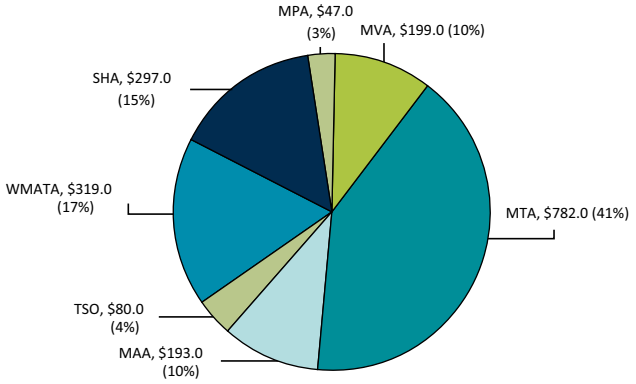
** The FY 2017–FY 2022 CTP totals about $14.8 billion, $13.8 billion of which comes through the Trust Fund and $1.0 billion from "Other" fund sources, including local contributions, WMATA direct funding, PFC airport fees, etc.*

MDTA CAPITAL BUDGET (MILLIONS) FY 2017–FY 2022 CTP



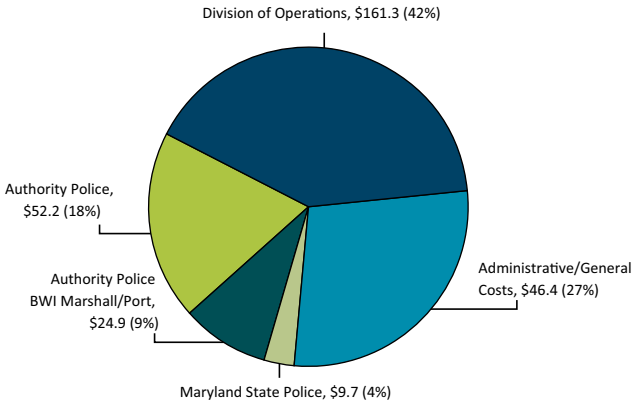
Total MDTA Capital Budget (Including ICC/MD 200): $2.5 Billion

MDOT OPERATING BUDGET (MILLIONS) FY 2017–FY 2022 CTP



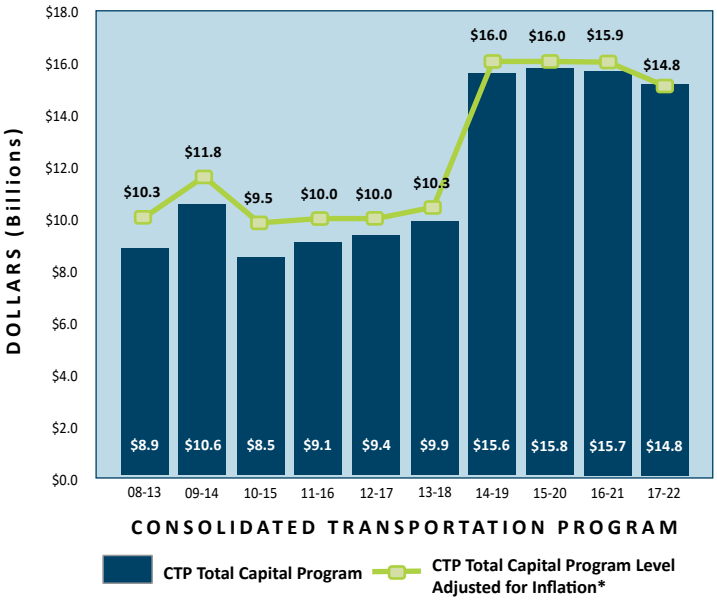
Total MDOT Operating Budget: $1.92 Billion

MDTA OPERATING BUDGET (MILLIONS) FY 2017–FY 2022 CTP



Total MDTA Operating Budget: $294.4 Million

MDOT TOTAL CAPITAL PROGRAM LEVELS (BILLIONS)



**The inflation adjusted amounts are calculated using the Consumer Price Index (CPI), which measures the average change in prices of a variety of consumer goods and services.*

The MDOT Total Capital Program Levels chart displays both the CTP Total Capital Program Funding Levels and CTP Capital Funding Levels adjusted for inflation. CTP Total Capital Program Levels (blue columns) represent the total capital program amount for each CTP expressed in the particular year's dollar value. To compare CTP Total Capital Program Levels and their comparative purchasing power over the last 10 years, the CTP Capital Funding Levels are adjusted for inflation (green line).

TRANSPORTATION MOBILITY AND ACCESSIBILITY

Strategic Investments and Approaches to Accommodate Travel Demand

MDOT is committed to preserving the existing transportation system while accommodating and preparing for future travel demands, as shown in the FY 2017–FY 2022 CTP.

As Maryland's population continues to grow and the State and national economy recovers, more demand for mobility by both residents and freight are expected. As the State increases in population, and subsequently the total Vehicle Miles Traveled (VMT), MDOT will need to respond with the provision of multimodal networks and services that ensure the entire transportation system remains efficient, viable and safe. In 2016, VMT is estimated to slightly increase to 57.6 billion miles driven, an increase from 57.2 billion in 2015. Ridership on all MTA modes, has slightly decreased in 2016, partly in response to low gas prices, and in the Washington D.C. region, in response to WMATA's SafeTrack, an intensive maintenance program, and "sharing" for ride sharing services such as Lyft and Uber. Millennials desiring walkable and transit-friendly neighborhoods, the aging Baby Boomer generation needing alternative transportation options, and technological advances changing how we manage and use the transportation network are just some factors MDOT is considering when planning, designing and improving the transportation system. Anticipating trends and planning for changes in travel demand, travel options and technologies, and other influencing factors such as travel cost, is necessary for MDOT to make strategic investments that serve today's needs and accommodate travel demand needs in the coming decades.

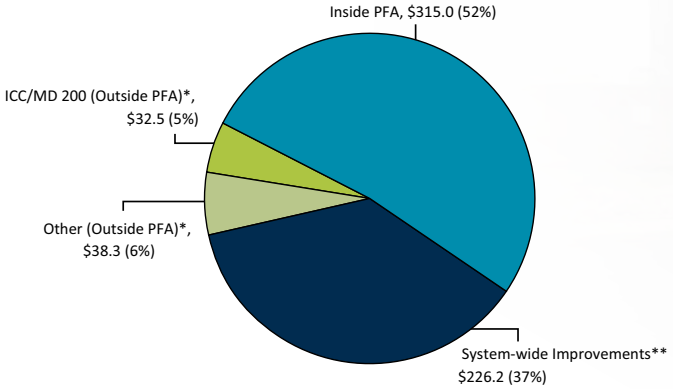
Maryland continues to create and maintain an efficient transportation network that accommodates travel demand and provides a wide range of transportation options to help residents and visitors move throughout the state. Whether riding MTA's Local Bus service or LOTS, commuting on MARC's rail system, walking or bicycling on improved bike and pedestrian network facilities, or utilizing a bikeshare system in Baltimore or Maryland communities in the Washington, D.C. region, traveling in Maryland is not confined to single-occupant vehicles.

Population growth, increases in school-age and work-age segments, and employment growth are other factors that have historically influenced travel demand. Over the next 25 years, the population in Maryland is expected to increase, predominantly in urban areas. By 2040, the Maryland Department of Planning projects Maryland's population will be nearly 6.9 million, an increase of 16% from 5.9 million in 2015. Jobs are also projected to grow, however, at a slower rate than the population - from 3.3 million in 2015 to nearly 3.6 million jobs in 2040, an increase of 9%. In anticipation of this growth, MDOT will monitor transportation conditions and developments to ensure the projects, policies and investment strategies are up to date and reflect current and future growth patterns.

The majority of the planned and programmed projects in the FY 2017–FY 2022 CTP aim to preserve and maintain the existing multimodal transportation network to accommodate travel demand. Some of these projects include MAA plans for expanding the international Concourse and rehabilitation of Concourses D and E at BWI Marshall Airport, SHA's focus on repair and rehabilitation of roadways, MVA Alternative Service Delivery (ASD) Systems, and MTA Purple Line. The MDTA is preparing to replace the Canton Viaduct, the elevated portion of the I-895 Baltimore Harbor Tunnel Thruway, from the north portal entrance to Holabird Avenue. MDOT is currently developing guidance on incorporating practical design into the development of highway projects. Practical design involves designing transportation project solutions for specific purpose and need-identified problems, considering safety, context and expected performance, while utilizing innovation and flexibility in the applicable design guidance, for the best value and impact while meeting the needs of the system. One example of this approach is the MD 4 Interchange at Suitland Parkway in Prince George's County. These and other projects and policies will evolve as population trends and travel behavior continue to change, ensuring Maryland continues to provide viable transportation options for its residents and visitors.

FY 2016 MDOT MAJOR TRANSPORTATION PROJECTS SPENDING WITHIN PRIORITY FUNDING AREAS (MILLIONS)

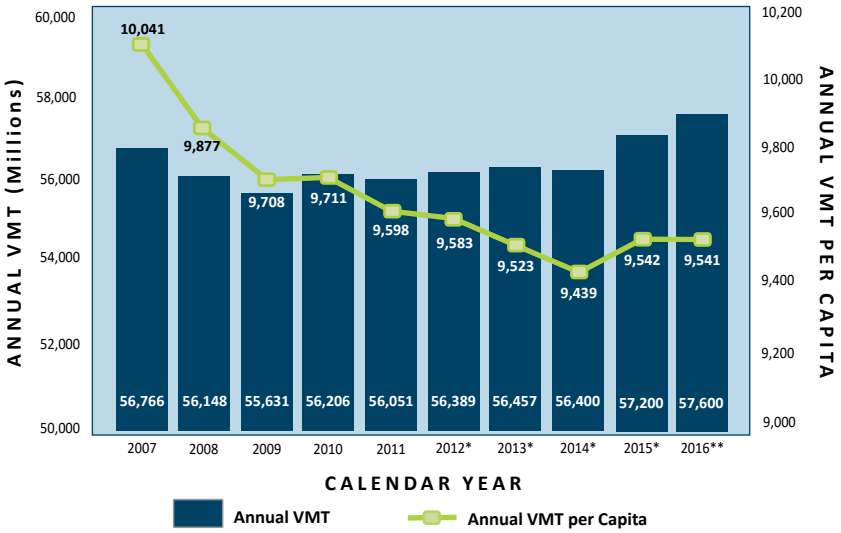
The Priority Funding Areas (PFAs) Act of 1997 establishes growth areas designated by the local jurisdictions and the State as geographic areas for targeting strategic investment in state infrastructure. The State focuses investment on growth-related infrastructure within these PFAs, yet investments are also made in local roads and bridges that provide connections to PFAs.



** Expenditures related to "Funding outside of PFAs" includes projects underway prior to enactment of the Smart Growth Areas Act (therefore grandfathered) as well as exceptions granted in compliance with the statute. Exceptions include bridge replacements that did not add significant highway capacity as well as projects approved for exception by the Board of Public Works, such as the Intercounty Connector (ICC)/MD 200.*

*** The category of "system wide improvements" includes funding for local transit assistance programs, the Maryland portion of the WMATA system, transit vehicle acquisition by MTA and facility management system improvements by MVA. This category includes a project with its PFA update in process, PFA status TBD.*

ANNUAL NUMBER OF VEHICLE MILES TRAVELED (VMT) AND VMT PER CAPITA



** 2012, 2013, 2014 and 2015 data updated from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

MVA TRANSACTIONS (THOUSANDS)

	2008	2009	2010	2011*	2012*	2013*	2014*	2015*	2016**
Number of registered vehicles	4,774	4,736	4,816	4,809	4,838	4,824	4,882	4,963	5,051
Number of drivers licenses issued	3,995	4,049	4,082	4,084	4,102	4,140	4,143	4,186	4,265
Number of motorcycle licenses	244	252	257	263	269	274	275	277	279
Number of Commercial Driver's Licenses issued	167	168	170	173	176	180	180	184	188
Number of transactions	12,388	12,263	11,011	11,880	11,995	10,315	10,756	11,117	11,005

** 2011-2015 data revised from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

Induced Travel

Additional transportation network capacity can result in increases in the number of users or travel demand known as induced travel. Induced travel reflects the basic economic laws of demand, which state that consumption of a good increases as its price declines. Transportation system improvements that reduce congestion help to reduce travel time, which lowers the cost of travel, which may encourage more vehicle use.

Induced travel does not negate the use benefits of increasing roadway or transit capacity, but it can change the potential benefits. For example, new roadway capacity benefits are typically associated with increased peak-period mobility. While reducing delay can improve air pollution in a targeted location, like an intersection, typically induced travel, or an increase in VMT, will increase emissions, noise and energy consumption for the surrounding area. Roadway and transit capacity expansion decisions require years of planning and engineering and consideration of many options, including managing demand through Travel Demand Management (TDM) strategies and optimizing capacity through system operational strategies like Intelligent Transportation Systems (ITS). MDOT supports a variety of TDM strategies that support the use of alternatives to the single-occupant vehicle, including ridesharing, transit, alternative work schedules and teleworking. This includes funding support for Commuter Choice Maryland, Commuter Connections, Telework Baltimore and statewide park and ride facilities. SHA and MDTA also deploy and manage a diverse, interconnected set of technologies to help optimize capacity, including traffic cameras and sensors, variable message signs and traffic signal synchronization.

BALANCING THE MULTIMODAL APPROACH AND PROVIDING TRANSPORTATION OPTIONS

As a growing State with a diverse population, MDOT must provide a robust transportation system that serves the needs of its residents. With the increasing amount of Marylanders that bike, walk, use transportation network companies (Uber, Lyft, etc.) and/or transit to access life's opportunities, MDOT seeks to provide travelers with safe, sustainable, intelligent multimodal options. To increase alternative methods to travel other than single occupancy vehicles, MDOT continues to advance comprehensive transportation options, including highways, transit networks, ridesharing, bicycle facilities and pedestrian networks. MDOT also balances the needs of its rural communities by providing safe and efficient travel options and ensuring multiple connections and routes to vital economic centers.

Maryland has continued investment in multimodal options for residents and visitors alike by advancing initiatives to promote and support walking and biking, which has a secondary effect of increasing commute trips made by public transit and relieving congestion on Maryland's highways. One example is the North Avenue Rising Project, which aims to implement a Complete Streets approach and transform the corridor with pedestrian, bicycle and transit improvements, making the roadway more accessible and safe for all users.

MTA is also advancing its major bus initiative, BaltimoreLink, a complete overhaul and rebranding of the core transit system operating within the city and throughout the greater Baltimore region. This effort is a culmination of service planning analysis, public involvement and strong leadership from MTA, elected officials, community leaders and local agencies, and builds off feedback collected under the Bus Network Improvement Project (BNIP). BaltimoreLink has five major goals: improves service quality and reliability; maximize access to high frequency transit; strengthen connections between the MTA's bus and rail routes; align the network with existing and emerging job centers; and involve riders, employees, communities and elected officials in the planning process. MTA's New Express BusLink service will improve suburb-to-suburb connectivity and create significantly faster connections from BWI Marshall Airport MARC Train station to Old Court Metro Subway Station; from Owings Mills to Towson and from Towson to White Marsh. The Maryland Purple Line will provide east-west transit service between residential and major employment areas by connecting to existing rail, such as all lines of MARC service and WMATA's Red and Orange lines.

BIKING AND WALKING IN MARYLAND

MDOT continually seeks to improve the safety and convenience of biking and walking as transportation options by making strategic investments as part of broader projects. In addition to design options and dedicated sources that pertain to State-owned facilities, MDOT coordinates several discretionary programs that can support local jurisdictions and non-profit organizations as partners for improving bicycle and pedestrian safety and connectivity across the state.

► Bikeways Grant Program

MDOT's Bikeways Program was created in 2012 to assist local jurisdictions and key agencies address critical gaps in the bicycle network. The competitive grant program offers funding assistance for minor retrofit, design and construction projects that enhance bicycle accessibility and safety. The FY 2017-FY 2022 CTP includes $13.7 million for this program.

► Recreational Trails Program

This federally-funded program is administered by the State Highway Administration and provides support for the development, maintenance and implementation of trail projects by agencies and non-profit organizations. For FY 2017 MDOT was able to award $1.2 million in RTP grants to support 48 projects across the state, including a new 1.5 mile segment of a multi-use trail in the Lower Susquehanna Heritage Area.

► Transportation Alternatives Program

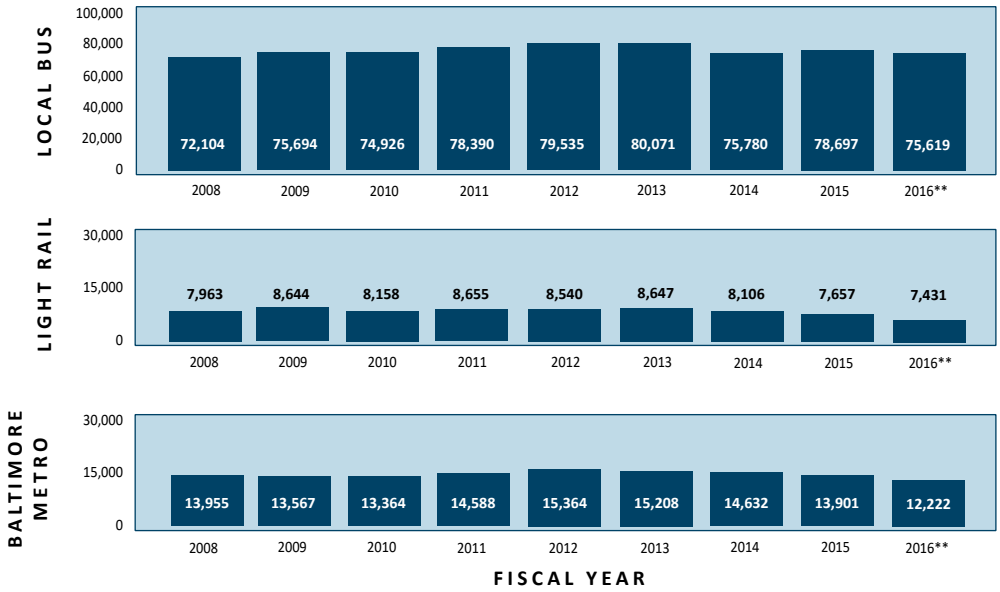
MDOT partners with Metropolitan Planning Organizations and other State and local agencies to allocate and administer federal funding through the Transportation Alternatives Program. A major focus of this program is to enhance pedestrian and bicycle facilities, and it can also be used for safe routes to school and environmental mitigation. As part of the SHA's allocation for statewide projects in FY 2017, a total of $1.82 million was dedicated for five projects, including a City of Hagerstown project to construct sidewalks improving safe access to school.

TRANSIT RIDERSHIP

The residents of Maryland have a variety of transit options to travel from their homes to work, school, shopping and other destinations. MDOT continues to streamline and integrate multimodal transportation services, options and infrastructure for Maryland commuters in both rural and urban areas of the State, ensuring a balanced investment for all modes that helps facilitate expansion of services and infrastructure to meet the State's growing population and resulting travel demand.

Transit projects and infrastructure are supported through the FY 2017–FY 2022 CTP, including BaltimoreLink as well as targeted investments to support an interconnected, safe, reliable and efficient transit system through key improvements to MARC service, WMATA and LOTS throughout Maryland. Future projects include the Purple Line and ongoing MARC enhancements on the MARC, Camden, Brunswick and Penn lines to ensure safety and quality of service.

TRANSIT RIDERSHIP–MTA DIRECT-OPERATED SERVICES (THOUSANDS)



TRANSIT RIDERSHIP–CONTRACTED SERVICES AND LOTS (THOUSANDS)

** 2009 Contracted Commuter Bus data was revised from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

WMATA SERVICE IN MARYLAND

MDOT coordinates with neighboring jurisdictions to provide funding for WMATA, supporting an extensive transit network that spans the National Capital Region. WMATA provides key connections to many local and regional transit modes throughout Maryland, including MARC, MTA Commuter Bus, Amtrak, Montgomery County Ride On and Prince George's County TheBus. More than 111 million passengers used the WMATA Metrorail, Metrobus and MetroAccess system in Maryland in 2016.

Safety, security, reliability and customer satisfaction performance information is provided in the Metro Scorecard and Vital Signs Report: ***www.wmata.com/about_metro/scorecard/***

► WMATA Capital Improvement Program (CIP)

WMATA's $6.0 billion FY 2017–FY 2022 CIP funds critical safety and security improvements, rehabilitation of track and rail structures, replacement of Metro's transit assets and state of good repair investments and implementing recommendations from the Federal Transit Administration (FTA) and National Transportation Safety Board (NTSB). Key investments include 1000 Series Railcar Replacement, Metrorail elevator/escalator rehabilitation and service reliability initiatives to regain customers' trust and boost ridership.

Maryland's FY 2017–FY 2022 CTP includes a total of $983 million to WMATA to support implementation of WMATA's CIP. It includes Maryland's share of matching funds to federal formula funds received by WMATA, as well as Maryland's share of additional state and local funds for WMATA capital projects.

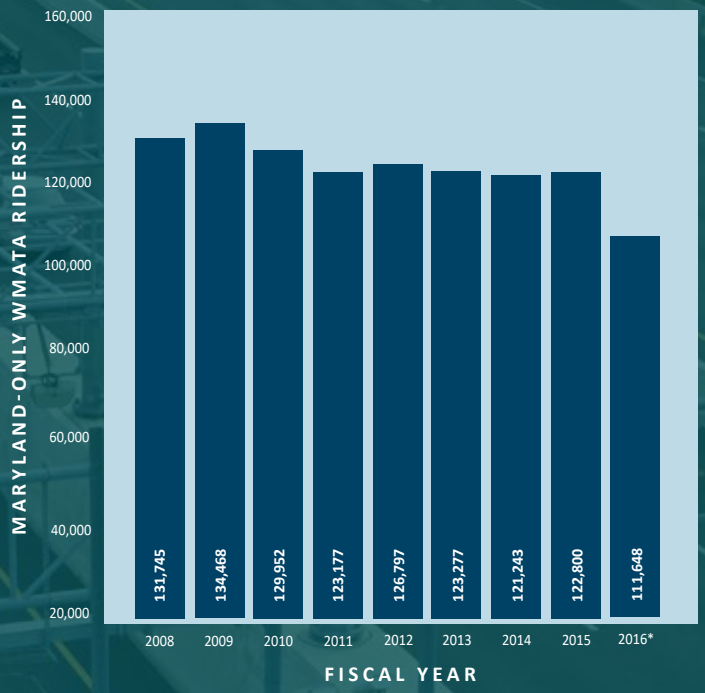
► Transit-Oriented Development

WMATA and MDOT have a collaborative and active partnership in establishing joint development agreements to create Transit-Oriented Development (TOD) projects across the state. Existing joint development projects have been established at the New Carrollton, White Flint and Branch Avenue Metrorail stations.

► Bicycle and Pedestrian Access

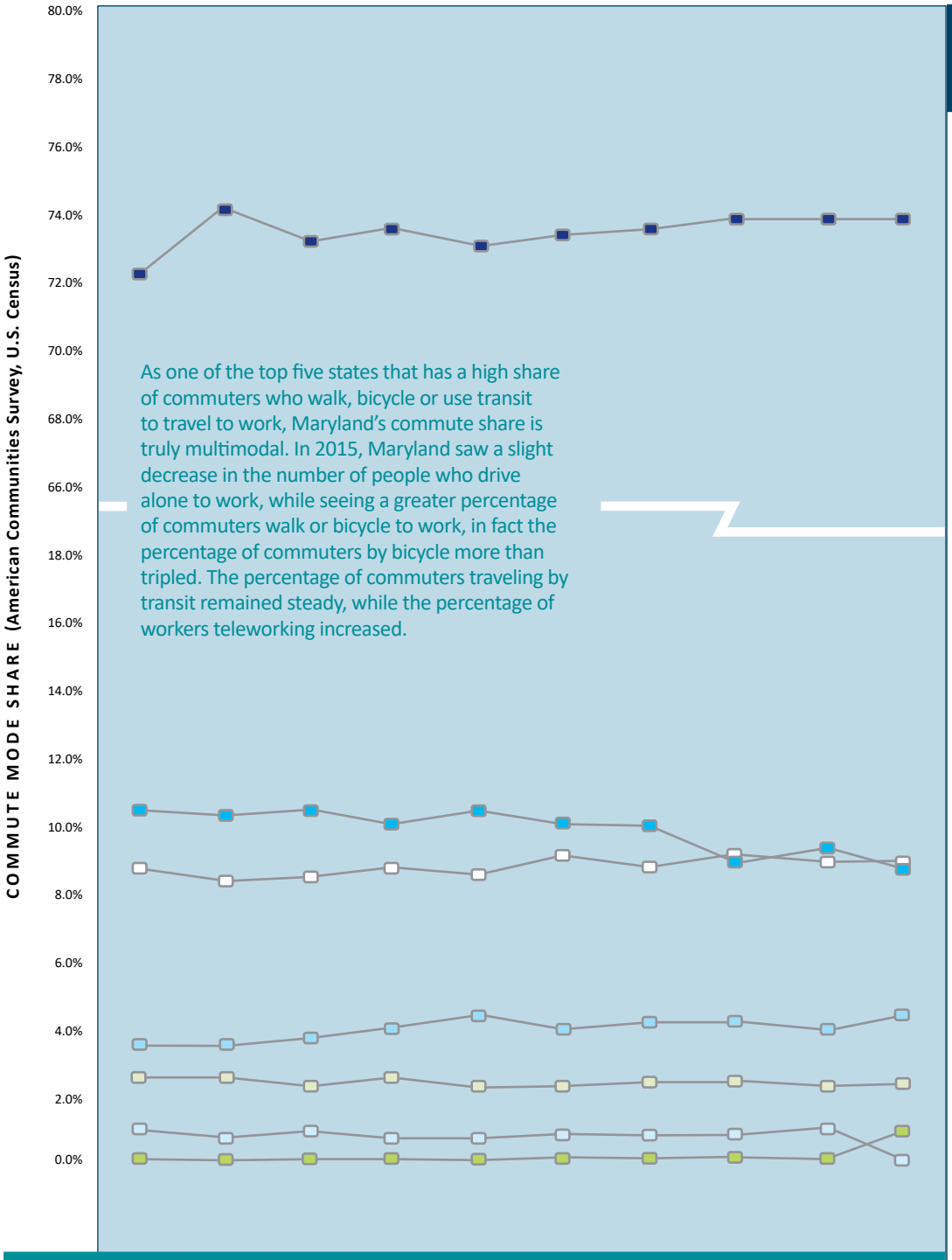
MDOT prioritizes and recognizes bicycling and walking as integral modes of its broader multimodal transportation system including at WMATA Metrorail stations.

MARYLAND-ONLY WMATA RIDERSHIP (THOUSANDS)



** 2016 data is preliminary and subject to change.*

MODE SPLIT FOR MARYLAND COMMUTERS



As one of the top five states that has a high share of commuters who walk, bicycle or use transit to travel to work, Maryland's commute share is truly multimodal. In 2015, Maryland saw a slight decrease in the number of people who drive alone to work, while seeing a greater percentage of commuters walk or bicycle to work, in fact the percentage of commuters by bicycle more than tripled. The percentage of commuters traveling by transit remained steady, while the percentage of workers teleworking increased.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Drive Alone	72.8%	74.3%	73.2%	73.4%	73.0%	73.3%	73.4%	73.9%	73.9%	73.8%
Carpool	10.7%	10.2%	10.8%	10.0%	10.7%	10.1%	9.8%	9.0%	9.3%	8.9%
Transit	8.8%	8.4%	8.5%	8.8%	8.6%	9.2%	8.9%	9.2%	9.0%	9.0%
Work at Home	3.6%	3.6%	3.8%	4.1%	4.3%	4.1%	4.2%	4.2%	4.1%	4.4%
Walk	2.6%	2.6%	2.3%	2.6%	2.3%	2.3%	2.5%	2.4%	2.3%	2.6%
Other	1.1%	0.7%	1.0%	0.7%	0.7%	0.9%	0.9%	0.9%	1.1%	0.3%
Bicycle	0.3%	0.2%	0.3%	0.4%	0.2%	0.3%	0.4%	0.4%	0.3%	1.0%

Key Activities & Accomplishments to Promote Alternatives to Driving Alone

2007 MARC Growth & Investment Plan, SHA Bike & Pedestrian Design Guidelines

2008 Southern Maryland Commuter Bus Initiative, BRAC Action Plan

2009 ARRA–LOTS, MTA, & WMATA Projects, Ongoing Park-and-Ride Lot Expansion

2010 Guaranteed Ride Home Expansion, Maryland TOD Designation, MTA Charm Card

2011 ICC/MD 200 Commuter Bus, MARC Penn Line Service enhancement, MARC Rail Car and Locomotive Replacement

2012 Maryland Bikeways and Bikeshare programs

2013 Transportation Infrastructure Investment Act, MARC Penn Line weekend service, implementation of Bikeways and Bikeshare programs

2014 Inclusion of the streamlined Purple Line, and CCT in the FY 2016–FY 2021 CTP

2015 Announcement of BaltimoreLink, a $135 million multi phase initiative to transform transit throughout the Baltimore metropolitan area, expansion of MARC Weekend Service and addition of new bike car service

2016 Implementation of BaltimoreLink including launching new Express BusLink suburb-to-suburb services on Routes 102, 106, 107 and launching of some of the expanded and new Commuter Bus service. Enhanced QuickBus 40 (QB 40) service between the Centers for Medicare and Medicaid in Baltimore County and City Hall in Baltimore City, and began service for a new reverse commute bus Route 425 between Baltimore to Aberdeen Proving Ground.

Key

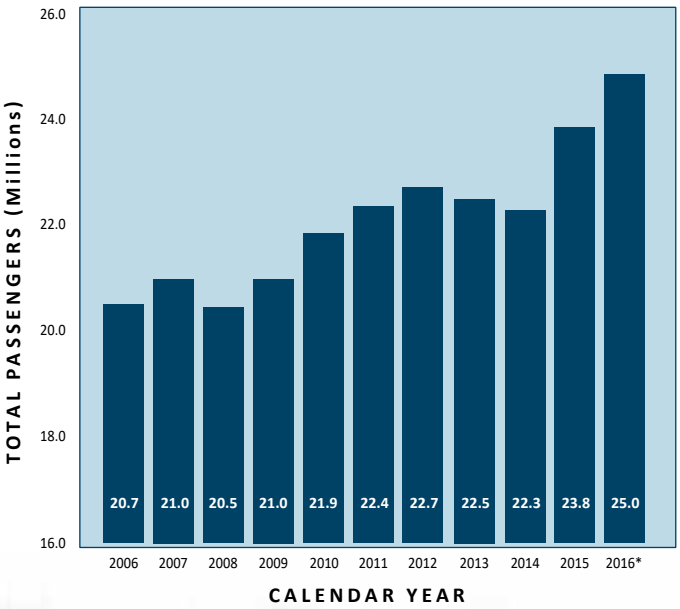
- **Drive Alone**
- **Carpool**
- **Transit**
- **Work at Home**
- **Walk**
- **Other**
- **Bicycle**

AIR TRAVEL IN MARYLAND

Maryland is served by a first class airport system that connects its residents and visitors to domestic and international markets. BWI Marshall Airport is the largest public airport in Maryland serving nearly 25 million passengers in 2016. Additionally, BWI Marshall Airport continues to experience passenger growth, the number of passengers increased by 5% between 2015 and 2016, with 2016 showing the highest number of passengers in the history of the Airport. This marks the continued success of BWI Marshall Airport as an economic engine not only for Baltimore but also for the entire State. BWI Marshall Airport provides access to 78 nonstop airline markets. MAA has funded over $33.8 million in regional airport projects since 2007 (excluding federal and local funds) to continue to provide a comprehensive and progressive airport system. MAA also owns and operates Martin State Airport, which serves as a general aviation reliever and support facility for the Maryland Air National Guard and the Maryland State Police.

Maryland's airports, connecting people to life's opportunities through travel, jobs and freight, are vital in supporting and enhancing Maryland's tourism and economic sector. Maryland's 36 public airports support and ensure Maryland's tourism, freight suppliers and businesses are competitive in a global and fast-paced marketplace. Over 118,500 metric tons of cargo passed through BWI Marshall Airport in FY 2016, which is an increase of 2% from FY 2015. BWI Marshall Airport continues to generate economic impacts in the region by supporting over 97,000 jobs and over $7.0 billion in business revenue because of passenger and air cargo activities at BWI Marshall Airport.

TOTAL ANNUAL COMMERCIAL PASSENGERS AT BWI MARSHALL AIRPORT



** 2016 data is estimate and subject to change.*

International travel has continued to expand at BWI Marshall Airport and has experienced a growth rate of 25% in FY 2016. BWI Marshall Airport has nonstop service to 15 destinations connecting Maryland to the global economy. Carriers are expanding international route service to BWI Marshall Airport, such as WOWair's daily service to Reykjavik, Iceland, and British Airway's upgraded service to London Heathrow in the modern Boeing 787-8 Dreamliner aircraft. BWI Marshall Airport also welcomed the start of service from Allegiant Air in 2016, along with two new Florida markets (Tampa and Fort Myers) from Spirit Airlines. Southwest added new markets during CY 2016 including Minneapolis/St. Paul, MN, Sacramento, CA, and San Jose, CA.

BWI Marshall Airport is constantly upgrading and ensuring its operations run efficiently and smoothly. In the FY 2017–FY 2022 CTP, BWI Marshall Airport programmed various upgrades including an extension of the International Concourse, runway and pavement improvements, parking lot upgrades and reconfiguration of the existing baggage screening system. The airport is also employing a Shuttle Bus Replacement program, ensuring safe and reliable transportation to rental cars at BWI Marshall Airport while investing in shuttles with better fuel efficiency, reduced emissions and advanced customer amenities. BWI Marshall Airport is also being mindful of the surrounding area by implementing a noise mitigation program to address noise impacts from aircraft operations on their neighbors. These, and other projects, will support additional growth at the airport and maintain the airport's status as a first class system.

THE PORT OF BALTIMORE'S CONTRIBUTIONS TO MARYLAND

The Port of Baltimore moves a wide variety of goods transported on larger and larger ships, continuing to meet the demands of a global economy. The Port's role in the global market was enhanced on July 19, 2016, when the Port welcomed the arrival of the first big container ship through the newly expanded Panama Canal. With 50 foot deep berth and channel, the Port is only one of three east coast ports that can currently accommodate the larger Post Panamax cargo ships and also includes the Neo-Panamax cranes. The expansion of the Panama Canal is expected to have a notable impact on container ship capacity.

Investments in 2016 that continued the Port of Baltimore's success included the complete reconstruction of Dundalk vessel berth 4 and maintenance dredging of roughly 2.6 million cubic yards to ensure continued safe navigation in and out of the Port. The Port is also working with the U.S. Army Corps of Engineers to build a wetland and upland wildlife habitat and keep the channel to the ocean unobstructed. The MPA's continued GreenPort initiative also supports the local wildlife by actively pursuing and supporting a thriving and sustainable port. In addition, companies continue to extend their contracts with the Port of Baltimore, including a 10-year contract extension with UPM, a forest products company, and two popular cruise lines, Royal Caribbean and Carnival Cruise. A new passenger boarding bridge (gangway) for the Cruise Maryland Terminal will enhance customers' experience within the State's growing cruise market.

By attracting global commerce and continuing contracts with key companies, the Port of Baltimore is continuing its support and contribution to the State economy. The Port generates approximately 33,920 jobs, including 13,650 direct, 4,380 indirect and 15,890 inducted jobs. Plus, there are another 93,700 jobs related to port activities; in total, there are over 127,000 jobs in Maryland linked to the Port. The Port was responsible for $2.9 billion in personal income and generated $310 million in state, county and municipal tax revenues. It should be noted that the average port direct job salary is 16.4% higher than the State's average salary.

IMPROVING THE MOVEMENT OF GOODS: MARYLAND FREIGHT ACTIVITY

Maryland's freight transportation network supports the growth of Maryland's economy and its communities. Industry sectors in Maryland, including agriculture, mining, construction, manufacturing, wholesale and retail trades, warehousing, energy, and more depend on safe and efficient movement of raw materials and/or finished products to support their business activities. These industry sectors compose 38% of Maryland's Gross State Product (GSP) and employ 45% of Maryland's workforce. These industries also contribute $4.1 billion in tax and fee revenues to the State annually, as of FY 2013 (2013 was the most recent economic impact report).

MDOT has completed a Strategic Goods Movement Plan, a data-driven policy guidance plan that recommends strategies for MDOT and relevant freight stakeholders. MDOT also has a Statewide Rail Plan, which outlines investments and policies needed to ensure the efficient, safe and sustainable movement of freight and passengers by rail. This plan identifies more than $9 billion in public and private railroad investment needs between 2015 and 2040 throughout the state. The Maryland Freight Lines Strategic Plan establishes an investment program for infrastructure upgrades to the State-owned short line rail system on the Eastern Shore of Maryland. Maryland is also updating their Statewide Freight Plan, providing a comprehensive overview of the State's current and long-range freight system performance, investments and policies. Major and minor projects will enhance the efficient movement of predominantly agricultural and chemical imports and exports. Safe and reliable rail connections will encourage continued focus of freight-dependent business along the existing railroad corridor while preserving valuable rural agricultural land and natural resources.

MDOT continues to work with public and private sector stakeholders to address impediments to the movement of goods and to prepare for the demands that continued population and economic growth will place on the State's transportation system in the future.

Key Freight Initiatives

- MDOT and MTA are working with Amtrak and the Federal Railroad Administration to advance preliminary engineering and environmental documentation for improvements to the Susquehanna River Rail Bridge Project and the B&P Tunnel Project to improve passenger and freight rail service reliability and address two longstanding bottlenecks along Amtrak's busy Northeast Corridor.
- MVA has made scheduling commercial driver license (CDL) road tests faster and easier by launching an online appointment scheduling system. The system now allows applicants to browse available test times at all of the MVA's 12 CDL driving test locations and to make an appointment to take a test, increasing efficiency and reducing wait times for commercial drivers.
- MDOT understands that truck drivers need safe and secure locations to park, ensuring drivers receive their required hours of rest, perform any vehicle maintenance and stretch their legs. However, there is not enough truck parking to meet current demands or future needs. Expanding the number of truck parking spaces requires partnerships and innovative project delivery, including evaluating current state-of-the-practice in truck parking technology.
- In response to the FAST Act, MDOT and CSX are seeking FASTLANE funding to retrofit the Howard Street Tunnel and allow double-stack intermodal trains to access the Port of Baltimore. This is a joint development project to increase the vertical clearance of the tunnel and nearby obstructions to increase logistics efficiencies, spur local and regional economic growth, upgrade transportation infrastructure, and benefit residents and consumers in Maryland and throughout the Mid-Atlantic for decades. MDOT will continue to seek other FASTLANE grant opportunities.

PERFORMANCE MEASURES

MTP GOAL	2016 AR FREIGHT RELATED MEASURES	PAGE
Economic Prosperity	Freight originating and terminating in Maryland	18
	(MPA)–Port of Baltimore foreign cargo and MPA general cargo tonnage	19
Safety & Security	(MVA/SHA/MDTA)–Annual number of traffic fatalities and personal injuries on all roads in Maryland	24
System Preservation	(SHA & MDTA)–Number of bridges and percent that are structurally deficient	30
	(SHA & MDTA)–Percent of roadway miles with acceptable ride quality	30
Quality of Service	(SHA)–Percentage of the Maryland SHA network in overall preferred maintenance condition	34
	(MPA)–Average truck turn-around time at Seagirt Marine Terminal	42
Community Vitality	(MPA)–Intermodal Containers moved by rail through the Port	56
	(SHA & MDTA)–Percent of VMT in congested conditions on Freeways/Expressways/Arterials in Maryland during the evening peak hour	56

GOAL $ Economic Prosperity

Support a healthy and competitive Maryland economy

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Improve the movement of freight and support growth in the flow of goods within and through Maryland
- Facilitate opportunities for growth in jobs and business across the state

An efficient and robust multimodal transportation network is directly linked to Maryland's economic success, connecting life's opportunities. Whether using it to commute to work, attend business events through air travel, ship goods cross-country by truck or train or air, or walk to businesses in a community center, the State's transportation network serves a wide variety of purposes for residents, visitors and businesses. An effective transportation system reliably moves both goods and people, supporting the state economy and strengthening businesses by enabling commerce and the day-to-day activities through which it is accomplished. Located in the logistics center of the Mid-Atlantic, Maryland's economy benefits from the cultivation and provision of cargo transportation services.

Maryland's transportation infrastructure is not static – it is as dynamic as its citizens and its economy. As the population grows and changes, the demand for transportation changes with it. The transportation system investments and improvements must evolve to respond to the demand. MDOT provides new and enhanced multimodal facilities to mitigate delay and congestion, strategically serving growing regions and expanding markets as travel demand increases.

Maryland's FY 2017–FY 2022 CTP lists the State's six-year capital budget for transportation projects, including a range of multimodal projects such as transit and aviation improvements. These projects reflect the types and variety of investments the State of Maryland plans to make over the next six years. Some notable projects include construction of the Upper Chesapeake Rail Trail, a new interchange and park-and-ride lots at US 15 Catoctin Mountain Highway and Monocacy Boulevard, and North Avenue Rising in Baltimore, a project to make over North Avenue that includes repaving the road and adding dedicated bus and bike lanes along its five-mile length. All these investments have a direct impact on the economic prosperity of the State, creating local jobs, easing access to and from commercial centers, and increasing the efficiency of freight movement and improving employees' commutes.

KEY INITIATIVES AND CTP PROJECTS

TSO: TSO works with partners to address travel demand and support economic growth along the Northeast Corridor (NEC). TSO activities include implementing the Strategic Goods Movement Plan, and advancing projects including the Susquehanna River Rail Bridge project (rail crossing), reliability upgrades for the Amtrak/MARC station at BWI Airport along with several other projects along the Washington-Boston Northeast Corridor, and is studying the Baltimore and Potomac (B&P) Tunnel on the NEC.

MAA: Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport) set an all-time passenger record, with more than 24.7 million passengers in FY 2016, an increase of 8.4% from FY 2015. BWI Marshall Airport has had 17 consecutive months of continuous monthly passenger records. BWI Marshall Airport is preparing for continued growth, as outlined in the FY 2017-FY 2022 CTP, with improvements in Concourses D and E and the International Concourse Extension.

MDTA: This network is essential for the movement of people and freight and will aim to decrease delays along the most congested section of I-95 north of Baltimore City.

MPA: In 2016, the Port welcomed the first container ship to arrive through the newly expanded Panama Canal. As one of the three east coast ports that can currently accommodate the larger Neo-Panamax cargo ships, the Port of Baltimore is set to be an efficient and cost-effective option for marine cargo.

MTA: The BaltimoreLink network is currently underway with four new Express BusLink routes launched in June 2016. These routes, part of the entire BaltimoreLink system, greatly improves suburb-to-suburb connectivity, with final plans aimed to connect multiple transit modes and stations, improving accessibility and strengthening economic opportunities along these corridors. The network will expand access to jobs and services, with 33,600 more people within one-quarter mile of the system and adding 20% more jobs accessible within 30 minutes in the Baltimore metropolitan area.

MVA: Enhance customer service initiatives that offer an increase in service enhancements and business processes that will benefit MDOT customers. Offer secure driver's license and identification cards that are nationally recognized. Increase interagency partnerships and implement system enhancements that will allow for better integration of systems across all areas. $18.2 million in the FY 2017-FY 2022 CTP will enhance the MVA customer-facing system and business processes to support customer interactions and service delivery.

SHA: Continue to reduce congestion and monitor performance on Maryland's state and interstate roadways under the Coordinated Highways Action Response Team (CHART). The CHART program aids in improving safety and mobility and enhancing commerce with the reduction of travel time by providing critical traffic information to travelers, clearing crashes, assisting stranded motorists and monitoring current roadway conditions ($105.1 million in the FY 2017-FY 2022 CTP for CHART). CTP projects include I-270 Innovative Congestion Management; MD 175, Annapolis Road, Base Realignment and Closure (BRAC) intersection improvements; MD 22, Aberdeen Thruway, BRAC intersection improvements; and I-270 Interchange at Watkins Mill Road, Metropolitan Grove MARC Station access.

MARYLAND AND FREIGHT: IMPROVING THE MOVEMENT OF GOODS

Efficient and interconnected multimodal freight movement is essential to the economy. Maryland manufacturers depend on the freight system to move raw materials and finished goods between production facilities, distribution centers and retail outlets in Maryland, throughout the U.S. and the world. Freight dependent industries, such as mining, agriculture, retail and wholesale trade, manufacturing, construction, and warehousing, account for over one million jobs in Maryland.

- On December 4, 2015, the Fixing America's Surface Transportation Act (FAST Act) was signed into law. The FAST Act established both formula and discretionary grant programs to fund critical transportation projects to benefit freight movements, including FASTLANE grants for nationally and regionally significant freight and highway projects.
- In 2015, MDOT completed the Strategic Goods Movement Plan, which outlined freight strategies for MDOT and relevant freight stakeholders over five years. In 2016, MDOT began updating the Plan and initiated the process to identify priority urban and rural freight corridors as required by the FAST Act.

FREIGHT ORIGINATING AND TERMINATING IN MARYLAND

METHOD FOR MOVING FREIGHT	TOTAL VALUE (MILLIONS)	TOTAL TONNAGE (THOUSANDS)
Air *	$13,379	141
Other*/ **	$254	33
Rail *	$15,063	26,206
Truck*	$331,453	214,458
Water	$50,684	32,400 ***
All Freight	$410,833	273,338

** Source: U.S. Department of Transportation Freight Analysis Framework (FAF4.2), Other, Rail, and Truck value and tonnage. The FHWA released a new version of the Freight Analysis Framework that is more precise than the previous version and accounts for the economic downturn from approximately 2009-present. This new version was refactored using 2012 data.*

*** Freight consists largely of postal and courier shipments weighing less than 100 pounds and other intermodal combinations.*

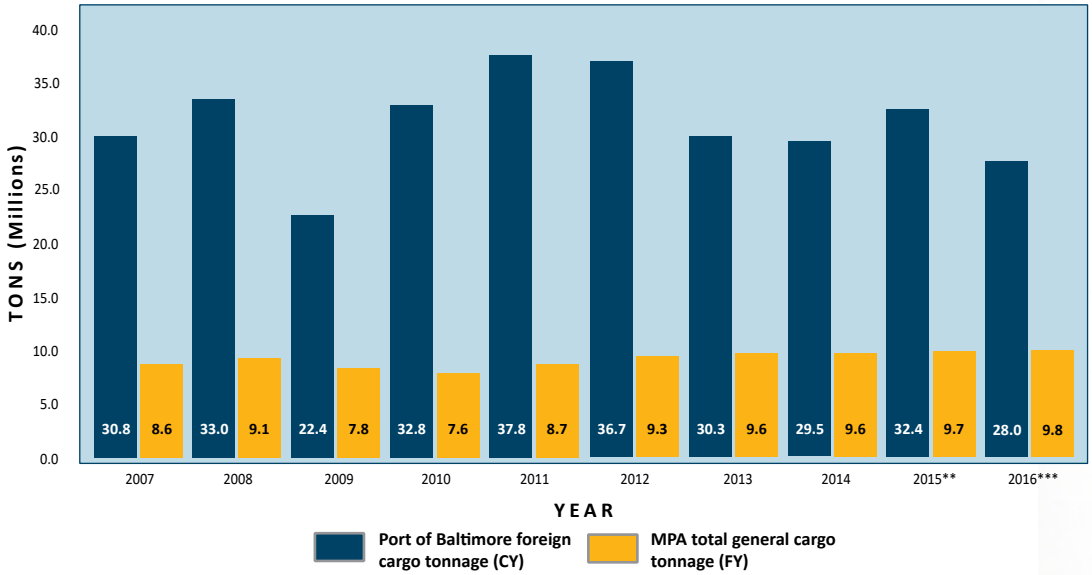
**** International cargo through the Port of Baltimore, based on the first half of 2015, from MPA.*

Maryland Freight Highlights

- Water is well-suited to haul goods cost-effectively over long distances. Ships transport waterborne cargo to the Port, and then distribute by motor carrier and rail to communities around the nation. The Port of Baltimore fared better than the nation as a whole in 2015, with coal export tons increasing 9.6% from 2014. The MPA set a record in 2015 for both the number of containers handled and the number of automobiles imported. The Port continues to enhance its operational capabilities and infrastructure through funding provided in the FY 2017– FY 2022 CTP, and from other sources. The economic activity at the Port has a positive impact on local and statewide jobs.
- Heavy goods that need to be hauled long distances over land are typically moved by rail. Examples of these commodities hauled on Maryland's Class I railroads include coal, chemicals and nonmetallic minerals. In 2015, CSX invested more than $62.5 million in its Maryland network. Norfolk Southern invested $4 million in tracks and facilities and helped two businesses located in Maryland in 2015. The Canton Railroad enabled port-related industrial facilities to access Class I railroad service seamlessly, while State-owned short lines on the Eastern Shore provided multimodal freight options to rural agricultural, manufacturing and distribution firms.
- Trucks carry nearly every type of commodity, from consumer products to chemicals to machinery. Nonmetallic minerals, distribution center traffic and food products account for some of the highest tonnage hauled on Maryland's roads. By maintaining, improving and managing freight-critical highways and interstates, SHA and MDTA support economic growth in the state. Maryland's commercial vehicle enforcement and compliance program helps ensure the safe operation of trucks on Maryland's roadways.
- High value and time-sensitive products are commonly shipped via air. The top air freight commodities shipped out of MAA facilities include mail, machinery and transportation equipment. To support commercial cargo, BWI Marshall Airport offers warehousing, transportation and distribution for air cargo and easy, interconnected access to Maryland's transportation system. The MAA continues to invest in transportation improvements at BWI Marshall Airport and Martin State Airport, and provides grants to general aviation airports to continue to ensure the safety of all aircraft operations.

MPA: PORT OF BALTIMORE FOREIGN CARGO & MPA GENERAL CARGO TONNAGE*

There are many factors that influence the movement of freight at the Port of Baltimore: national and world economic trends, labor costs (in Maryland and at competing ports), value of the U.S. dollar, rail and highway service and rates, prolonged weather conditions, incentive programs at other ports and changes in vessel sizes. Tracking cargo trends supports MPA's management decisions and helps to assess the economic impact of freight activity occurring at the Port of Baltimore and MPA terminals.



**MPA general cargo includes both foreign and domestic waterborne cargo.*
***2015 data has been revised from previous Attainment Report.*
****2016 data is preliminary and subject to change.*

Why Did Performance Change?

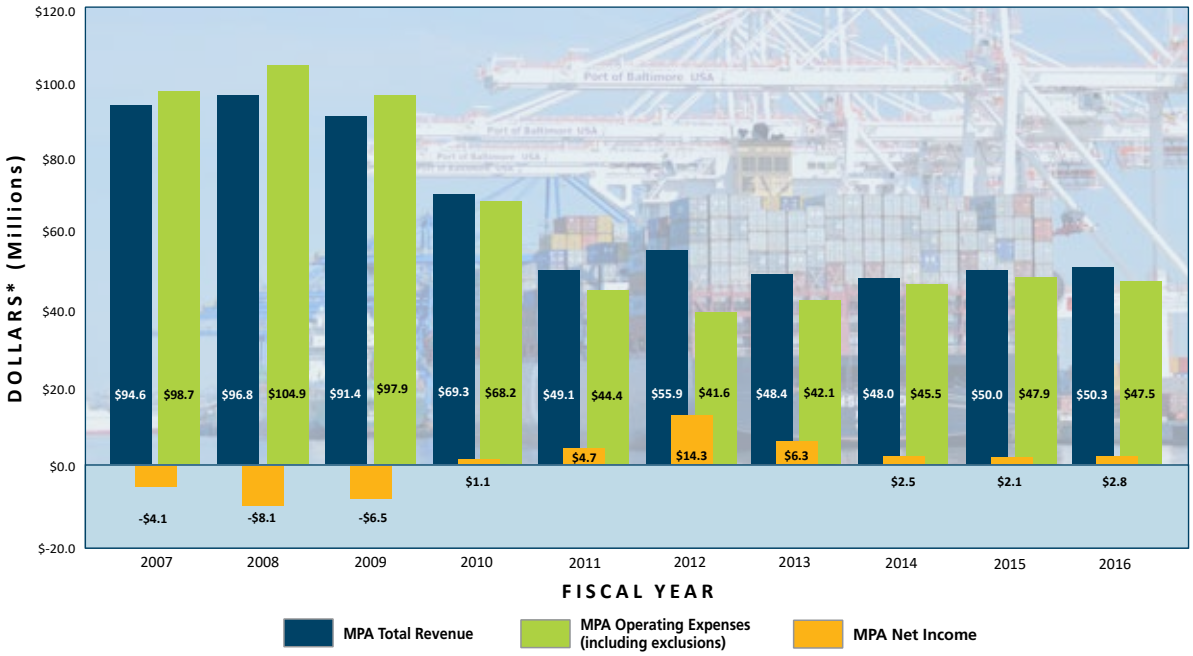
- In FY 2016, MPA handled 9.8 million tons of general cargo, which is a new fiscal year high-water mark at +0.5% over the FY 2015 record; this is the fifth consecutive fiscal year record for the State's public terminals
- Roll-on /Roll-off (RoRo) (farm, mining and construction equipment) fell 3.5% due to weakness in the overseas markets and the strong U.S. dollar. The Port of Baltimore remains the largest RoRo port in the USA
- Port of Baltimore handled 32.4 million tons of international cargo worth over $51 billion in 2015
- MPA successfully negotiated a 30-year contract with Wallenius Wilhelmsen Logistics, and a 10-year agreement with UPM Paper. The new tenant at Fairfield Marine Terminal, Auto Warehouse Inc., is very competitive with good auto volumes
- Baltimore ranked first in the nation (second consecutive year) for 'Top Ports: Americas', and 10th in the world for 'Global Ports: Container Vessels less than 8,000 TEUS' by the Journal of Commerce that ranks container terminals on vessel productivity
- MPA welcomed the Evergreen Ever Lambent, the first big container ship to arrive from the newly expanded Panama Canal
- Global demand for exported coal decreased

What Are Future Performance Strategies?

- Make rail and terminal improvements to facilitate heavy lift cargoes and expansion of project cargo
- Target auto and machinery manufacturers to provide long-term contracts and continue working to retain existing forest product customers and attract new customers; facilitate efforts to maintain market share and volume
- Continue to coordinate roadway permit issues with SHA and the City of Baltimore to facilitate cargo movement and positive community relations
- Work with Public-Private partnership (P3) partner, Ports America Chesapeake (PAC), to attract additional containerized cargo to the Port
- Work with the City of Baltimore to encourage land use practices and zoning efforts that preserve industrial land and freight routes leading to/from the Port's terminals and coordinate with state and regional economic development offices to locate sites to attract new distribution centers to Maryland
- Attract a new container ocean carrier and a new service to the Port from an existing container carrier
- Continue to work with all stakeholders to develop the Duke property and Sparrows Point as Distribution Centers
- Keep working with MDOT and CSX to enable high cubed double-stack train access to/from Seagirt Marine terminals and work with CSX to request a U.S. Department of Transportation grant to fund improvements to the Howard Street Tunnel to make improvements that will allow double-stacking of shipping containers through the tunnel
- Acquire and/or develop new land (i.e., Wet Basin, Mestek, Beverley, Kurt Iron and Fruit Slip, etc.) to allow for more automobile cargo growth
- Be an active leader in the Baltimore Port Alliance and assist private Port partners to increase waterborne commerce for the whole Port
- Work with the United States Army Corps of Engineers (Corps) to ensure the Port of Baltimore's channels are adequately dredged to accommodate big container ships

MPA: REVENUE, OPERATING EXPENSE & NET INCOME

Revenues are an important measure of business activity at the MPA terminals. MPA's operating expenses are usually recovered by revenues generated. Net income is the difference between revenues and expenses.



** The cost data were adjusted for inflation in past reports, but are not adjusted for this report.*

Why Did Performance Change?

- Over 440,000 passengers passed through the Cruise Maryland Terminal in FY 2016, enjoying 102 ship calls
- MPA's net income was $2.8 million for FY 2016; operating revenues amounted to $50.3 million which is consistent with that of FY 2015; operating expenses for FY 2016 were $47.5 million
- MPA successfully controlled overall operating discretionary expenditures throughout FY 2016
- MPA continued to secure long-term agreements with customers to secure future revenue streams, operating revenues have remained relatively consistent over the last two years, even as competition grows stronger
- The Port remained the largest Auto port and RoRo Heavy Equipment port in the United States and the majority of this cargo was handled at the public marine terminals

What Are Future Performance Strategies?

- Attract and retain sufficient cargo volumes to provide future revenue growth
- Research potential advancements to MPA's systems which provide efficient, accurate and technologically-advanced transmission of vessel activity
- Continue to develop business synergies with our P3, PAC, to maximize container volumes through the Port of Baltimore
- Reach out to State and regional economic development offices to locate sites to attract new distribution centers to Maryland and thereby increase Beneficial Cargo Owners and their cargo to the Port
- Continue to promote the Baltimore/Washington region as one of the highest sourcing markets for cruising to attract passengers for both home port and port call sailings
- Increase rental occupancy of our Class A, high-rise, multi-tenant office building at the World Trade Center Baltimore and invest in the facilities so as to provide the customers with safe, secure and efficient facilities and services

MPA: INTERNATIONAL CRUISES USING THE PORT OF BALTIMORE

Measures cruise business activity departing from the Port of Baltimore to foreign destinations.

Fiscal Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016**
Number of international cruises using MPA's terminal*	21	30	35	96	111	100	93	99	75	94

TARGET: 93 cruises in 2017

** All data revised from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

Why Did Performance Change?

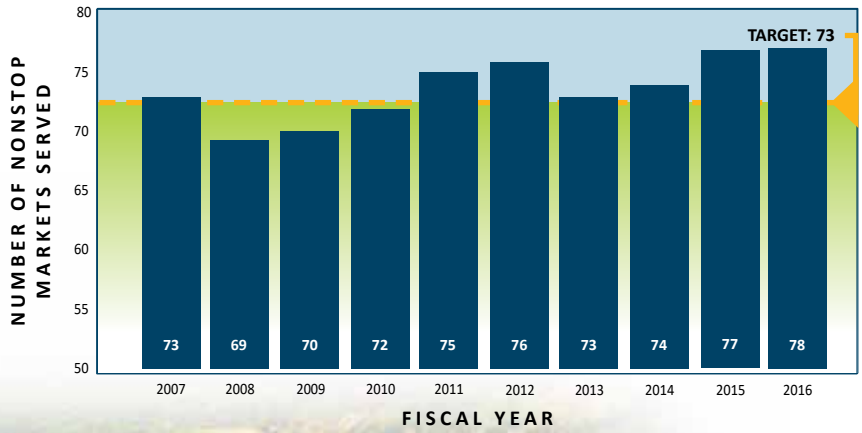
- In FY 2016, the Port of Baltimore ranked 11th in the nation and second in the Mid-Atlantic for the number of cruise passengers
- Carnival Cruise Lines and Royal Caribbean International report that their ships are sailing at over 100% capacity
- Made improvements to the Cruise Maryland terminal, including new carpeting, kiosks, electrical and enclosed Breeze way

What Are Future Performance Strategies?

- Keep promoting the Port as a convenient location for year-round cruising
- Continue to improve the terminal facility by: expanding the Wi-Fi capabilities; adding permanent outside restroom facilities; providing online prepayment options for parking; and constructing VIP area
- Continue the partnership with existing cruise lines and develop new opportunities for additional cruise lines to come to Baltimore
- Continue to work with the travel industry to promote cruising from Baltimore and to increase awareness of cruising from Baltimore with consumers
- Pursue additional opportunities to bring more cruise lines to sail regularly from the Port of Baltimore, taking advantage of the convenient location of the Port at the heart of the nation's third most affluent consumer market and its fourth most populous region

MAA: NUMBER OF NONSTOP AIRLINE MARKETS SERVED

Growth in the number of nonstop destinations served provides enhanced mobility options to passengers traveling to cities in the U.S. and around the world, increases the attractiveness of BWI Marshall Airport as the airport of choice in the region, and reflects the success of MAA's marketing efforts to increase the competitiveness of BWI Marshall Airport for business and leisure travel.



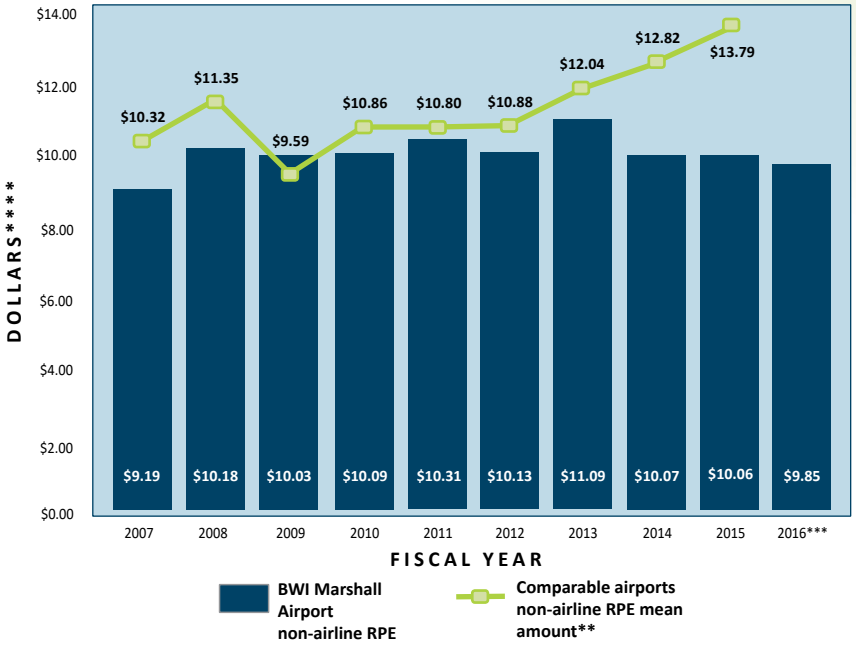
Why Did Performance Change?

- The total number of airline passengers at BWI Marshall Airport increased 8.4% to nearly 24.7 million, an all-time FY record for total passengers at BWI Marshall Airport
- BWI Marshall Airport broke monthly passenger records for each of the months in FY 2016
- The number of nonstop markets served in the fiscal year was slightly higher than what was forecasted
- Allegiant Airlines started service from BWI Marshall Airport in April 2016 to six nonstop destinations, including five that previously had no nonstop service
- Alaska Airlines increased service by adding new nonstop flights to Los Angeles in September 2015 and Spirit added nonstop service to five new destinations in 2016, including Boston, Fort Myers and Tampa/ St. Petersburg
- Southwest added new service to Minneapolis/ St. Paul; San Jose, CA; and Sacramento, CA
- Both WOWair and Condor increased service from BWI Marshall Airport during 2016

What Are Future Performance Strategies?

- Continue to meet with both potential new entrant and current carriers to promote potential new air service opportunities to BWI Marshall Airport
- Focus BWI Marshall Airport advertising and awareness campaigns to passengers on the advantages and options the airport offers. Such services include air service options, parking, and ease of access and ground transportation options
- Continue to highlight BWI Marshall Airport as the "easy come, easy go" gateway to Washington D.C.

MAA: NON-AIRLINE REVENUE PER ENPLANED PASSENGER (RPE)*



TARGET: BWI Marshall non-airline RPE to be at or above the mean of comparable airports**

** RPE is based on non-airline revenue (e.g., parking, concessions and ground transportation).*
*** Comparable airports are defined as Washington Reagan National, Washington Dulles International and Philadelphia International.*
**** 2016 data is preliminary and subject to change.*
***** Data shown in past reports were adjusted for inflation. Data shown presently have not been adjusted.*

Why Did Performance Change?

- Dulles and Philadelphia airports see a higher number of international passengers, which results in higher Duty-free sales
- Cargo revenues are included in RPE, the UPS operation at the Philadelphia airport generates significant landing fees and cargo revenues, resulting in a higher RPE
- BWI Marshall Airport continues to compare favorably with its peer airports on non-airline RPE
- An increase in connecting passengers is being monitored, as connecting passengers spend less money at the airport than a local passenger
- BWI Marshall Airport continues to enhance and change concession offerings to maximize revenue potential in the terminal

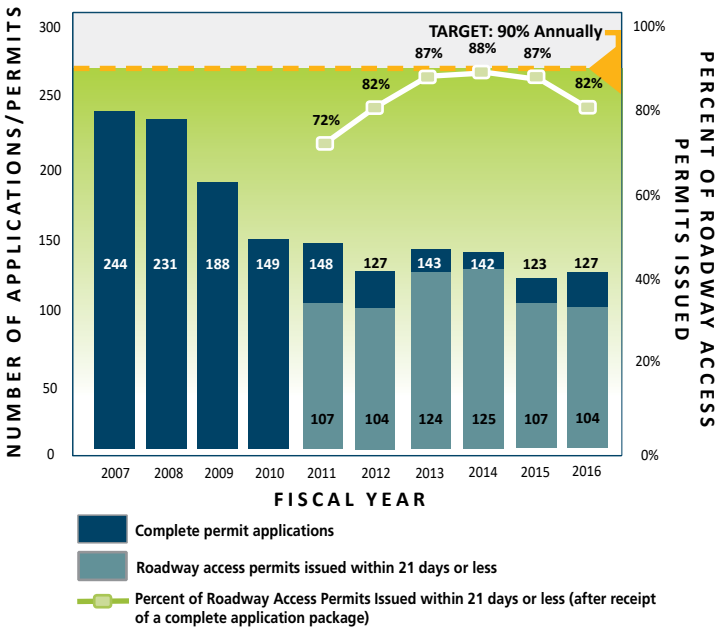
What Are Future Performance Strategies?

- Continue parking strategies to increase overall parking revenues
- Work in conjunction with BWI Marshall Airport's master concessionaire to enhance the existing retail, food and beverage concessions in the terminal by adding recognized local and national new concepts

SHA: PERCENT OF ROADWAY ACCESS PERMITS ISSUED WITHIN 21 DAYS OR LESS (AFTER RECEIPT OF A COMPLETE APPLICATION PACKAGE)

Access permits help promote safe and efficient roads for travel while supporting economic growth for jobs and businesses. Issuing access permits and construction of roadway and entrance improvements by developers are some of the last steps before opening businesses and/or selling commercial or residential properties for occupancy. This contributes to a larger tax base for the State, creation of jobs for businesses and redevelopment of vacant properties.

This measure tracks SHA efforts to improve customer service with a predictable, consistent and transparent process for obtaining an access permit in Maryland.



Why Did Performance Change?

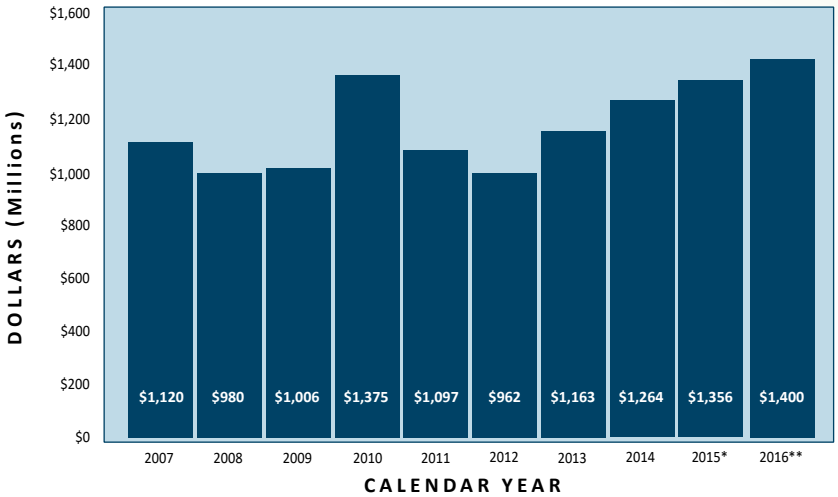
- In July 2015, the function of managing access to state highways was decentralized from SHA headquarters to the seven district offices and staff was reassigned to the district offices proportionate to the districts' workloads
- In a 2016 Access Management customer feedback survey regarding how interactions compared prior to decentralization, respondents rated SHA as 58% better in the speed and accuracy of SHA responses, 50% better with consistent answers to questions, and 66% better in the working relationships and providing helpful recommendations and information
- MDOT/SHA hosted a 2015 forum for Access Permit customers to gather feedback and suggestions for improvements, which became action items that SHA staff are executing, including configuring software to accept electronic plan submittals, digitally storing and disseminating permit information for review, tracking review progress and measuring and reporting performance
- Staff have completed customer service trainings; ongoing efforts are being pursued to improve written communications, revamp the Access Manual, align Traffic Impact Study requirements more closely with those of the counties and incorporate Practical Design into decision-making

What Are Future Performance Strategies?

- The Access Management forum and the Access Management customer feedback survey brought to light aspects of access management operations that needed improvements, which will become the foundation of a collaborative work plan with our stakeholders
- Continue to meet with stakeholder groups to assess effectiveness of changes and resource needs
- Implement a process for pre-application meetings to clarify all stakeholder expectations during the conceptual phase of the project
- Explore the possibility of allocating additional resources; specifically, hydraulic reviewers and/or access management-specific administrative staff
- Complete ePlanReview software application implementation in December 2016 to create accountability for SHA and the developers (and their engineers) on specific review and submission time frames

SHA: USER COST SAVINGS FOR THE TRAVELING PUBLIC DUE TO INCIDENT MANAGEMENT

The total user cost savings to motorists and commercial traffic (from reduced delay on Maryland state and interstate roadways) reflects the tangible benefits of the Coordinated Highways Action Response Team (CHART) incident management program.



TARGET: $1,400 Million Annually

** 2015 data revised from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

Why Did Performance Change?

- Helped reduce delay by 39.2 million vehicle-hours
- Saved roadway users a total of $1.356 billion
- Facilitated 82 Strategic Highway Research Program 2 (SHRP2) Traffic Incident Management Responder training sessions to 1,381 incident responders in Maryland (including representatives of various law enforcement, fire, emergency medical services and transportation agencies at the state, county and local levels)
- Handled 115,552 events, including incident responses, assistance with disabled vehicles and traffic management operations for special and weather-related events

What Are Future Performance Strategies?

- Evaluate the CHART patrol expansion to determine the improvements in reduction in roadway delays and user cost savings
- Implement an Integrated Freeway and Arterial Master Plan by July 1, 2017
- Continue providing SHRP2 Traffic Incident Management training to partner organizations in Maryland
- Implement Work Zone Impacts and Strategies Estimator (WISE) initiative by September 2017

GOAL Safety & Security

Enhance the safety of transportation system users and provide a transportation system that is resilient to natural or man-made hazards

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Reduce the number of lives lost and injuries sustained on Maryland's transportation system
- Provide secure transportation infrastructure, assets and operations for the safe movement of people and goods

Maryland's Toward Zero Deaths approach to highway safety builds partnerships within and between government agencies, safety stakeholders, transportation professionals, nontraditional partners and private citizens in order to reduce transportation-related fatalities to half by 2030 and eventually to zero. A number of coordinated efforts addressing the State's toughest safety issues, including impaired driving, distracted driving and occupant protection, were implemented throughout the year to educate people on these unsafe behaviors and enforce traffic laws. For example, in March, overhead message signs, reading, "Wear Shamrocks, Not Handcuffs, Drive Sober," reminded drivers to plan for a sober ride home. In April, Maryland State Police (MSP), MDTA Police, American Automobile Association (AAA) and AT&T launched a statewide signage campaign to raise awareness about the distractions of handheld devices when driving. In May, MDOT, the National Highway Traffic Safety Administration (NHTSA), and Baltimore County Police hosted a crash simulation, demonstrating the need for all passengers, especially those in the backseat, to buckle up when in a vehicle. In advance of the Fourth of July holiday weekend, MDOT and the MSP increased awareness efforts of the State Police Impaired Driving Effort (SPIDRE), an elite enforcement team that uses crash data to target and remove impaired drivers.

To continue implementing proven measures like the ones listed above, Maryland stakeholders from engineering, education, enforcement and emergency response developed and adopted the 2016-2020 Strategic Highway Safety Plan (SHSP). The Plan provides more than 30 separate strategies for lowering fatalities and serious injuries related to impaired drivers, distracted drivers, unbelted motorists, aggressive drivers, bicyclists, pedestrians and infrastructure. Seeing only minimal declines in alcohol and drug related crashes in particular, strategies in the SHSP focus heavily on impaired driving. Maryland intends to spend approximately $4 million in federal funds in this area, including dedicating a significant portion to SPIDRE.

Safety efforts focused on engineering solutions are also applied to safety problems. For example, bridge replacements ensure safe crossings; pavement preservation projects reduce safety-related roadway defects and improve control of the vehicle; and installation of proven safety countermeasures like guardrails help keep vehicles on the roadway. Upcoming safety investments on Maryland's roadways include a $48.5 million bridge deck and superstructure replacement for the bridge carrying I-895 over the Patapsco River Flats.

Another notable achievement is the recognition of MTA police, who were honored for keeping the transit system safe. Among the top 12 transit agencies in America, MTA has the lowest number of serious crimes.

KEY INITIATIVES AND CTP PROJECTS

MAA: Enhance public safety by completing the second phase of the Runway Safety Area (RSA) Standards Compliance and Pavement Management Program (PMP) Improvements. The PMP program consists of the design and construction of the Runway 10-28 RSA compliance, standards and improvements to meet the Federal Aviation Administration (FAA) standards.

MDTA: MDTA Police, in coordination with MSP, AAA and AT&T, launched a coordinated statewide effort to reduce crashes related to the distractions of handheld cell phones. MDTA installed 26 signs, alerting motorists that "It Can Wait!" prior to 13 rest areas. The signs are a reminder of Maryland's law that prohibits the use of handheld electronic devices while driving.

MPA: MPA dredged roughly 2.6 million cubic yards of material from the Baltimore Harbor and Channels to ensure the shipping lanes, which carry key commodities in and out of the region, are safe for navigation. MPA will continue to advance port security through improvements identified in the FY 2017- FY 2022 CTP Terminal Security Program. Key improvements include: iCCTV coverage expansion and upgrades; CCTV Analytic; intrusion beam barrier installation; access control installation at North Locust Point Terminal; placement of mobile security booths; and a Cyber Vulnerability Assessment.

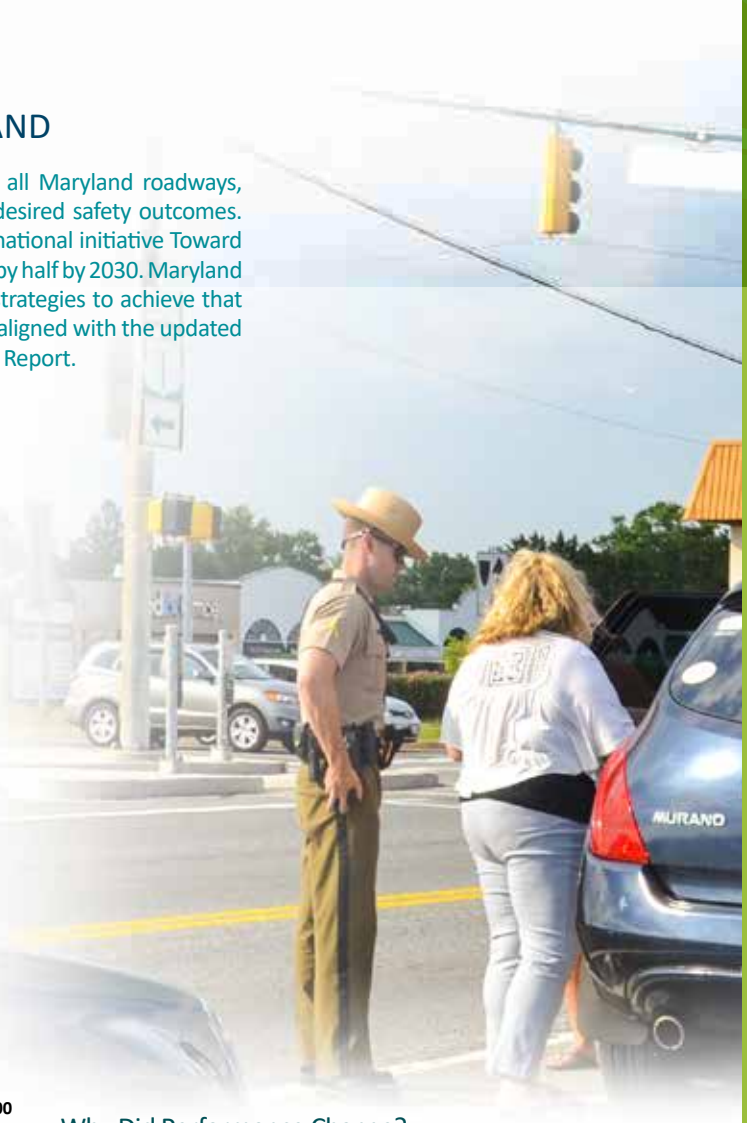
MTA: MTA provides excellence in its safety and security programs, and in operations. American Public Transit Association (APTA) awarded the MTA with the GOLD Award for Heavy Rail Security and Light Rail Safety. The Heavy Rail award recognizes MTA's Zone Enforced Unified Sweeps, which prevent serious offenses and crimes from occurring throughout the system. The Light Rail Safety award highlights MTA's success in keeping employees and contractors safe while working in the track area.

MVA: MVA monitors Maryland's Ignition Interlock Program. An ignition interlock is a device that prevents a vehicle from starting when it detects a certain level of alcohol on the driver's breath. To help save lives by removing more drunk drivers from Maryland roadways, Governor Larry Hogan supported and signed the Drunk Driving Reduction Act of 2016 (Noah's Law), which went into effect October 1, 2016. The law will save lives by requiring ignition interlock for all convicted drunk drivers.

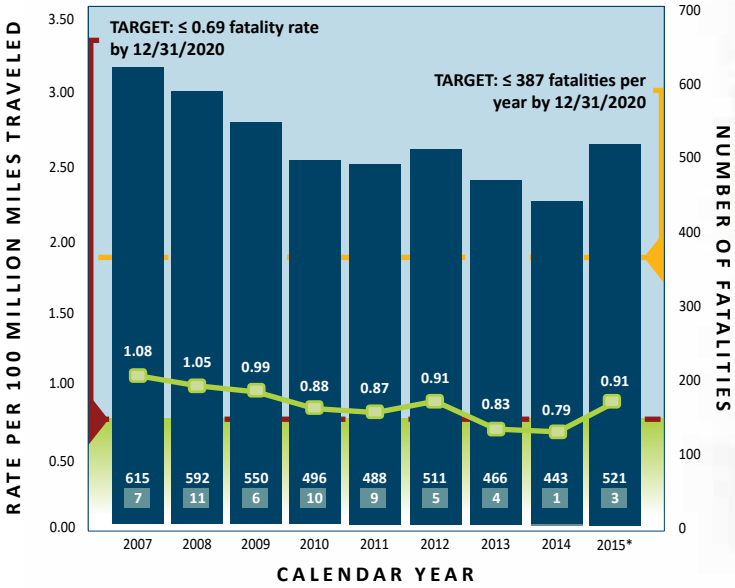
SHA: SHA launched a new education effort aimed at bicycle safety, called "A Cyclist Might be Someone You Know." Campaign messaging, spread throughout Maryland using public service announcements, billboards, social media and outreach events, reinforces to cyclists and drivers the need to look out for each other, see and be seen, and to expect and respect each other. Work continues on the MD 2 pedestrian roadway safety audit. Safety projects include US 1 College Park Pedestrian, Bicycle and Safety Improvements; MD 404 Widening between US 50 and the Denton Bypass; US 113 Widening (Phase 4), Worcester Highway; and MD 5 Intersection Improvements.

MVA/SHA/MDTA: ANNUAL NUMBER OF TRAFFIC FATALITIES & INJURIES ON ALL ROADS IN MARYLAND

Maryland measures the numbers of both traffic fatalities and injuries on all Maryland roadways, focusing on fatalities and serious injuries in six emphasis areas related to desired safety outcomes. Maryland joined other states and organizations in adopting the goal of the national initiative Toward Zero Deaths: A National Strategy on Highway Safety, to reduce traffic fatalities by half by 2030. Maryland supports the long-term goal of zero deaths and is committed to adopting strategies to achieve that purpose. Attainment Report fatality and injury reporting is anticipated to be aligned with the updated 2016-2020 SHSP and MAP-21/FAST Act requirements in the next Attainment Report.



ANNUAL NUMBER OF TRAFFIC FATALITIES ON ALL ROADS IN MARYLAND



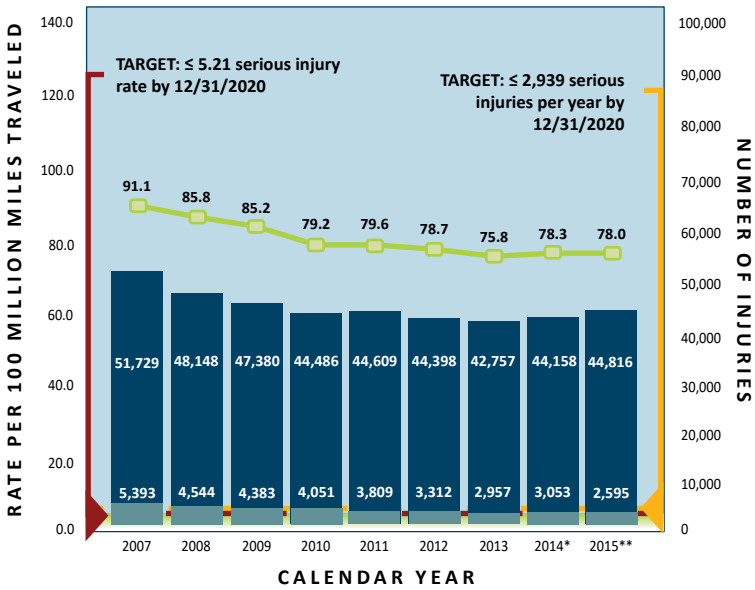
Annual number of traffic fatalities on all roads in Maryland (including MDTA-owned roads)

Annual number of traffic fatalities on all MDTA-owned roads, a subset of total annual number of traffic fatalities on all roads in Maryland

Traffic fatality rate per 100 million miles traveled on all roads in Maryland

** 2015 data is preliminary and subject to change.*

ANNUAL NUMBER OF PERSONAL INJURIES ON ALL ROADS IN MARYLAND



Annual number of personal injuries on all roads in Maryland

Annual number of serious personal injuries on all roads in Maryland

Personal injury rate per 100 million miles traveled on all roads in Maryland

** 2014 data revised from previous Report.*
*** 2015 data is preliminary and subject to change.*

Why Did Performance Change?

- The results of the run-off-the-road study led to an updated SHA policy on rumble strips, to include the beltways and all interstate roadways
- Implemented pedestrian roadway safety audits to improve a data-driven approach to the selection and programming of pedestrian safety enhancement projects and educational outreach
- Implemented educational marketing in tandem with engineering improvements, as well as targeted geographic areas with specific issues (i.e., pedestrian safety at schools and college campuses, bicycle safety where cyclists commute)
- Serious injuries decreased due to a change in the way law enforcement is reporting on the injury severity codes

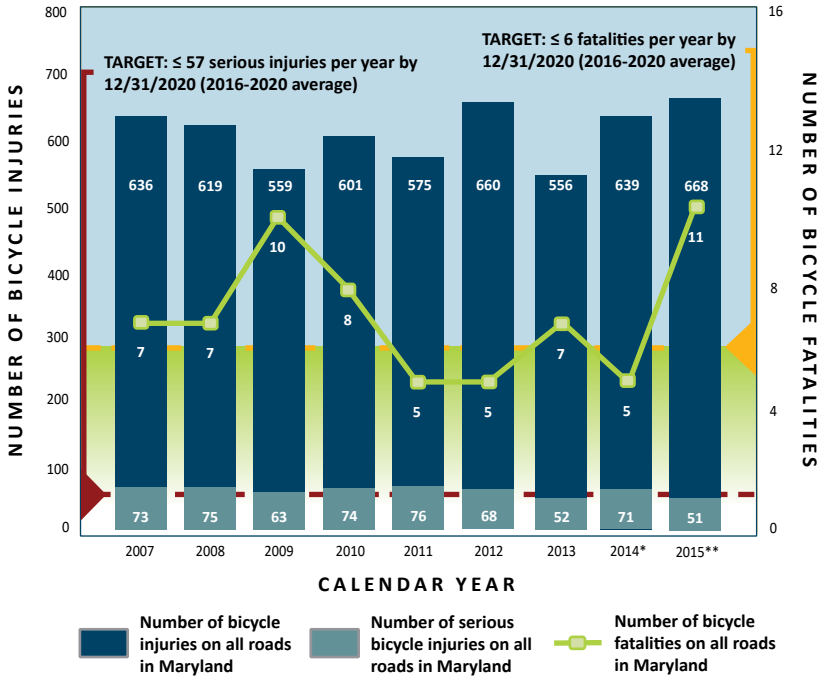
What Are Future Performance Strategies?

- Focus on geographical locations with the highest crash severity
- Develop and implement a communications and marketing plan that addresses high priority traffic safety issues
- Explore increased social media marketing to engage audiences directly on critical safety issues
- A team has been assembled to work on geospatial analysis of crash data to identify high risk curves and screen candidate locations for high friction surface treatments
- Host National Work Zone Safety Awareness Week kickoff, leading unified efforts to maximize audience reach

MVA/SHA: NUMBER OF BICYCLE & PEDESTRIAN FATALITIES & INJURIES ON ALL MARYLAND ROADS

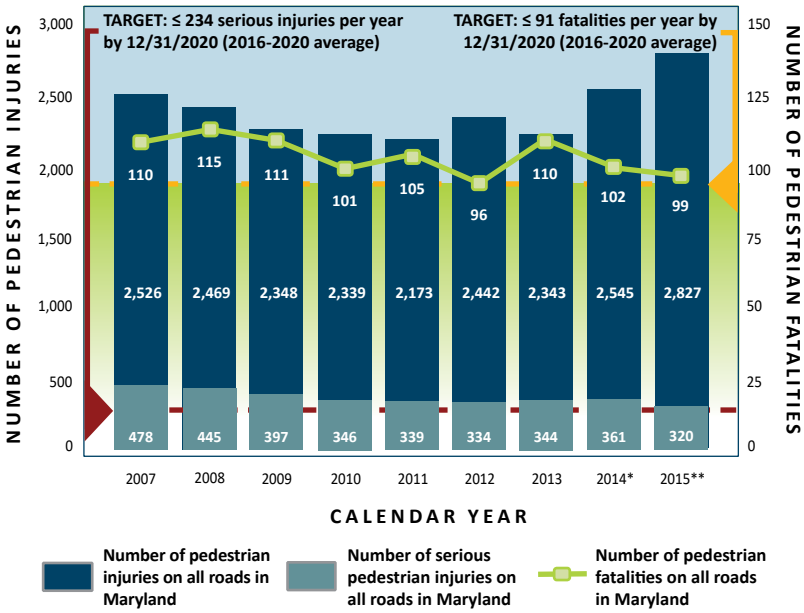
Maryland measures reductions in the actual numbers of traffic fatalities and injuries on all Maryland roadways, with focus on fatalities and serious injuries in six emphasis areas, as desired safety outcomes. Maryland joined other states and organizations in adopting the goal of the national initiative Toward Zero Deaths: A National Strategy on Highway Safety, to reduce traffic fatalities by half by 2030. Maryland supports the long-term goal of zero deaths and is committed to adopting strategies to achieve that purpose. Attainment Report fatality and injury reporting is anticipated to be aligned with the updated 2016-2020 SHSP and MAP-21/FAST Act requirements in the next Attainment Report.

NUMBER OF BICYCLE FATALITIES AND INJURIES ON ALL MARYLAND ROADS



** 2014 data revised from previous report.*
*** 2015 data is preliminary and subject to change.*

NUMBER OF PEDESTRIAN FATALITIES AND INJURIES ON ALL MARYLAND ROADS



** 2014 data revised from previous report.*
*** 2015 data is preliminary and subject to change.*

Why Did Performance Change?

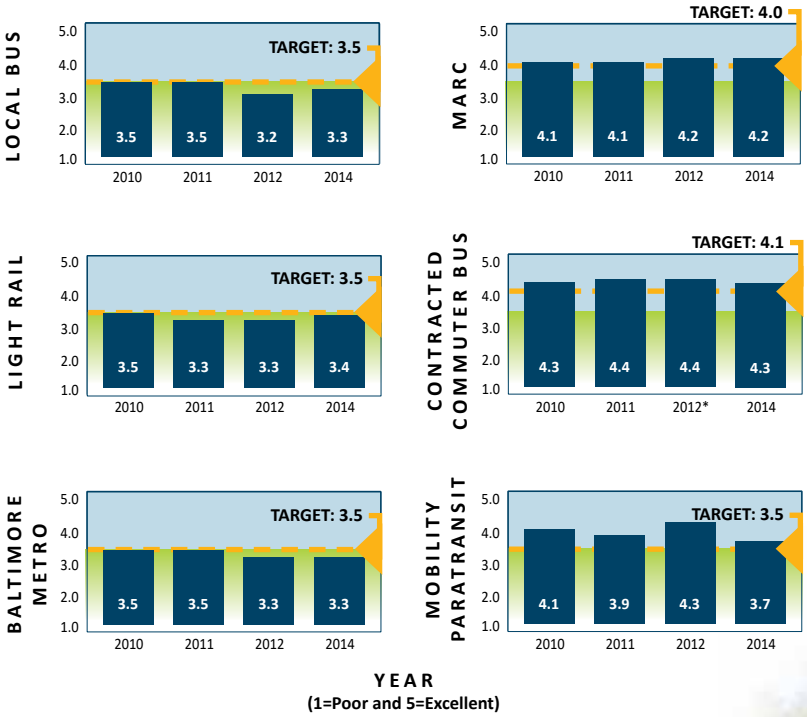
- Established an official pedestrian safety committee/task force within SHA which continued to develop a strategic approach to improve pedestrian safety around the State
- Identified high crash locations across the state to focus additional engineering, enforcement and education efforts to improve pedestrian safety
- Performed pedestrian safety audits and implemented innovative engineering techniques to improve pedestrian safety in high incident locations in Ocean City, College Park, and Montgomery, Prince George's and Baltimore counties
- Began implementing pedestrian safety action plans resulting from previously conducted pedestrian road safety audits, in coordination with local government and community leaders in high crash locations
- Recorded 99 pedestrian fatalities in CY 2015. The trend from 2008 to 2015 shows a decline in fatalities
- Continued to look for opportunities to accommodate bicycles consistent with MDOT and SHA bicycle policy and State law, and to implement improvements, such as marked bicycle lanes, where feasible within a project's scope
- Continued to work with the SHA bicycle committee to improve bicycle guidance and policies that pertain to SHA roadways
- Although 2015 recorded 11 bicycle fatalities, the long-term trend remained fairly steady at five to seven fatalities recorded annually

What Are Future Performance Strategies?

- Seek ways to coordinate education and enforcement efforts with engineering efforts to more effectively improve pedestrian and vehicular behaviors in high crash locations
- Work with local governments to coordinate on enhanced bicycle markings, such as green pavement (green-colored pavement to enhance visibility in bicycle lanes)

MTA: CUSTOMER PERCEPTIONS OF SAFETY ON THE MTA SYSTEM*

A positive perception of personal safety is correlated with higher ridership and stronger commitment to transit as a mode of travel.



** A Customer Satisfaction survey was not completed in 2009, 2013 or 2015. The last survey was completed in 2014. 2016 survey results will be provided in the next Attainment Report.*

Why Did Performance Change?

- Continued safety and security programs such as unannounced and highly visible police sweeps of MTA facilities and CompStat, a weekly review of all reported incidents
- Continued installation of closed circuit television (CCTV)
- Created a Mobile Field Force Team (deployable team of officers with special crowd control equipment and training)

What Are Future Performance Strategies?

- Continue use of unannounced police sweeps and CompStat programs
- Make improvements to the CCTV facility with state-of-the-art monitoring
- Implement upgrades to police radio communications for statewide coverage and interoperability improvements
- Implement enhanced crowd/rioting control training for all officers
- Support SchoolStat Taskforce, a joint program between the Baltimore City public schools and MTA that provides safe transportation options for students, while addressing school age crime and safety concerns

MTA: PREVENTABLE ACCIDENTS PER 100,000 VEHICLE MILES

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

CALENDAR YEAR	2009	2010	2011	2012	2013	2014	2015	2016	Target
Preventable accidents per 100,000 vehicle miles									
Local Bus	2.41	3.49	2.61	2.43	1.49	1.42	1.43	1.54	2.26
Light Rail	0.03	0.13	0.13	0.24	0.03	0.06	0.08	0.14	0.24
Baltimore Metro	0.00	0.11	0.10	0.06	0.00	0.00	0.00	0.00	0.06
Paratransit/Taxi Access	1.14	0.34	0.48	1.74	1.55	1.10	0.79	1.04	0.01

Why Did Performance Change?

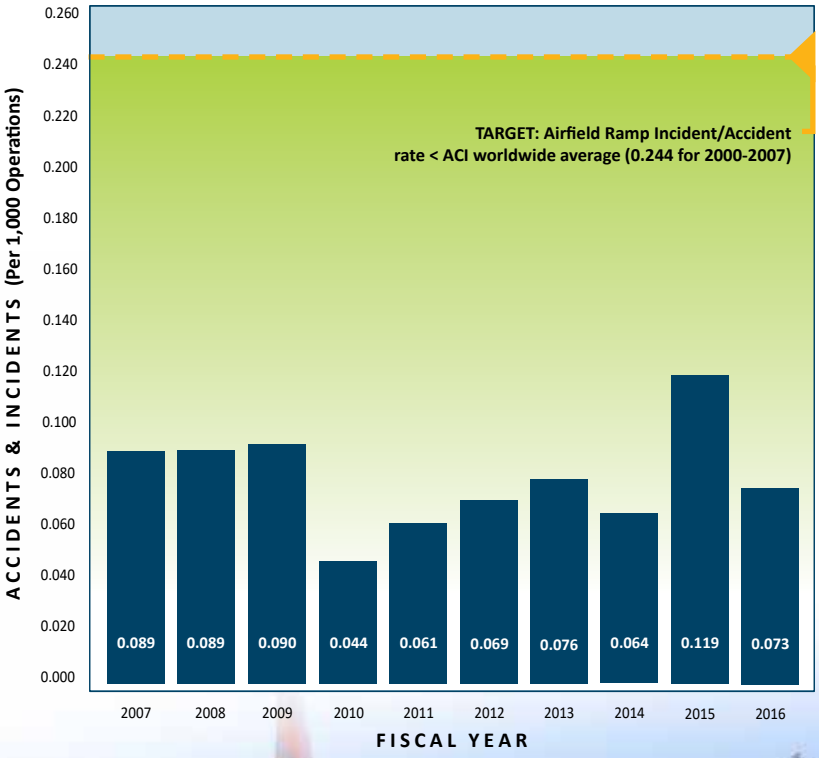
- Metro maintained a zero accident rate for the past several fiscal years
- Light Rail had a minimal increase of two accidents in FY 2015 to six accidents in FY 2016 (rate of 0.08 to 0.14)

What Are Future Performance Strategies?

- Enhancement of GIS applications to identify accident zones to address unsafe behaviors
- MTA will be reviewing the Safety Performance Evaluation System (SPES) policy for updates and streamlining
- Continue accountability efforts to ensure that operators with multiple preventable accidents receive appropriate retraining and corrective action via SPES on core modes: Local Bus, Light Rail and Baltimore Metro
- Improve management and auditing of Mobility service providers to ensure safety is meeting MTA expectations

MAA: RATE OF AIRFIELD RAMP INCIDENTS & ACCIDENTS PER 1,000 OPERATIONS

This measure provides an indication of the safety and security of operations-related activity at Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport). The rate of airfield incidents and accidents remains well below the average rate as reported by Airports Council International (ACI).



Why Did Performance Change?

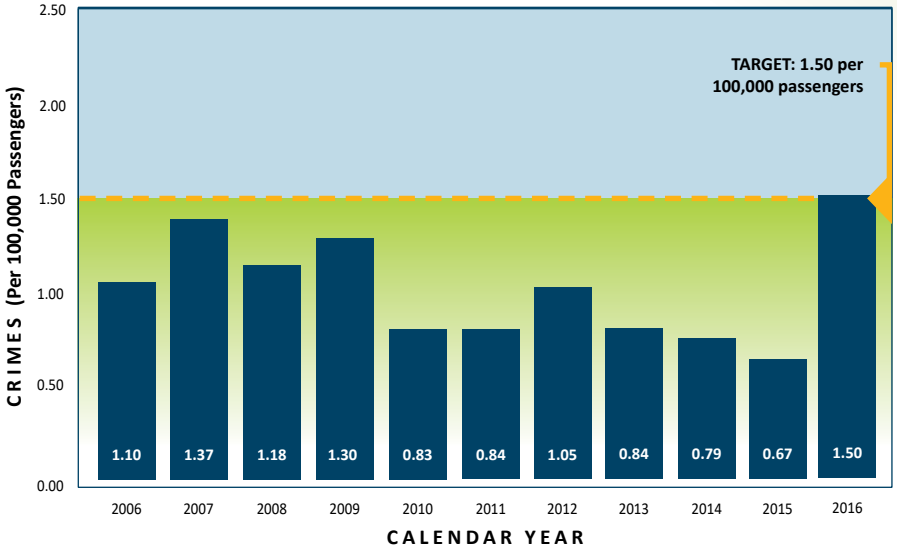
- The rate of airfield incidents and accidents remains well below the average rate as reported by ACI

What Are Future Performance Strategies?

- Continue to monitor all incident reports for trends that need to be addressed and implement safety changes as required
- Increase inspections by Airport Operations to identify problems and hazards before they become accidents and incidents
- Continue to implement Runway Safety Area (RSA) improvements to meet new federal standards and enhance airfield safety

MAA: BWI MARSHALL AIRPORT CRIME RATE

This measure provides an indication of the relative safety passengers experience when traveling through BWI Marshall Airport. Poor performance in this area could result in a decline in passenger numbers.



Why Did Performance Change?

- BWI Marshall Airport's actual number of crimes committed continues to be well below targets

What Are Future Performance Strategies?

- Continue inspections by Airport Operations to identify problems and hazards before they become accidents and incidents
- Continue strategies in place by MDTA police to reduce crime
- Continue to utilize CCTV to monitor, record and respond to security and life safety incidents

MAA: NUMBER OF REPEAT DISCREPANCIES IN THE ANNUAL FEDERAL AVIATION ADMINISTRATION'S FEDERAL AVIATION REGULATION INSPECTION

The passing of Federal Acquisition Regulation (FAR) Part 139, which governs the certification and operation of U.S. commercial airports, is required for the airport to remain open and operational. Each year, MAA works closely with the FAA to ensure that BWI Marshall Airport remains in compliance with the provisions of FAR Part 139 and maintains its FAA-issued operating certificate. Compliance is determined by annual inspections conducted by the FAA. Work orders are generated when Letters of Correction are issued and are given high priority with urgent resolution. BWI Marshall Airport successfully completed the 2015 FAA safety and certification inspection with zero repeat discrepancies. MAA will continue to address all discrepancies in accordance with the federally prescribed timeline. BWI Marshall Airport continues to pass the annual safety certification inspection process required to keep the airport open.

Why Did Performance Change?

- BWI Marshall Airport continues to pass the annual safety certification inspection process required to keep the airport open

What Are Future Performance Strategies?

- Continue to work closely with FAA to ensure that the airport passes its annual FAA Part 139 safety and certification inspection
- Continue working with FAA to implement a pilot Safety Management System (SMS) program
- Continue efforts to work toward a goal of 100% compliance with FAA safety and certification requirements
- Continue to reduce the number of noted discrepancies and reduce airfield safety incidents involving aircraft, vehicles and personnel

MPA: COMPLIANCE WITH THE MARITIME TRANSPORTATION SECURITY ACT OF 2002

MPA incorporates a personnel and physical security plan, which meets security requirements as outlined within the Maritime Transportation Security Act of 2002 (MTSA). MPA documents its security procedures within its Facility Security Plan, which is approved by the U.S. Coast Guard. For the past seven years, the MPA has received "Excellent" ratings following the U.S. Coast Guard's annual security inspection.

MPA is required to maintain and execute a Facility Security Assessment and Facility Security Plan. The U.S. Coast Guard has approved the Facility Security Plan for all MPA terminals and this plan currently meets the MTSA 2002 requirements. MPA continues to assess its security plans and make adjustments or additions to maintain the delicate balance between security requirements and enhanced commerce capabilities. In 2015, MPA completed physical security enhancements at the North Locust Point Marine Terminal Gate, and is currently conducting a cyber-related vulnerability assessment of physical security technology and CCTV Video Analytics, to be completed in FY 2016.

Why Did Performance Change?

- MPA continues to assess its security plans and make adjustments or additions to maintain the balance between security requirements and enhanced commerce capabilities
- MPA is currently conducting a cyber-related assessment of physical security technology
- MPA's security program is recognized as one of the top maritime security programs in the United States. MPA has received perfect U.S. Coast Guard annual security inspections for three consecutive years and overall has received seven straight excellent or above inspection ratings. The MPA was recognized by Government Security News as the magazine's 'Most Notable Seaport Security Program'

What Are Future Performance Strategies?

- Remain an active participant within the State's CCTV Interoperability System which is managed by Maryland Coordination and Analysis Center (MCAC)
- In the near term, execute capital projects (state and federal funds) to improve and protect critical infrastructure on the public terminals of the Port of Baltimore, including: Dundalk gate upgrades, CCTV Video Analytics, Cyber Vulnerability Assessment, Emergency Alert System and Systems Integration
- MPA is an active participant in maritime and homeland security initiatives with federal, state and local Port partners which includes the U.S. Coast Guard's Area Maritime Security Committee and the American Association of Port Authorities' Security Committee

MVA: PERCENT OF HOMELAND SECURITY REAL ID ACT BENCHMARKS ACHIEVED

The Federal REAL Identity Act of 2005 (REAL ID) set new standards for issuing driver licenses and identification cards and is intended to improve the integrity and security of State-issued driver licenses and identification cards. Maryland was one of the first states in the country to become REAL ID compliant and MVA's new secure cards continue to meet strict federal standards while protecting Maryland residents from identity theft and fraud. The REAL ID compliant license in Maryland requires an individual to provide proof of lawful presence in the United States, per legislation enacted in 2009. The federal government has phased in the REAL ID process over time to enable states to achieve the required 39 federal benchmarks in order to be in full compliance with REAL ID.

As of September 2016, the MVA has achieved a 100% Material Compliance rate since September 2015, achieving 18 of 18 required material compliance benchmarks, and a 95% full compliance rate, meaning 37 of the 39 benchmarks are complete. After all federal systems become fully implemented, Maryland will work to achieve all 39 benchmarks. The MVA continues to implement technical and program enhancements as they become available by the federal government, in partnership with the American Association of Motor Vehicle Administrators (AAMVA), in an effort to achieve full compliance.

Why Did Performance Change?

- The implementation of Maryland's new Secure Identification Card continues to meet the requirements of the Federal REAL ID Act
- MVA completed two additional benchmarks this year, including 'State 2 State' and control (serial) number identification based on the new MD Secure ID cards processing

What Are Future Performance Strategies?

- Continue to proactively implement policies, procedures and technologies to achieve completion of the Federal REAL ID benchmarks
- Continue to implement State-to-State verification process

GOAL System Preservation

Preserve and maintain the State's existing transportation infrastructure and assets

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Preserve and maintain State-owned or supported roadways, bridges, public transit, rail, bicycle and pedestrian facilities, port, airports and other facilities in a state of good repair.

The State's roadway and bridge network serves as the backbone of the transportation network, connecting communities, economic centers and transportation hubs. The preservation and maintenance of Maryland's existing transportation infrastructure and assets is essential to assure that its assets can continue to contribute to mobility throughout the state. This is a priority for MDOT and its transportation business units, working to ensure that the system is maintained, works efficiently and reflects investments on a life-cycle basis that has the potential to reduce long-term costs. Bridge and highway maintenance continues to be a significant funding priority in the FY 2017-FY 2022 CTP with investments in resurfacing, bridge replacement, capacity improvements, facility and asset rehabilitation, as well as continuing preservation activities. In FY 2016 alone, system preservation investments totaled $1.1 billion, with 72 highway segment resurfacing projects, nine bridge rehabilitation projects, 62 safety/roadway design improvements and 212 other multimodal rehabilitation projects.

The condition of the roadways and bridges are vital for ensuring these connections remain viable, efficient and safe. SHA has continually invested in roadway resurfacing, spending more than $294 million in FY 2016, an increase of 10% from FY 2015. This is part of an additional $250 million investment in our pavements made by the Governor over the next three fiscal years. Likewise, bridge rehabilitation has been a key focus for SHA, with the goal of reducing the number of bridges identified as "structurally deficient." Though these bridges are safe for travel, they need to be programmed for repairs or replacement. As of April 2016, 69 bridges are classified as structurally deficient out of the 2,564 bridges on the SHA highway network, a decrease of nearly 52% since 2006. MDTA's bridge maintenance actions have already resulted in significant improvements to the MDTA infrastructure and will ensure the agency's ability to continue to provide EZ-passage throughout Maryland.

The preservation and maintenance of the State's transit system, ports, airports, and bicycle and pedestrian facilities, and vehicle registration records is critical for continuing the connectivity and efficiency of the network. MDOT allocates approximately $6.0 billion in the FY 2017-FY 2022 CTP for system preservation projects throughout Maryland across the transportation business units. This includes $300 million for the Maryland share of Washington Metropolitan Area Transit Authority (WMATA) state of good repair and preservation program, $175 million for MDOT, $85 million for MVA, $205 million for MAA, $215 million for MPA, $425 million for MTA and $4.9 billion for SHA. These investments across agencies and modes will ensure Maryland's transportation system continues to provide safe, reliable and efficient transportation options.

KEY INITIATIVES AND CTP PROJECTS

MAA: Investment in runway, terminals and passenger facilities at Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport) and other airports around the state. BWI is continuing to invest and complete the multi-phase comprehensive Runway Safety Area (RSA) Standards Compliance and PMP Improvements, including runway rehabilitation and connecting/creating taxiways to meet FAA safety and design standards.

MDTA: Support preservation of all MDTA facilities and expand the current system preservation program to include preventative maintenance activities, such as the rehabilitation and maintenance on the US 301 Harry W. Nice Memorial Bridge in FY 2016. Future highway links and bridges that are planned for preservation investments include the I-95 John F. Kennedy Memorial Highway, I-95 Fort McHenry Tunnel, I-695 Francis Scott Key Bridge, I-895 Baltimore Harbor Tunnel Thruway and the US 50/301 Bay Bridge.

MPA: Continue to renovate port facilities at Dundalk Berths 1- 4, manage an effective dredging program to maintain and improve shipping channels to the Port of Baltimore and continue the Port of Baltimore Export Expansion Project, focusing on Seagirt and Fairfield Marine Terminals.

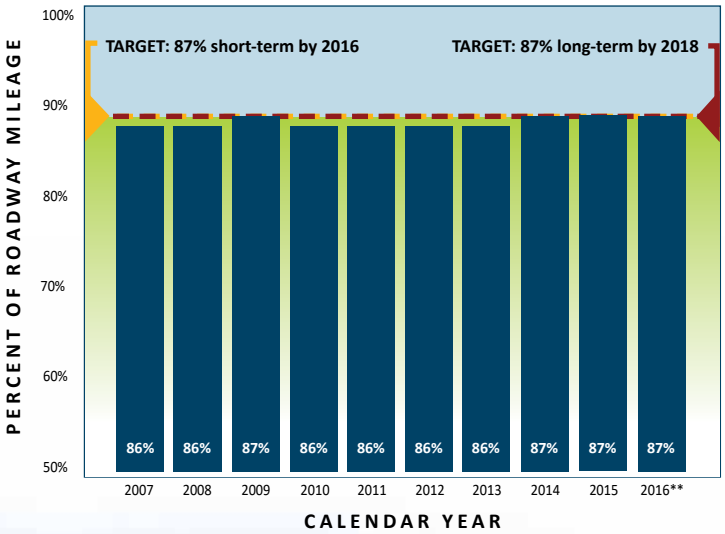
MTA: Continue to invest in the maintenance and preservation of all MTA facilities, including the construction of the new MARC BWI Rail Station, annual bus procurement to replace vehicles in service for 12 or more years and perform a mid-life overhaul of the Light Rail vehicle fleet, Metro Rail signals and track repair, Metro Rail railcar replacement, and the construction of the new Kirk and Bush facilities.

MVA: Maintain facilities while preserving and improving the operations of the agency by modernizing IT infrastructure. Comprehensive IT modernization plan aims to improve customer service and increase employee productivity.

SHA: Continue investing in maintenance of structurally deficient bridges throughout the state, simultaneously increasing the use of more durable roadway materials and recycled materials. Some of the major preservation and maintenance projects include the I-695 Baltimore Beltway bridge over Crosby Road, bridge replacement on I-95/I-495 over Suitland Road, I-83 Harrisburg Expressway bridge over Padonia Road and I-81 Maryland Veterans Memorial Highway bridge over the Potomac River.

SHA & MDTA: PERCENT OF ROADWAY MILES WITH ACCEPTABLE RIDE QUALITY*

The traveling public has identified acceptable ride quality (i.e., the smoothness or roughness of the pavement) as a priority. Ride quality facilitates mobility, efficiency and safe movement of people and goods within Maryland.



** Ride quality is represented by the International Roughness Index (IRI).*
*** 2016 data is preliminary and subject to change.*

Why Did Performance Change?

- SHA continued to focus on improving roadways with deficient ride quality and increased use of non-traditional pavement preservation treatments, where appropriate, to extend the service life of SHA roadways at the lowest possible cost
- MDTA's revised approach toward system-wide preventative maintenance and preservation emphasizes an advanced response to needs identified in the annual inspection reports
- MDTA overhauled and enhanced their inspection program over the past several years to better identify, report and address inspection findings; developed and implemented the Facility Inspection Program Strategic Plan with an action plan to drive the program and define its priorities; and continued the use of an integrated facility management software to collect inspection findings, track repair efforts and compare facility needs over time
- MDTA performed needed preservation improvements to all facilities, including resurfacing travel lanes and ramps, rehabilitating and/or painting of bridges, and upgrading signs and lighting

What Are Future Performance Strategies?

- Increase the use of more durable materials in high-demand SHA roadways and investigate alternative pavement treatments to extend the pavement life within budget realities
- Target low surface friction locations on SHA roadways and expand the use of recycled materials in SHA roadway projects
- Continue to implement the Federal Highway Administration (FHWA) and SHA Pavement Preservation program to strategically utilize system preservation activities
- Focus on higher-priority prevention and maintenance
- Utilize design and construction contract schedules to perform structural repairs in high priority preventative maintenance programs

SHA & MDTA: NUMBER OF BRIDGES & PERCENT THAT ARE STRUCTURALLY DEFICIENT

The structurally deficient rating is an early warning sign for engineers to initiate the rehabilitation or replacement process and to use when prioritizing and recommending system preservation funding. The rating applies to three main elements of a bridge: 1) deck (riding surface); 2) superstructure (main supporting element of the deck); and 3) substructure (supports to hold up the superstructure and deck). These elements are rated on a scale from zero (closed to traffic) to nine (relatively new). If any of the three elements is rated as a four or less, the bridge is categorized as structurally deficient by federal standards. This does not mean that the bridge is unsafe; if a bridge becomes unsafe, it is closed. The transportation business units place a high priority on bridge programs, as impassable bridges can cause significant rerouting of traffic and congestion delay, and in rural areas, closed bridges can create significantly longer travel distances for rural communities' daily activities and commutes.

CALENDAR YEAR	2009	2010	2011	2012	2013	2014	2015	2016
Number Deficient- MDTA	12	4	5	4	1	1	1	1
Number Deficient- SHA	114	107	106	97	87	81	69	69
Total Number Deficient	126	111	111	101	88	82	70	70
Percent Deficient-MDTA	4.7%	1.5%	1.6%	1.3%	0.3%	0.3%	0.3%	0.3%
Percent Deficient-SHA*	4.4%	4.2%	4.1%	3.8%	3.4%	3.2%	2.7%	2.7%
Total Percent Deficient	4.5%	3.9%	3.8%	3.5%	3.1%	2.8%	2.4%	2.4%

TARGET: SHA target is less than 70 total bridges by CY 2017, MDTA target one or less total bridges by CY 2017

** 2009, 2011 and 2013 data revised from previous Report.*

Why Did Performance Change?

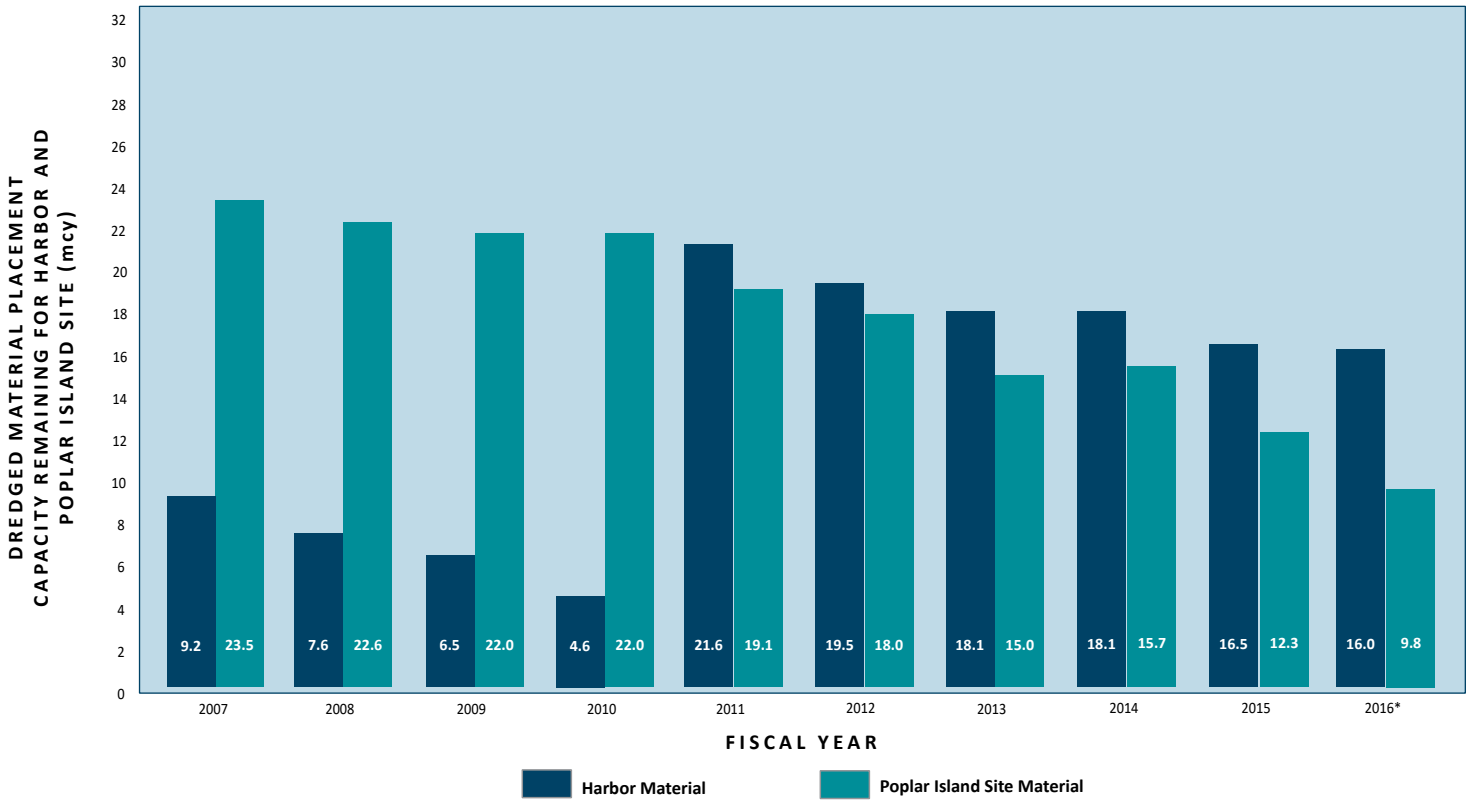
- SHA continued its aggressive bridge rehabilitation program with contractor construction crews working full-time, year-round to address bridges that were structurally or otherwise deficient
- SHA created plans to replace deficient structures that cannot be corrected by normal remedial work
- MDTA developed and implemented a comprehensive Facility Inspection Program, integrated facilities asset management software and completed a comprehensive inspection manual specific to MDTA
- MDTA implemented an aggressive System Preservation program, conducting inspections every year on all MDTA facilities
- Prioritized defects based on the confirmed rating of the defect
- MDTA recently completed an award-winning project to rewrap and dehumidify the cables of the US 50/301 Bay Bridge

What Are Future Performance Strategies?

- Replace the Canton Viaduct of the I-895 Baltimore Harbor Tunnel Thruway
- 20 SHA structurally deficient bridges were either advertised for bids or under construction as of April 1, 2016; 14 more are to be advertised by April 2017
- Deliver high-priority system preservation projects, such as multi-facility structural steel painting projects and suspension span rehabilitation on the Bay Bridge, and continue preliminary engineering of Nice Bridge replacement project

MPA: DREDGED MATERIAL PLACEMENT CAPACITY REMAINING FOR HARBOR & POPLAR ISLAND SITES

MPA is responsible for obtaining dredged material placement sites.



TARGET: Maintaining a rolling 20-year plan for adequate dredged material placement capacity

** 2016 data is preliminary and subject to change.*

Why Did Performance Change?

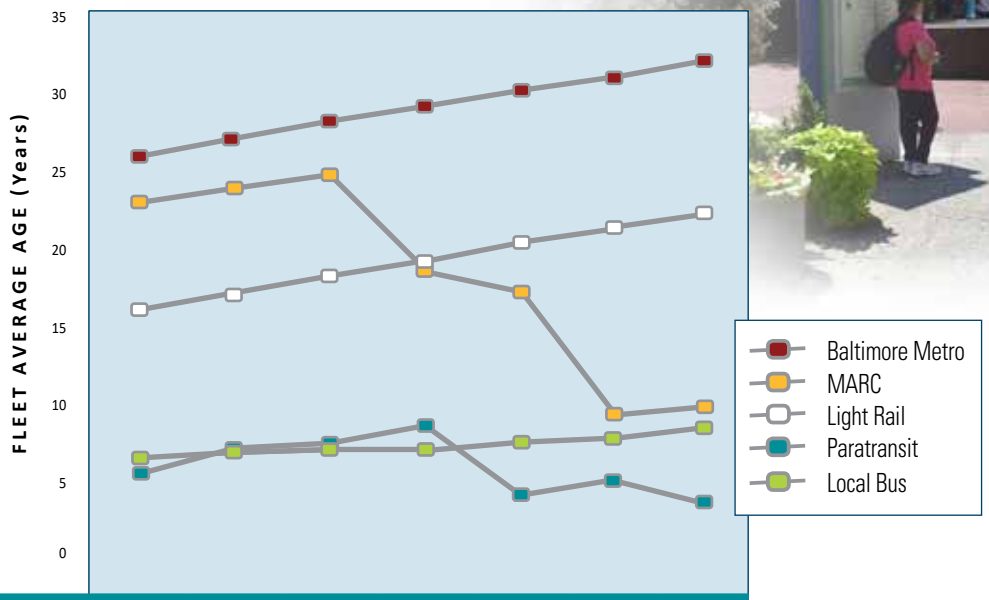
- Design continued for Stage 1 expansion of the Cox Creek Dredged Material Containment Facility that will bring an additional 6.5 million cubic yards (MCY) of Harbor material capacity online in FY 2020
- Two contracts were awarded to initiate expansion of Poplar Island in FY 2016, and contracts required to re-open Pearce Creek were awarded and work began in FY 2016
- A contract was awarded and substantially completed to construct a Confined Aquatic Disposal (CAD) pilot cell
- Safety and mobility efforts to ensure unimpeded shipping access to the Port have been effective. The Port of Baltimore compares extremely well with the other two fully functioning U.S. East Coast ports with 50 foot deep channels

What Are Future Performance Strategies?

- FY 2016, the MPA was responsible for operating three Dredged Material Management Program (DMMP) sites, including Masonville Dredged Material Containment Facility (DMCF), Poplar Island Environmental Restoration Project, and Cox Creek DMCF
- Construct and monitor a Confined Aquatic Disposal (CAD) pilot cell to determine whether this method of dredged material management will become part of the dredged material management program
- Continue construction of the Pearce Creek water line
- Manage an effective dredging program to maintain and improve the shipping channels for safe, unimpeded access to the Port by ensuring adequate placement capacity is available to meet dredging demand, removing access channel restrictions and improving the navigation system
- Maintain outreach program to communities, local jurisdictions, maritime and other harbor interests
- Continue strategic communication for the dredged material management program and public communication of actions leading to prioritization and ultimate recommendation for construction of placement sites and options
- Work with the Corps of Engineers and elected officials to ensure the Chesapeake & Delaware (C&D) Canal is properly maintained to the authorized depth and width
- The FY 2017-FY 2022 CTP includes $500 million to implement the Strategic Plan for Dredged Material Management, which will help maintain shipping channels
- Continue to grow MPA's active outreach, education and partnership programs in FY 2017

MTA: AVERAGE FLEET AGE OF TRANSIT REVENUE VEHICLES

The average fleet age of revenue vehicles is used to understand the status and age of the fleet used to transport patrons. Calculating fleet age informs the agency of the age of vehicles used in revenue service indicating fuel consumption, energy efficiencies, preventative maintenance needs and repair expectations.



	2010	2011	2012	2013	2014	2015	2016
Baltimore Metro	26.3	27.3	28.3	29.3	30.3	31.3	32.3
MARC	22.9	23.6	24.6	18.7	17.2	9.3	10.4
Light Rail	16.3	17.3	18.3	19.3	20.3	21.3	22.3
Paratransit	5.9	6.8	7.5	8.5	4.4	4.9	4.0
Local Bus	6.6	6.9	7.1	7.1	7.6	7.9	8.5

TARGET*: AVERAGE FLEET AGE OF SIX YEARS FOR THE LOCAL BUS SYSTEM

** Rail cars do not have a target for the fleet age as rather than replacing cars the vehicles are often overhauled, replacing or updating key components.*

Why Did Performance Change?

- Acquired 147 new Mobility sedans during FY 2016
- Acquired 41 new clean technology buses during FY 2015
- MARC received 54 new bi-level cars from Bombardier during FY 2015

What Are Future Performance Strategies?

- Overhaul MARC railcars and procurement of new diesel locomotives in accordance with manufacturer's schedule of retirement to maintain a state of good repair
- Continue with Light Rail's ongoing mid-life inspection and renovation to ensure vehicle reliability and useful life
- Enhance passenger comfort and conveniences, ensure better reliability, reduce system failures and offer improved safety through the replacement of all Metro vehicles and overhaul of Metro signaling systems
- Procure replacement vehicles and equipment repair for Mobility Paratransit
- Maintain the average age of the bus fleet

GOAL Quality of Service

Maintain and enhance the quality of service experienced by users of Maryland's transportation system

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Increase the efficiency of transportation service delivery through the use of systems, processes, partnerships, technologies and improved service delivery methods
- Maintain and enhance customer satisfaction with transportation services across modes
- Seek to maintain or improve travel reliability for key transportation corridors and services
- Continue to apply enhanced technologies to improve the transportation system and to communicate with the traveling public

The Quality of Service goal is focused on the customer experience. Marylanders depend on the State's transportation network every day as they connect to life's opportunities. They rely on the system to be reliable and efficient as commuters travel back and forth to work, transport providers move goods to market, tourists get to their destinations, the service industry provides services to clients, and residents meet their family's obligations including medical care and education. To meet the expectations of a comfortable, convenient and well-connected experience, MDOT executes various projects, programs and initiatives for ensuring quality of service throughout the network. This includes the overhaul and replacement of nearly 150 MARC coaches and 14 MARC diesel locomotives (in the FY 2017-FY 2022 CTP), Bus and Metro Rail vehicle replacements, Light Rail car overhauls, supporting alternative delivery systems for MVA customers such as the Internet and kiosks, and MDTA's update to the Electronic Toll Collection hardware and Operating System software.

MDOT joined other state agencies in the continued reduction of fees, tax and tolls. The latest round of fee elimination and reduction at MDOT accounting for $7.76 million in savings to the public, such as the *E-ZPass*® Transponder fee being reduced from $9 to $7.50, the *E-ZPass* "On-The-Go" being reduced from $34 to $32.50, and the MVA fee of $20 for veteran designation on driver's licenses has been eliminated outside the time of renewal.

Another key element to a high quality transportation system is a resilient network that is reliable for the movement of goods. Automobile crashes, weather and other unexpected events can lead to delays and with Maryland's businesses, freight and goods movement and residents depending on consistent and predictable travel times, MDOT is investing in decreasing congestion and improving travel conditions. This includes constructing express toll lanes (ETL) along I-95 John F. Kennedy Memorial Highway, construction of the MD 200 InterCounty Connector and implementation of Innovative Congestion Management (ICM) tools along I-270.

KEY INITIATIVES AND CTP PROJECTS

MAA: To keep flights boarding and unloading with ease, continue improvements at Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport) through the Loading Bridge Replacement Program, which consists of the purchase and installation of 15 new passenger-loading bridges. The replacement of the loading bridges is essential to supporting the safe movement of passengers on and off aircraft using terminal facilities.

MDTA: Innovations in the State's toll facilities, including the development and operating of the third generation of the electronic toll-collection systems, new tolling systems and customer-service operations for *E-ZPass*. This project will meet the evolving needs of toll users and adapt to the changing technologies.

MPA: Continue improvements at the South Locust Point Cruise Terminal for the comfort and convenience of cruise line passengers, such as new check-in counters, furniture and carpeting and an upgraded public address system.

MTA: MTA launched the Express BusLink in June 2016, as part of BaltimoreLink. The $135 million BaltimoreLink transit improvement plan connects people to jobs and improves suburb-to-suburb connectivity. These routes have express travel times and strengthen the comprehensive regional transit network.

MVA: Unveiled new self-service Vehicle Emission Inspection Program (VEIP) kiosks, which are available 24/7 and are conveniently installed at existing VEIP and MVA offices throughout the greater Washington and Baltimore regions. In addition, the cost of self-service kiosks was reduced from $14 to $10.

SHA: SHA's initiatives and projects will address congestion and improve quality of service throughout the state, including the $106 million widening of I-695 from US 40 to MD 144, the construction of a noise wall along MD 295 to benefit the Riverview/Baltimore Highlands Community and the addition of an auxiliary lane to southbound I-81 between MD 58 and US 40. SHA also announced the I-270 Congestion Management project, a $103 million plan to ease traffic delays along the heavily congested I-270 corridor in Montgomery County.

SHA: MARYLAND DRIVER SATISFACTION RATING*

Customer Satisfaction Surveys help determine if SHA services are better than average in the eyes of its customers. SHA strives to achieve a "B" grade, which is equivalent to a four out of five rating.

CALENDAR YEAR	2008	2010	2012	2014*
Rating	3.90	3.94	3.92	3.88

TARGET: 4 out of 5

** The Maryland driver satisfaction survey is conducted every other year. The 2016 survey was not conducted. SHA is part of "One MDOT" and will participate in the upcoming MDOT external customer service survey.*

Why Did Performance Change?

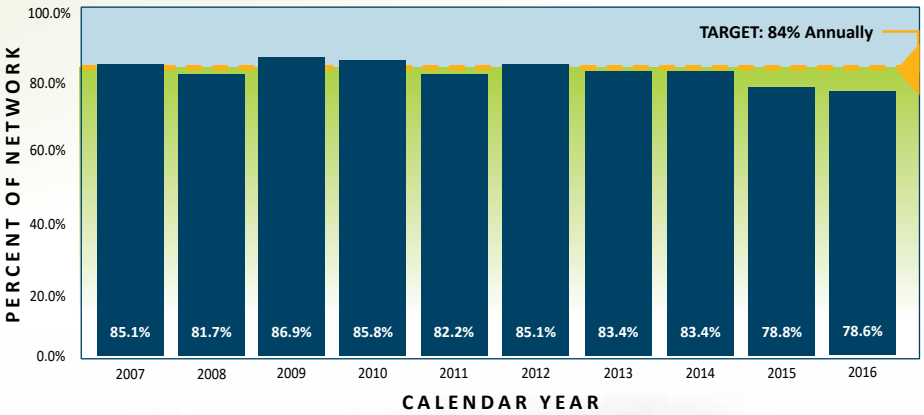
- Handled nearly 26,000 service requests via the Customer Care Management System (CCMS), SHA's online customer service system, including nearly 7,000 pothole inquiries
- Added CCMS Basic User training to the SHA online learning center, improving access and tracking abilities for employees required to take the training
- Completed enhancement to CCMS, streamlining SHA's ability to create service requests from social media posts via Facebook and Twitter
- Conducted CCMS face-to-face training at seven district offices and shops
- The percentage of customers who rated SHA as providing excellent or good customer service via the CCMS remained at approximately 60% in the last two years

What Are Future Performance Strategies?

- Deploy CCMS social media interface to expedite service requests initiated indirectly on social media platforms
- Integrate the Customer Service Promise with SHA customer service training
- Host more in-person CCMS Advanced User training sessions across the state
- Update Basic and Advanced CCMS training modules

SHA: PERCENTAGE OF THE MARYLAND SHA NETWORK IN OVERALL PREFERRED MAINTENANCE CONDITION

The overall condition of the network reflects how well asset management strategies improved operations and technology have sustained the quality and safety of existing highways.



Why Did Performance Change?

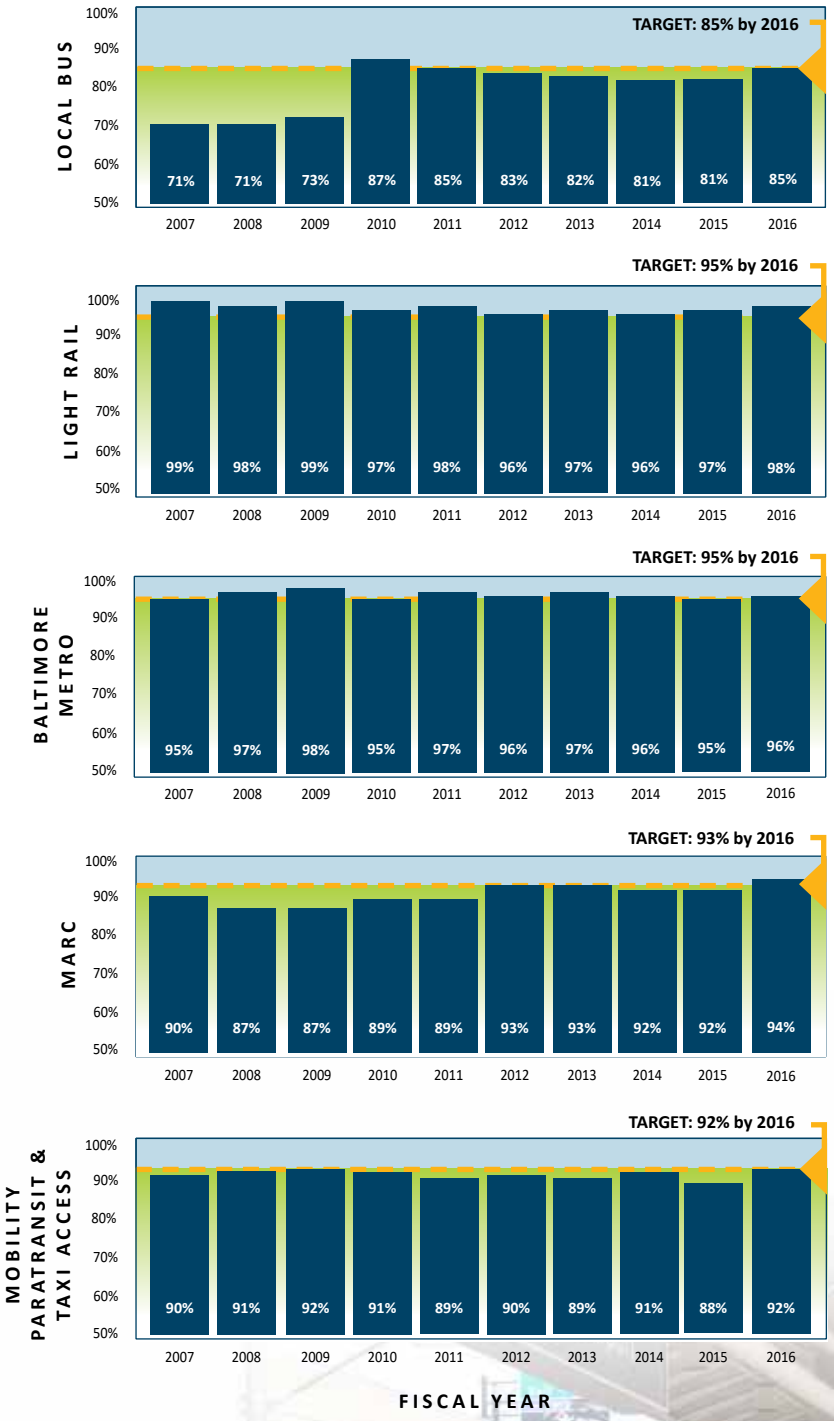
- The extreme weather over the past three winter seasons and the record snowfall from Winter Storm Jonas deteriorated assets, such as line striping, pavement markings, guardrail, and curbs that will require extra effort to restore to the desired maintenance condition
- Challenges in contract authority and severity of winter created challenges in spending full maintenance allocations
- Social media outreach promoting an online system for citizens to report issues to SHA resulted in an increase in the number of customer service requests. In FY 2015 and FY 2016, SHA addressed more than 26,000 requests each year, compared to 16,300 requests in FY 2010
- The increased time spent responding to and performing work on these requests so that SHA is responsive to our customers' service needs left less time for planned maintenance activities needed to maintain assets

What Are Future Performance Strategies?

- Focus additional work efforts on safety-related assets, such as signs, pavement marking, line striping, guardrail, and brush and trees while ensuring adequate contract resources that support these activities
- Collaborate with the finance, and procurement and contract management offices with having adequate contract authority within the maintenance program so additional work can be performed on assets falling below the desired maintenance condition
- Evaluate the efficiency and effectiveness of many of the maintenance programs and policies, including the line striping and guardrail repair policies, and the litter, vegetation management, and roadway lighting programs
- Implement alternative line striping technology pilots based on other states' best practices. SHA completed three pilots and is planning seven more

MTA: PERCENT OF SERVICE PROVIDED ON TIME

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



Why Did Performance Change?

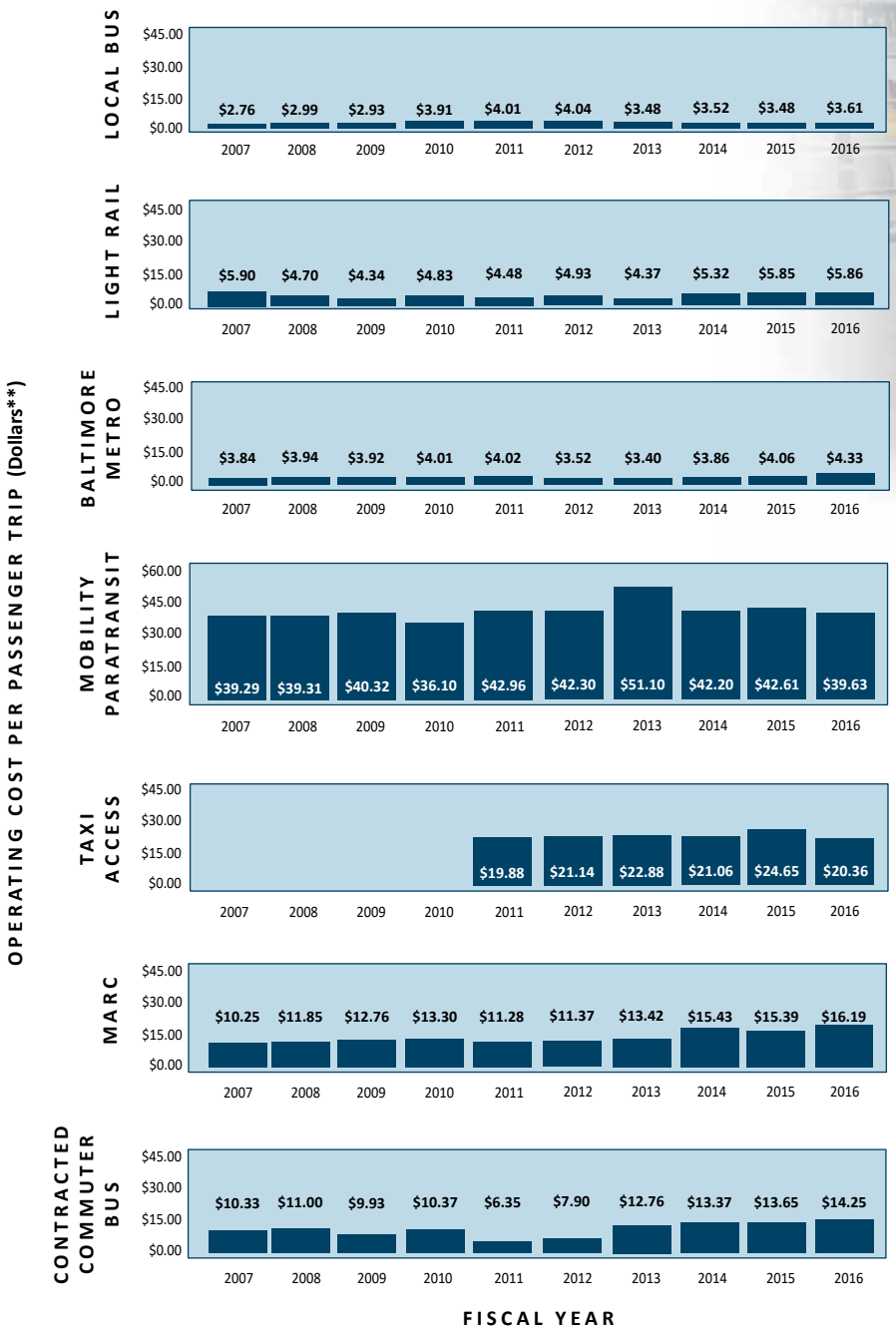
- All modes either improved or maintained OTP when comparing FY 2015 to FY 2016
- MTA efficiently and effectively deployed resources to deliver service on time by either improving or maintaining OTP for all modes
- Metro Rail conducted several periods of trackwork in FY 2015 and FY 2016 to improve quality and reliability of service

What Are Future Performance Strategies?

- Improve OTP with the BaltimoreLink initiative, which will redesign the local and express bus routes through Baltimore, transforming the connectivity of transit in the Baltimore Metropolitan region
- Target and resolve issues creating OTP challenges for the Local Bus system, using better data systems to find and troubleshoot performance issues
- Improve OTP through better schedule design and better operational supervision, using Automatic Vehicle Location (AVL) and Automatic Passenger Counter (APC) technologies
- Complete the Metrorail track work and signals replacement project thereby improving service reliability
- Continue with Light Rail vehicle mid-life overhaul project to increase fleet reliability
- Schedule Light Rail and Baltimore Metro Rail track maintenance activities during periods of low ridership, minimizing the effect of the work on riders
- Continue aggressive monitoring of MARC's contracted operations and pursue infrastructure and schedule improvements that will benefit MARC riders

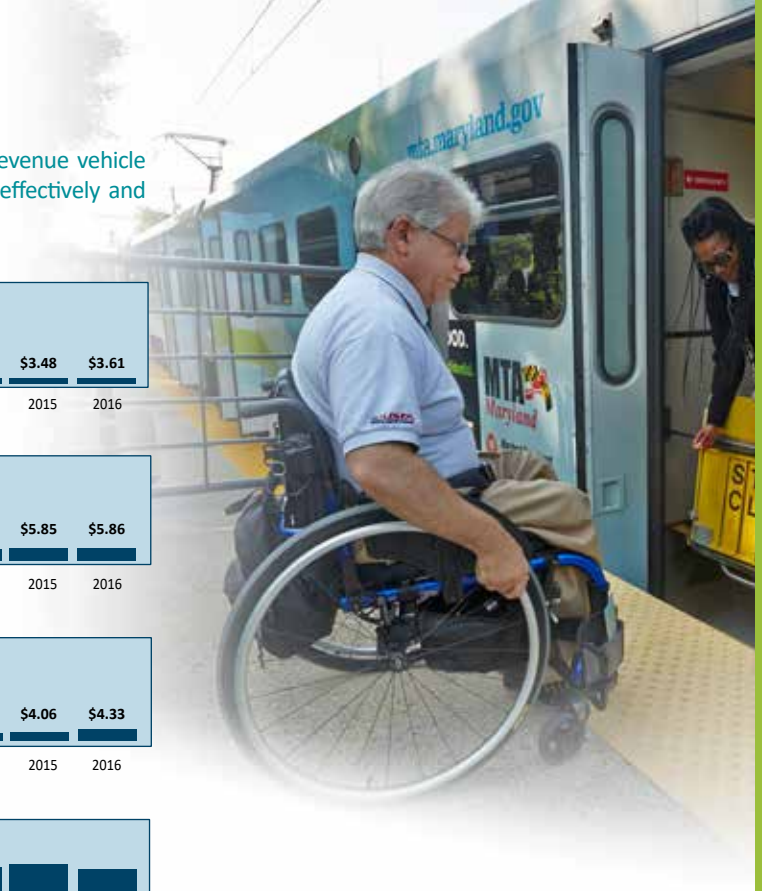
MTA: OPERATING COST PER PASSENGER TRIP

Together, the operating cost per passenger trip and operating cost per revenue vehicle mile are key industry performance measures that show MTA's ability to effectively and efficiently provide service to passengers on various modes of travel.



TARGET: Cost per passenger trip for Local Bus, Baltimore Metro and Light Rail to increase at a rate no higher than the Consumer Price Index (CPI)*

** The CPI provides information about price changes in the national economy.*
*** The cost data have been adjusted for inflation in past reports, they are not updated as shown presently.*



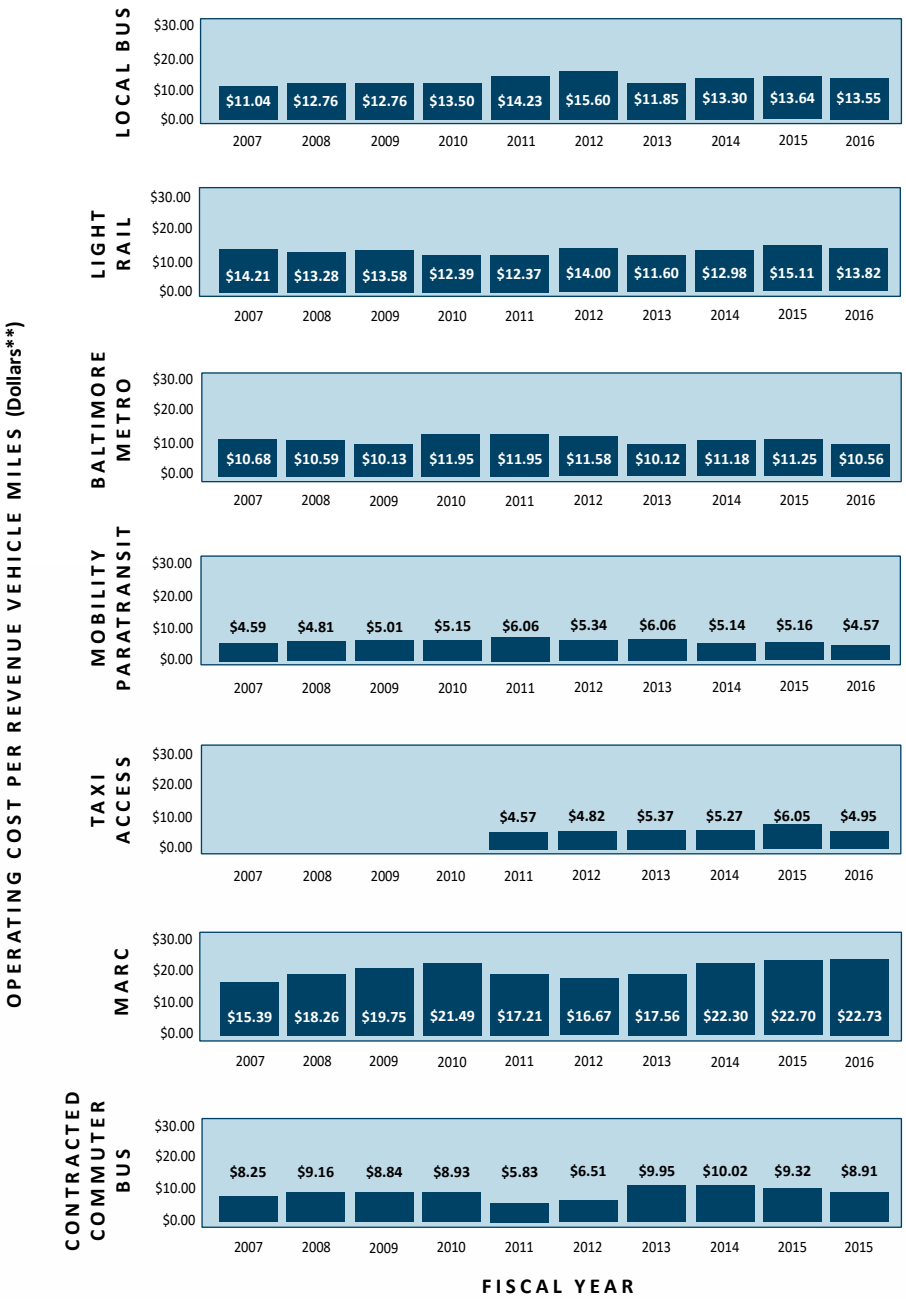
Why Did Performance Change?

- Cost per trip increased for all modes from FY 15 to FY 16, primarily due to renegotiated contracts, contract increases and general inflation
- Local Bus is still MTA's most efficient way to move passengers, with cost growth well in line or below historical trends
- While Metro's cost per trip this year was higher than last, the costs are still within historical trends given trackwork/single tracking which occurred throughout the fiscal year
- While MARC and Commuter Bus cost per trip increased this year, better contractual management have kept this cost growth minimized

What Are Future Performance Strategies?

- Improve the efficiency of MTA's transit system and increase capacity in high-demand areas through the BaltimoreLink initiative, designed to transform the connectivity of transit in the Baltimore Metropolitan region
- Continue efforts to control system costs while maintaining high levels of service quality
- Continue aggressive management and auditing of contracted service providers to ensure 100% accuracy in invoices and claims
- Provide maximum transit capacity in areas of highest demand potential in order to provide increased passenger trips while utilizing agency resources efficiently

MTA: OPERATING COST PER REVENUE VEHICLE MILE



TARGET: Cost per revenue vehicle mile for Local Bus, Baltimore Metro and Light Rail to increase at a rate no higher than the Consumer Price Index (CPI)*

** The CPI provides information about price changes in the national economy.*
*** The cost data have been adjusted for inflation in past reports, they are not updated as shown presently.*

Why Did Performance Change?

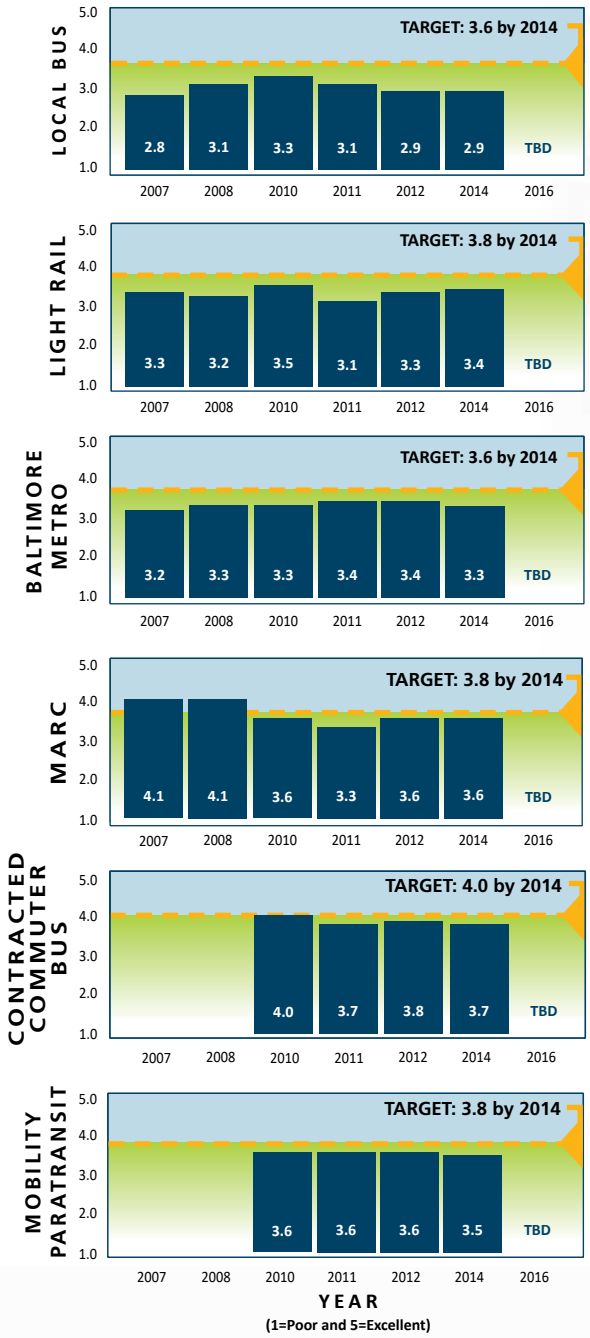
- Cost per trip increased for all modes from FY 2015 to FY 2016, primarily due to renegotiated contracts, contract increases and general inflation
- Light Rail and Contracted Commuter Bus decreased costs by 4% from FY 2015 to FY 2016
- Taxi Access had the highest increase of 14.2% from FY 2015 to FY 2016
- The remaining modes increased costs per revenue vehicle mile by 0% to 3%
- MTA was able to maintain operating cost per revenue vehicle mile in line with FY 2015 despite increasing contract costs and Winter Storm Jonas

What Are Future Performance Strategies?

- Improve efficiency and operating cost per revenue vehicle mile of MTA's transit system and increase capacity in high-demand areas through improved connectivity of transit in the Baltimore Metropolitan region by implementing the BaltimoreLink initiative
- Continue to improve the Local Bus network to maximize efficiency and connectivity to places of employment

MTA: CUSTOMER SATISFACTION RATING*

Reliable, safe and convenient service are key factors in attracting ridership. Customer satisfaction reflects whether MTA is meeting its customer service standards and signals which modes require improvement.



** No survey was completed in 2015. The 2016 survey results will be reported in the next Report.*

Why Did Performance Change?

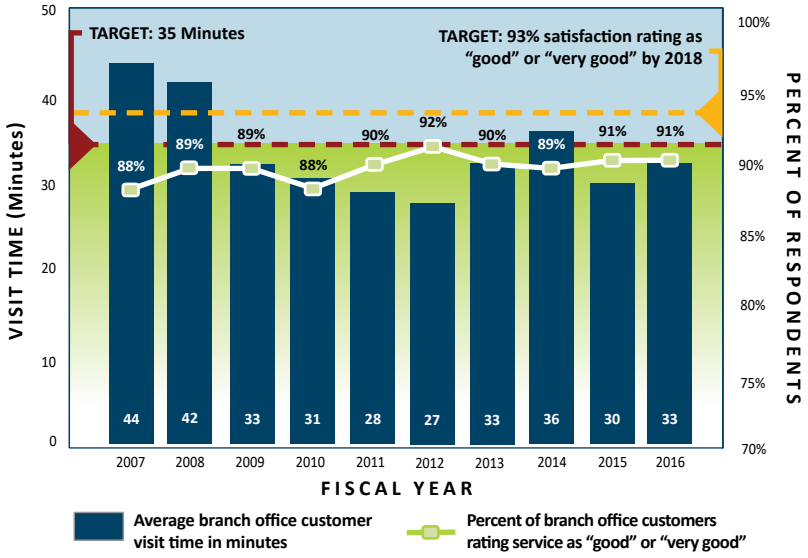
- 2016 survey results will be provided in the next Attainment Report. The latest overall satisfaction results rating remained comparatively steady from 3.2 in CY 2012 to 3.18 in CY 2014. However, there was an increase in the satisfaction rating for Light Rail and MARC. Local Bus, Metro, Commuter Bus and Mobility remained the same or decreased. Some variations were within the survey's margin of error, however MTA takes these decreases seriously and is examining additional ways to enhance customer satisfaction
- MTA replaced and enhanced signage in all rail stations to improve customer information

What Are Future Performance Strategies?

- Improve the efficiency and operating cost per revenue vehicle mile of MTA's transit system and increase capacity in high-demand areas through improved connectivity of transit in the Baltimore Metropolitan region by implementing the BaltimoreLink initiative
- Provide real-time customer information to help increase customers' access to next vehicle arrivals, service disruptions, diversions and other important transit information
- Complete the Metrorail track work and signals replacement project thereby improving service reliability
- Continue field observations (covert and overt) to identify and rectify performance issues

MVA: BRANCH OFFICE CUSTOMER VISIT TIME VERSUS CUSTOMER SATISFACTION RATING

Average customer visit time is a key indicator of the quality and efficiency of service delivery to customers and is directly related to customer satisfaction (i.e., as MVA branch customer visit time decreases, customer satisfaction increases).



Why Did Performance Change?

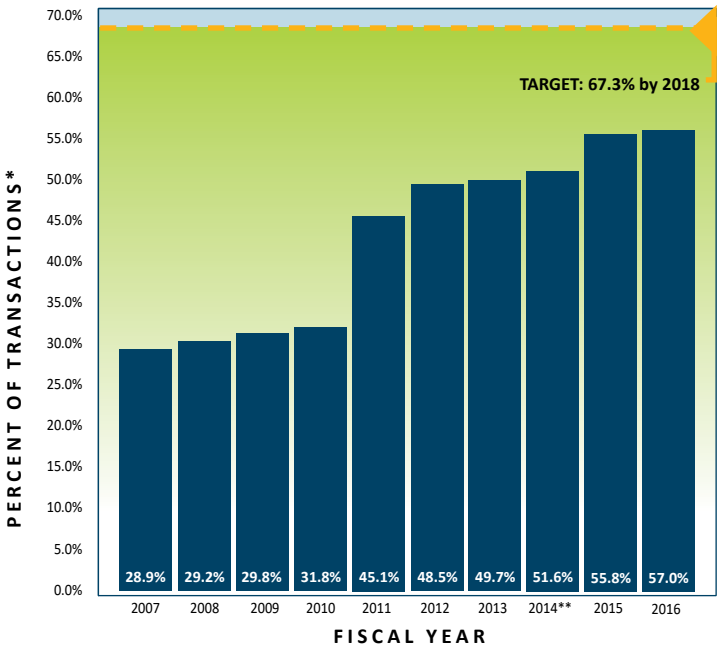
- Implementing policy and process enhancements to reduce wait time and the overall visit time for the customer, including improving the efficiency in processing transactions
- Many Alternative Service Delivery (ASD) enhancements have supported a reduction in visit time, which is also impacted by the cyclical expiration of MVA products, and impacts the overall number of customers that are serviced

What Are Future Performance Strategies?

- Plan, design and implement an enhanced technical platform that will allow for the full integration of core business services and processes, providing comprehensive account management services to more efficiently access MVA driver and vehicle services and products
- Pilot the use of hand-held devices to determine kiosk eligibility of customer transactions which will reduce customer overall visit time
- Administer process and system efficiencies for customer appointment scheduling, acceptance of mechanic's tests at all full service branches and expansion of the Commercial Drivers License (CDL) employer testing program
- Implement Service Enhancements of the Customer Service Plan to support customer interactions, such as additional languages added to the law test (Nepali), VEIP kiosks in Columbia, enhancements to customer appointment system, an expanded program that allows eligible students the opportunity to take the Maryland Learner's Permit test in the comfort and convenience of their high school, an expanded CDL employer testing program, and the ability to complete the majority of your driver's license application online.

MVA: ALTERNATIVE SERVICE DELIVERY TRANSACTIONS AS PERCENT OF TOTAL TRANSACTIONS

Alternative services offer the ability to provide fast and convenient service delivery to the MVA customer. These transactions do not involve a walk-in interaction and require development of new information technology systems and changes in customer behavior, which may be offset by new legislation and programs that require a walk-in transaction.



** The number of transactions includes the number of vehicles tested at VEIP stations, and excludes driver and vehicle Direct Access Records (DARS).*

*** 2014 data revised from previous Report.*

Why Did Performance Change?

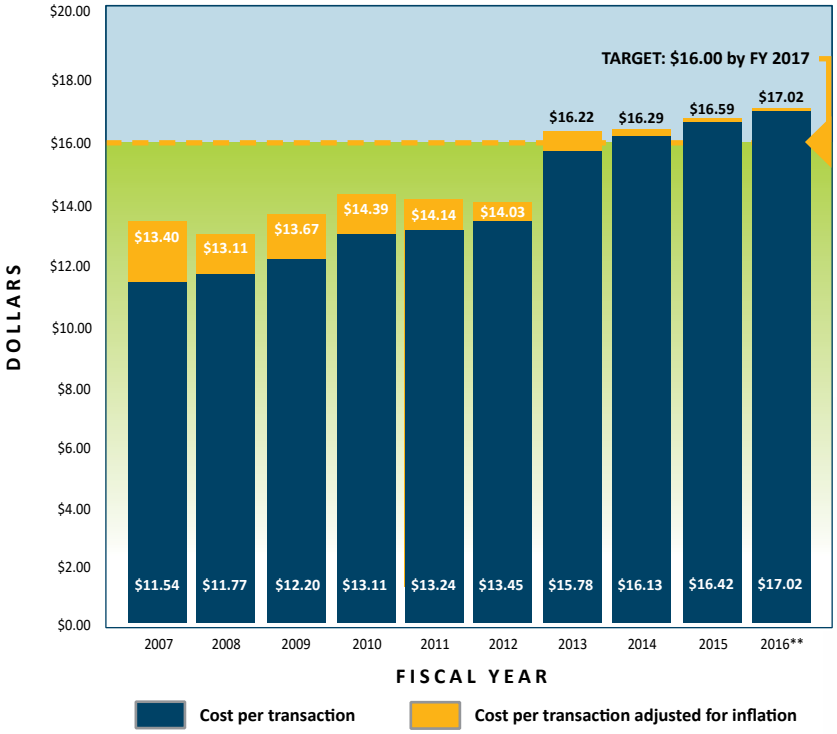
- Offered services that are more convenient, enhancements and policy changes to reduce the burden to customers. The MVA has been able to increase the ASD percentage over several years from 31.8% in FY 2010 to 57% in FY 2016
- Continued to promote ASD through media campaigns that explain the benefits and ease of use of services offered through ASD

What Are Future Performance Strategies?

- Continue to implement policies, technologies and strategies contained in the comprehensive MVA Customer Service Plan to offer optimal customer service by streamlining several services such as adding VEIP self-service kiosks and increasing the use of text and email for notifications
- Review the MVA website for additional design changes and implement several appointment options and pre-populated forms on the website
- Better communicate with customers about the ability to complete transactions online

MVA: COST PER TRANSACTION*

Cost per transaction is an indication of whether MVA business practices and programs are increasingly cost-effective through the employment of better technology and operational practices.



** Includes all transactions (e.g. licensing, registration, titling). Methodology has been revised and historical data has been updated from 2013 to reflect this changed methodology.*

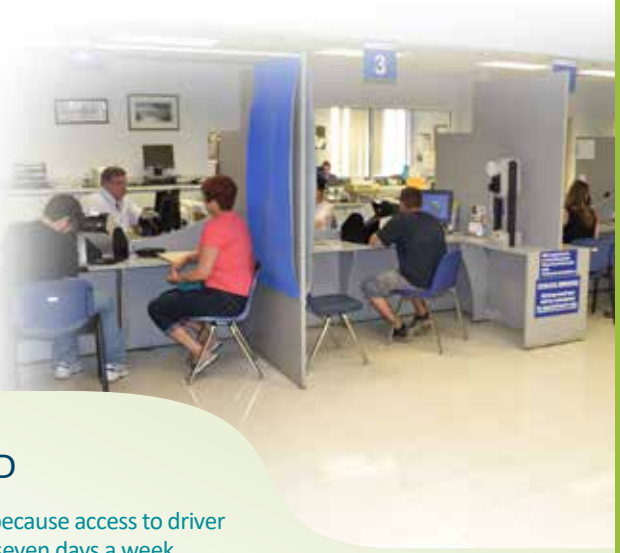
*** 2016 value is preliminary and subject to change.*

Why Did Performance Change?

- As part of continued safety and security of driver's license and ID cards in Maryland, MVA implemented full central issuance of Maryland's new secure driver's license and ID cards. The mailing of the new secure products from the secure central facility increased the cost of U.S. postage mailings
- The percentage of MVA transactions performed through methods other than the branch offices continues to increase leading to higher credit card and postage costs

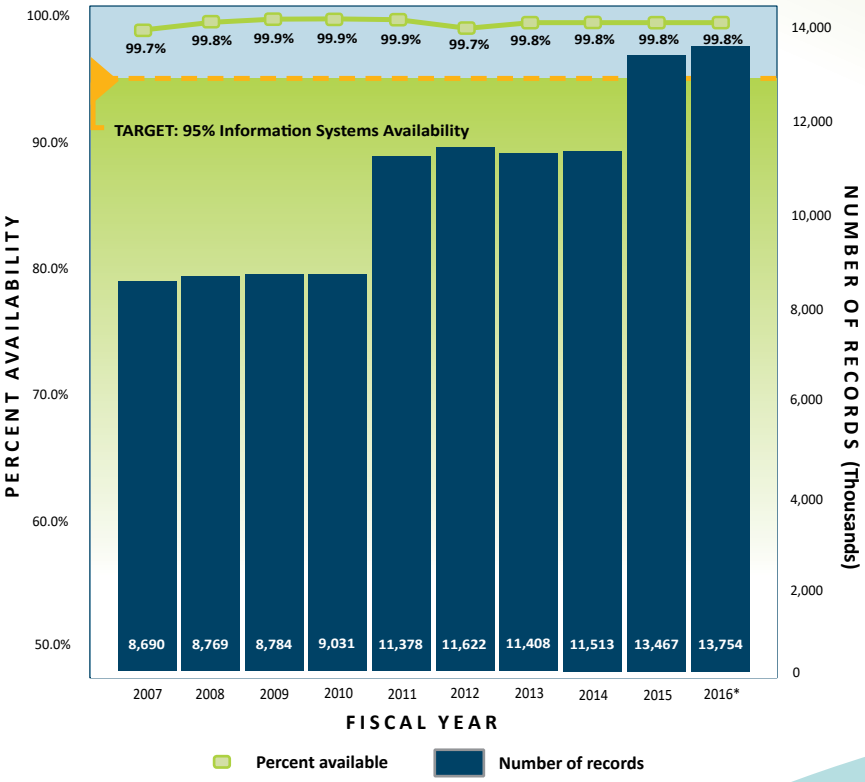
What Are Future Performance Strategies?

- Continue to invest in the modernization of IT systems at MVA which will support convenient and efficient customer transactions
- Continue to implement efficiencies in business practices



MVA: PERCENT OF INFORMATION SYSTEM AVAILABILITY COMPARED TO TOTAL NUMBER OF RECORDS MAINTAINED

This measures progress in maintaining the availability, integrity and security of MVA data because access to driver and vehicle data is critical to law enforcement and government agencies, 24 hours a day, seven days a week.



** 2016 value is preliminary and subject to change.*

Why Did Performance Change?

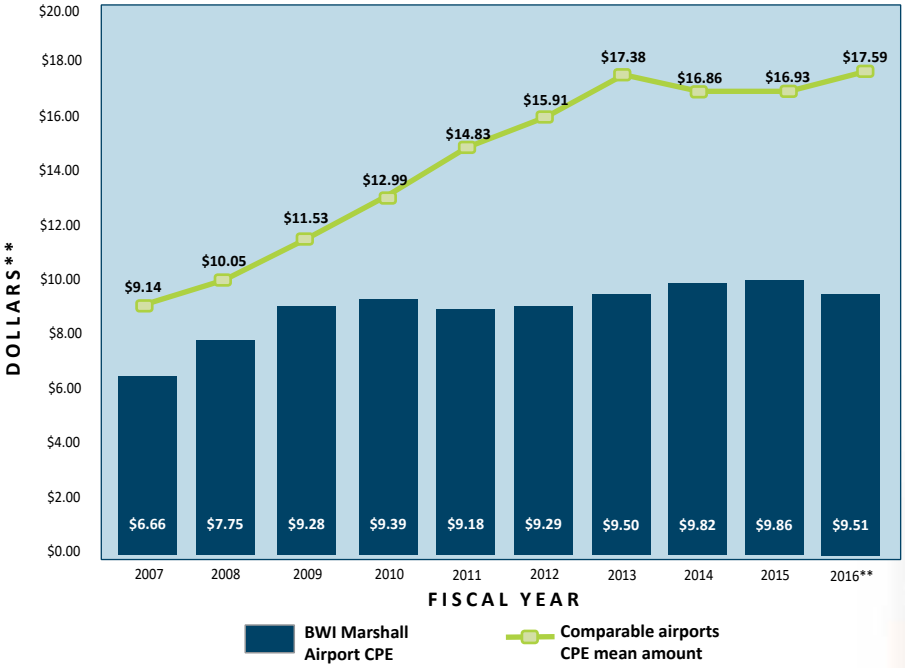
- MVA recognizes the importance of the safety and security of mainframe data and has taken steps to ensure that this information remains secure
- The roll out of the new Secure MD ID was an integral part in the development of the security of products and service

What Are Future Performance Strategies?

- Continue to provide data for Law Enforcement, Child Support Enforcement, Arrest Warrants, Courts Point System, Tax Compliance, Board of Elections, Organ Donor, Chesapeake Bay and Agriculture Programs
- Continue being a good partner and provide the best service to all customers

MAA: AIRLINE COST PER ENPLANED PASSENGER (CPE)

Airline cost and non-airline revenue measures allow BWI Marshall Airport to remain competitive in a region that is unique because it has four proximate airports.



TARGET: BWI Marshall Airport CPE below the mean CPE of comparable airports*

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

*** The cost data have been adjusted for inflation in past reports, they are not updated as shown presently.*

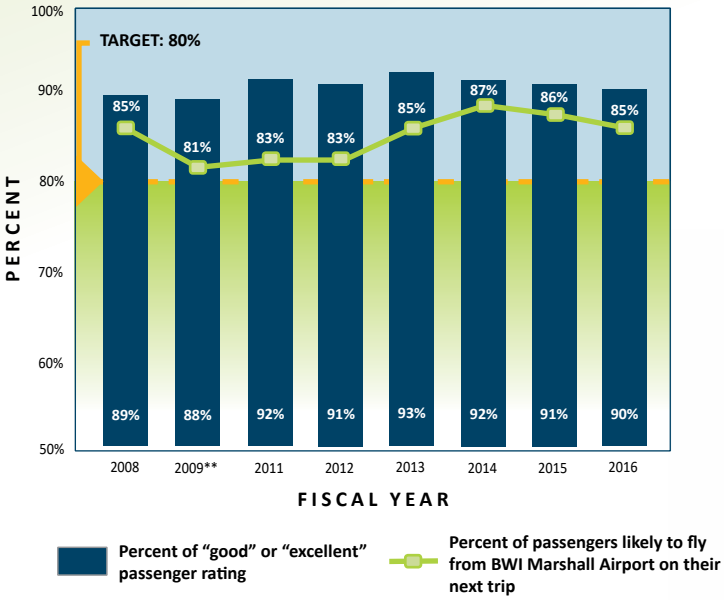
Why Did Performance Change?

- The CPE at BWI Marshall Airport continues to be the lowest in the mid-Atlantic region and well below the average of comparable airports
- Passenger growth at BWI Marshall Airport during FY 2016 was higher than cost growth, which lead to a lower than forecast CPE for the time period

What Are Future Performance Strategies?

- Review the cost effectiveness of capital projects before moving forward with design and construction
- Closely monitor all airport costs in order to keep BWI Marshall Airport rates competitive with other regional airports

MAA: PERCENT OF BWI MARSHALL AIRPORT CUSTOMERS RATING THE AIRPORT "GOOD" OR "EXCELLENT" ON KEY SERVICES*



** Surveys not administered in 2007 and 2010.*

*** The 2009 rating only reflects first quarter 2009 data, not the full fiscal year.*

Why Did Performance Change?

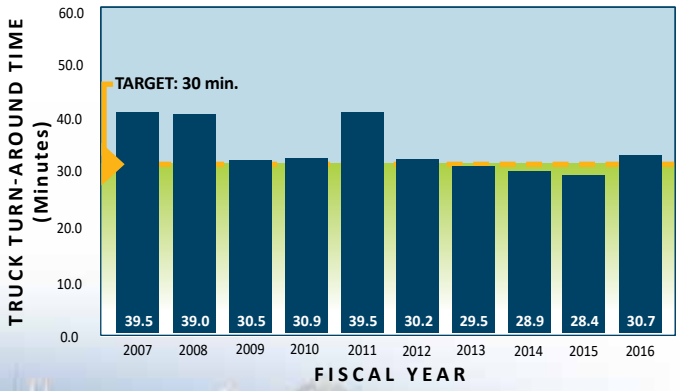
- BWI Marshall Airport continues exceeding its customer satisfaction goals

What Are Future Performance Strategies?

- Manage the BWI Marshall Airport cleaning contracts to ensure that the cleanliness of the terminal building, restrooms, etc. meet the expectations of passengers at BWI Marshall Airport
- Enhance the food/beverage and retail options at BWI Marshall Airport
- Develop parking strategies to enhance the customer experience

MPA: AVERAGE TRUCK TURN-AROUND TIME AT SEAGIRT MARINE TERMINAL

Truck turn-around time is a gross measure of the efficiency and operations of the Seagirt Marine Terminal. Reductions in turn-around times improve throughput capacity and result in incremental environmental benefits.



Why Did Performance Change?

- Enhanced the terminal operating system (IT) to handle larger volumes and minimize any down time
- Four additional Rubber-Tired Gantry (RTG's) in the yard improved handling times for import loads to truckers
- Improved terminal layout and expanded container storage areas
- Made improvements to truck drive lanes to improve safety and efficiency and increased inbound truck gate lanes from eight to 13
- Increased usage of website by truckers/ Beneficial Cargo Owners (BCO's) for release information reduced time in customer service
- Improved planning in order to maintain adequate staffing levels on heavy days

What Are Future Performance Strategies?

- Continue the Quality Cargo Handling Team (Q-CHAT) to further improve containerized cargo handling
- Evaluate business processes to ensure gate and terminal processes are not adversely impacted by existing and proposed commercial improvements
- Technology (RFID and weigh-in-motion) should be in place in CY 2016

MDTA: OVERALL CUSTOMER SATISFACTION OF *E-ZPASS* CUSTOMERS

This measure tracks the satisfaction of *E-ZPass* private account holders.

FISCAL YEAR*	2007	2010	2013
Percent Satisfied	87%	86%	86%

TARGET: 80% or higher

** Surveys were not conducted in FY 2012 due to demands on time and staffing constraints.*

Why Did Performance Change?

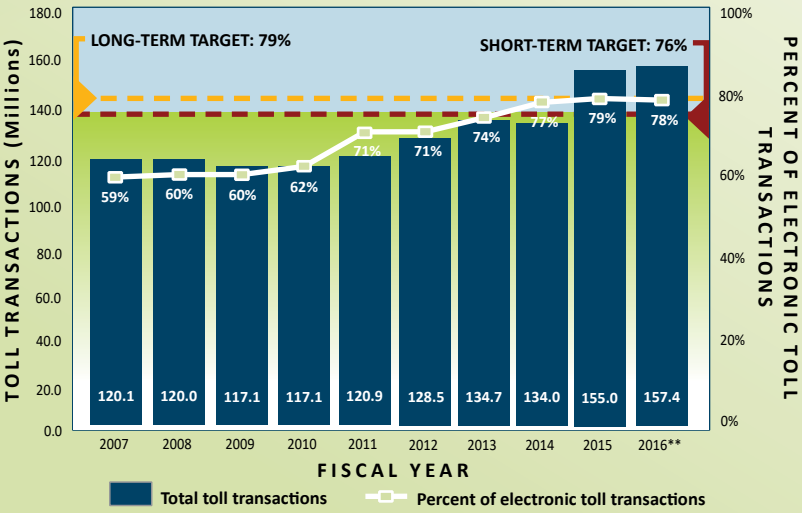
- Completed market research for the re-design of the *E-ZPass* website
- Developed innovative ways to market *E-ZPass* and all-electronic toll roads within fiscal constraint

What Are Future Performance Strategies?

- Undertake new research methodology to help gauge customer satisfaction
- Respond to customer suggestions for improvements, as fiscally possible
- Build on social media platforms and respond to customer comments/ concerns expeditiously
- Redesign *E-ZPass* website for ease of use for customers and develop innovative ways to market *E-ZPass* and all-electronic toll roads within fiscal constraints

MDTA: PERCENT OF TOLL TRANSACTIONS COLLECTED ELECTRONICALLY*

Electronic toll collection (ETC) systems expedite the toll collection process, reduce delays at toll plazas, decrease emissions and are available at all eight toll facilities across the state.



** Toll collections are paid as cash, ticket or electronic transaction. ETC includes Transponder, I-tolls and Video Tolls.*

*** 2016 value is preliminary and subject to change.*

Why Did Performance Change?

- *E-ZPass* transactions dramatically increased in volume by 12% and total transactions increased by 1.4% between FY 2015 and FY 2016. The number of *E-ZPass* accounts increased significantly (13%) due to a 10% increase in total traffic and a public outreach campaign to encourage use of *E-ZPass*
- Toll decreases and the new I-95 ETLs had a strong impact on transaction volume increase

What Are Future Performance Strategies?

- Manage the Citation system through MVA and Central Collection Unit to encourage the use of *E-ZPass* transponders
- Complete studies to facilitate the movement to All Electronic Tolls (AET) for Francis Scott Key (FSK) and the Thomas J. Hatem (TJH) bridges

GOAL Environmental Stewardship

Ensure that the delivery of the State's transportation infrastructure program conserves and enhances Maryland's natural, historic and cultural resources

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Limit the impacts of transportation on Maryland's natural environment through impact avoidance, minimization and mitigation
- Employ resource protection and conservation practices in project development, construction, operations and maintenance of transportation assets
- Implement transportation initiatives to mitigate the impacts of climate change and improve air quality
- Support broader efforts to improve the health of the Chesapeake Bay, protect wildlife, conserve energy and address the impacts of climate change

Through leadership and guidance in the areas of environmental compliance, stewardship and sustainability, MDOT has a proven record of being a national leader in both long-range environmental planning and policy programs and day-to-day operations.

MDOT efficiently uses limited resources, while minimizing environmental impacts through the use of innovative and forward-looking strategies to ensure Maryland's transportation system protects natural, cultural and community resources. Maryland's Green Infrastructure Plan and Chesapeake Bay Restoration priorities provide a guiding framework, informing how MDOT agencies minimize impacts and utilize mitigation to support the State's conservation goals. MDOT's protection of natural lands occurs through land use, transportation and resource planning coordination with agency and local government partners including consideration of the long-term impacts of transportation system investments on land development and preservation. Bay protection and restoration is multifaceted, including: retrofitting older parts of the transportation network with the latest stormwater management technology; restoring natural filters through stream restoration, forest establishment and wetland creation; and adopting protective operational practices that will move the State closer to meeting mandated water quality targets.

MDOT is also working to reduce transportation emissions into the air and manage energy consumption related to transportation. Over the last decade, Maryland has made substantial progress in combating air pollution and greenhouse gas (GHG) emissions – this progress originated from a diverse and innovative approach. The approach has relied on MDOT's continued support and expansion of Travel Demand Management (TDM) programs, including Commuter Choice Maryland and Commuter Connections, to provide incentives to commuters for carpooling and using transit. SHA, MTA and MDTA all have continued to advance strategies to increase the efficiencies of their fleets, including purchasing natural gas and clean technologies vehicles. Additionally, MTA has installed 45 electric vehicle-charging stations at 19 park-and-ride locations. MDOT also continues to chair the Maryland Electric Vehicle Council (EVIC). EVIC continues to develop policies and secure funding to promote the successful integration of electric vehicles into Maryland's communities and transportation system.

KEY INITIATIVES AND CTP PROJECTS

TSO: In 2016, TSO released two reports documenting specific strategies, policies and projects that are continuing to help Maryland meet Clean Air Act requirements and reduce GHG emissions. The 2015 Greenhouse Gas Reduction Plan provides specifics regarding MDOT's actions since passage of the Greenhouse Gas Reduction Act in 2008 and ongoing strategies to help Maryland reduce GHG emissions by 40% per the 2030 goal. The 2016 Strategy for Air Quality and GHG Emission Goals highlights MDOT's progress in reducing mobile source criteria air pollutants, moving the entire state toward attaining all National Ambient Air Quality Standards (NAAQS) and sustaining emission reductions that will help meet long-term air quality goals, while also enhancing Maryland's economy and quality of life.

MAA: In the FY 2017-FY 2022 CTP, MAA set aside $16 million to purchase 20 new clean diesel, 60-foot articulated buses to replace the aging shuttle bus fleet at the Consolidated Rental Car Facility. The new buses will help maintain service levels, increase dispatch reliability and further mitigate particulate matter emissions from bus operations.

MDTA: MDTA continues to maintain a comprehensive inventory of its stormwater Best Management Practices (BMPs) and drainage systems and leverages geographic information services as a visualization and analysis tool of this data. A key aspect of the program is to train personnel in pollution prevention, particularly at maintenance facilities.

Electronic Tolling – In the FY 2017-FY 2022 CTP, MDTA has committed over $65 million to replace its electronic toll collection system. The Next Generation system will substantially increase the capacity for handling Video Tolling and citations, enabling MDTA to reduce traffic delays and emission hot spots over time, at toll plazas by transitioning to all electronic tolling.

Environmental Management – MDTA continues to maintain an active environmental management program.

MPA: In 2016, MPA, MDOT and MDE entered into an agreement to work collaboratively to identify, develop and, when appropriate, implement new cost-effective, voluntary programs that will reduce emissions and increase energy efficiency. Achievements of the workgroup to date include identifying emission sources related to port activities; updating and prioritizing a list of activities, technologies, equipment, practices and projects that could potentially improve air quality and/or conserve energy; preparing a master list of possible funding sources to support these projects; and applying for grants to fund these projects.

MPA will continue to implement its Environmental Strategic Plan, including taking steps to reduce emissions, implement alternative power sources, conserve energy, manage stormwater and reduce Total Maximum Daily Load (TMDL).

MPA is continuing to manage the Dray Truck Replacement Program (Dray Trucks are designed to haul shipping containers) in partnership with MDE. As of June 2016, the program has replaced 151 dray trucks operating at the Port of Baltimore with new trucks that exceed all current Environmental Protection Agency (EPA) heavy-duty engine standards.

KEY INITIATIVES AND CTP PROJECTS (CONTINUED)

MPA: MPA continues to implement strategies supporting stewardship of the Chesapeake Bay through funding and implementing projects consistent with the Water Quality Management Plan.

MPA, represented by Kathy Broadwater, Deputy Executive Director, participated in the EPA's National Ports Initiative Workgroup of the Mobile Sources Technical Review Subcommittee, which makes recommendations to EPA for opportunities/strategies to reduce air pollution and GHG, to achieve environmental sustainability for ports, and improve air quality for near-port communities.

MTA: MTA manages the Commuter Choice Maryland program, which provides incentives encouraging Maryland employees to choose transit or vanpools instead of driving to work. Commuter Choice offers employers monthly pass distribution options, allowing employees to ride MTA, Local Bus, Commuter Bus, Light Rail, Metro Subway and MARC Train for less than full fare. The program offers significant savings for commuters and a valuable addition to employer benefit packages.

Commuting by public transportation, rather than driving alone, allows an individual to reduce annual CO2 emissions by an estimated 4,800 pounds per year. The BaltimoreLink project is a $135 million investment to streamline existing bus and rail modes in the Baltimore area into a unified, interconnected transit system to improve access to jobs and the broader regional transportation network. The project will provide access to 130,000 more jobs than are accessible via the current network and increase the service area by 18 square miles, which will increase the number of people with access to transit by more than 30,000. This project represents a cost-efficient, flexible and sustainable approach to enhancing access to reliable transit throughout Baltimore.

MVA: MVA continues to work with MDE to ensure compliance with State emissions regulations and continues to monitor the number of registered vehicles in non-attainment counties to ensure VEIP testing compliance. Currently there are nine VEIP kiosks locations, four at VEIP Stations and five at branch offices. The original two kiosks launched in August 2015 have performed more than 2,300 VEIP tests and have a customer satisfaction rating of 85% to 90%. MDE and MVA continue to look at new technologies for testing such as mobile units, telematics and remote testing for future enhancements to VEIP, ensuring maximum customer satisfaction, lower wait times and air quality benefits.

MVA increasingly offers services electronically, which are available online 24 hours a day, 7 days a week. Customers may also conduct many transactions using self-service kiosks and automated interactive voice response telephone systems. These services reduce the need for a trip to an MVA office.

SHA: SHA recently deployed the Chesapeake Bay Restoration Viewer, which provides Maryland residents an online-map with access to information on completed and proposed projects SHA is implementing to improve water quality in the Chesapeake Bay. These projects are BMPs that reduce pollutants in stormwater runoff and are anticipated to reduce annual pollutant loading and offset impacts of runoff by as much as 75% by 2020. SHA implements various projects to help achieve these goals, including tree planting, stream restoration, stormwater control structures, outfall stabilization and pavement removal. SHA exceeded its interim FY 2016 goal of 9% by treating 10% of MDOT's impervious surface not previously treated by stormwater management controls.

The SHA Climate Change Program developed the "Climate Change Adaptation Plan with Detailed Vulnerability Assessment" in October 2014 with a grant from the Federal Highway Administration (FHWA). The pilot report studied Anne Arundel and Somerset Counties and includes use of FHWA's Vulnerability Assessment Scoring Tool (VAST) and the creation of the Hazard Vulnerability Index (HVI). SHA is developing a checklist for project managers to screen projects in the inundation zones for sea level rise and will complete it when Coast Smart Guidelines (with checklist) are finalized.

SHA continues to incorporate the use of reclaimed and recycled construction materials into highway construction projects. SHA used 233,429 tons of reclaimed asphalt pavement and 8,498 tons of reclaimed aggregate in highway construction projects in CY 2015, the most recent year in which data is available.

MDOT was represented by Ms. Sonal Ram, P. E., Director, Office of Environmental Design, at the Transportation Leaders' Summit on Restoring the Nation's Pollinator Habitat, as a means for state DOTs to share BMPs employed across the nation to create a federal strategy to promote the health of pollinators.

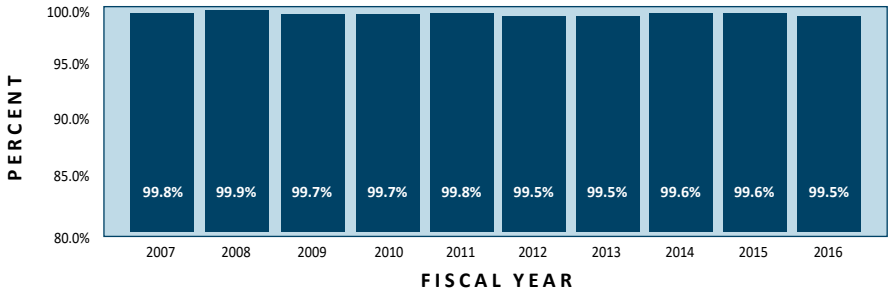
MARYLAND AVIATION ADMINISTRATION

MAA promotes the stewardship of Maryland's environment while keeping its people and economy moving. Approaches include recycling, energy efficiency, natural resource protection, community enhancement and alternative energy initiatives.

- **Recycle:** In 2016, MAA designated April 20 as "Recycle Day" in order to encourage tenant participation in Baltimore/Washington International Thurgood Marshall Airport's (BWI Marshall Airport) recycling program.
- **Energy Efficiency:** Continue to support a comprehensive Energy Efficiency Program at BWI Marshall Airport, including the implementation of the following measures to promote energy efficiency at the airport:
  - Energy efficient lighting and solar photovoltaic system
  - Domestic water conservation
  - Optimization of the energy management control system, heating system, and chiller plant
  - High efficiency summer boiler installation and chiller replacement
  - Escalator energy management control
- **Environmental Protection:** As the landlord for the more than 3,200 acres that comprise BWI Marshall Airport, MAA is also the steward of the many natural resources on its property.
- **Community Protection:** MAA continues to improve the residential areas surrounding BWI Marshall Airport. Through programs such as the Homeowner Assistance Program, MAA implements noise mitigation strategies for those residing within the BWI Marshall Airport Noise Zone.
- **Alternative Energy:** To reduce the amount of and cost of energy used at BWI Marshall Airport, MAA installed a 505 KW Solar Plant at the airport that has generated over 1,316,049 KWH of Solar Energy since 2011. Solar Energy produced at BWI Marshall Airport is equivalent to CO2 absorbed by planting 5,194 trees or CO2 emitted by driving 761,721 miles.

SHA: PERCENT OF COMPLIANCE ON EROSION & SEDIMENT CONTROL (ESC) RATINGS

State and federal regulations mandate erosion and sediment control (ESC) during construction of any land disturbing activity. ESC is a system of structural and vegetative measures that minimize soil erosion and off-site sedimentation from construction and roadway runoff. At any given time, SHA has many construction and maintenance activities that cause earth disturbance and require ESC. MDE has delegated inspection authority with oversight to SHA with specific parameters to be observed and rated. The results of the individual project inspection rating indicate compliance or non-compliance with the ESC requirements and the law.



TARGET: 100% Annually

Why Did Performance Change?

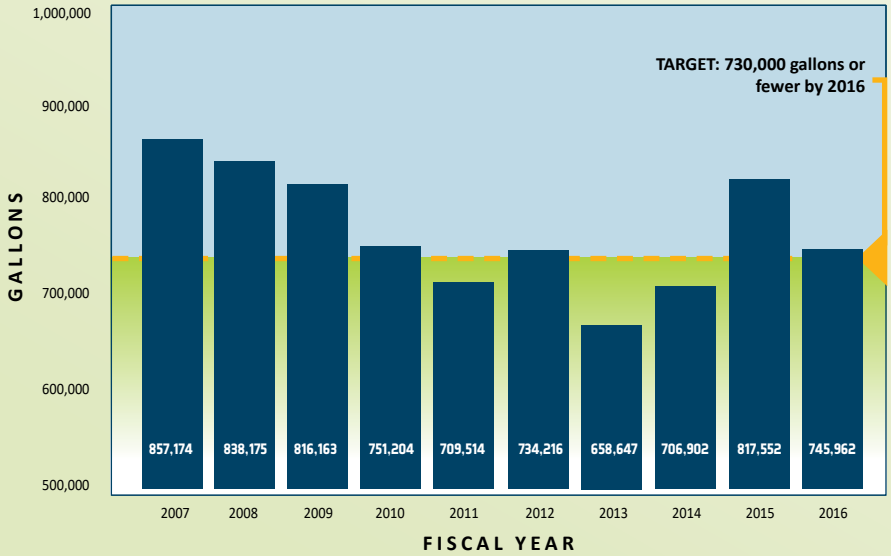
- Performed over 3,500 erosion and sediment control inspections with only 17 non-compliance findings documented by SHA's Quality Assurance Team in FY 2016
- Overall annual erosion and sediment control percentage of compliance in FY 2016 was 99.5%
- SHA has achieved 99.5% ESC rating compliance since FY 2006

What Are Future Performance Strategies?

- Include incentives/liquidated damages to ensure compliance statewide using the Quality Assurance rating system
- SHA received approval from MDE for stormwater management and ESC plan review and permitting authority. This significant change allows SHA to approve ESC field changes during construction, reduces project delays and costs, ensures desired environmental outcomes, and improves customer service to all stakeholders
- Continue to deliver ESC training and certification programs for contractors, inspectors and designers

SHA: TOTAL FUEL USAGE OF THE LIGHT FLEET

This measure is tracked statewide to monitor success in reducing consumption of gasoline through conservation strategies, including use of higher fuel efficiency vehicles for scheduled fleet replacements.



Why Did Performance Change?

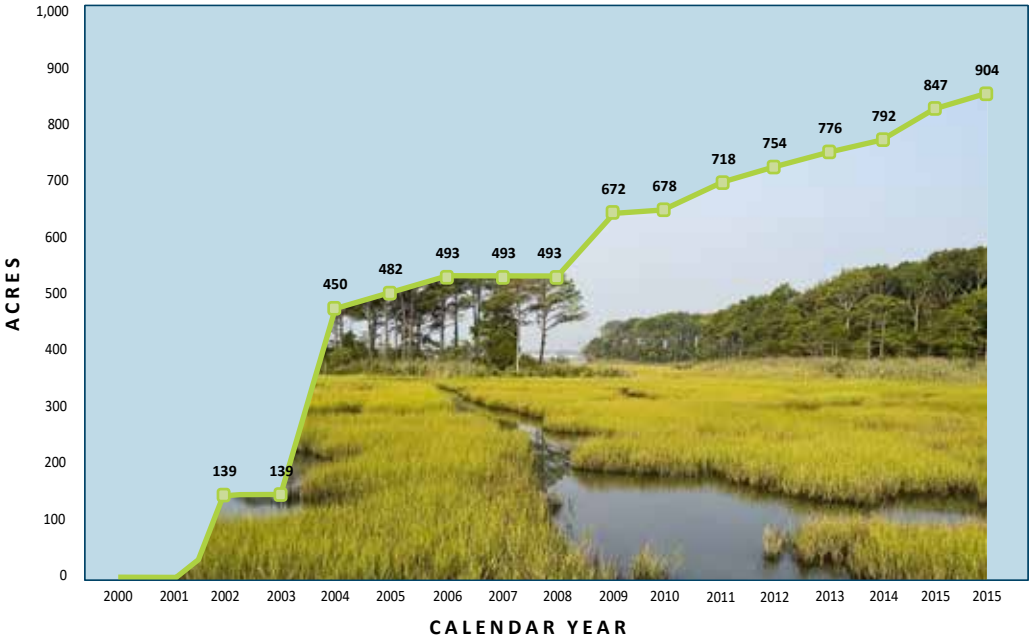
- Enforced the automobile engine-idling policy for all employees and consultants, and encouraged employees to save fuel through carpooling and videoconferencing for state business trips
- Conducted employee outreach to encourage use of the existing E-85 distribution facility at the SHA Hanover Complex and planned for E-85 fueling stations at Maryland State Police (MSP) facilities
- Increased fuel usage due to the capital construction program leading to construction projects and more activity with light fleet vehicles, weather event call outs, replacement of outgoing diesel trucks with gasoline trucks, and state vehicle fleet management policy which requires that State vehicles accumulate at least 10,000 business miles annually
- Since SHA has structured its fleet to maximize efficiency levels, SHA has reached a plateau in use reduction and fuel efficiency

What Are Future Performance Strategies?

- Look for opportunities to institute fleet reductions to cut overall fuel consumption
- Replace older diesel pickup trucks with flex-fueled pickup trucks of similar hauling and towing capacity

MPA: ACRES OF WETLANDS OR WILDLIFE HABITAT CREATED, RESTORED OR IMPROVED SINCE 2000*

MPA is in compliance with the various permits that are granted to construct projects needed for MPA customers (e.g., landside tenants or steamship lines).



TARGET: Mitigate projects as required by federal, state and local statutes

** Represents cumulative mitigation efforts by MPA since 2000. All reported data has been revised from the previous report.*

Why Did Performance Change?

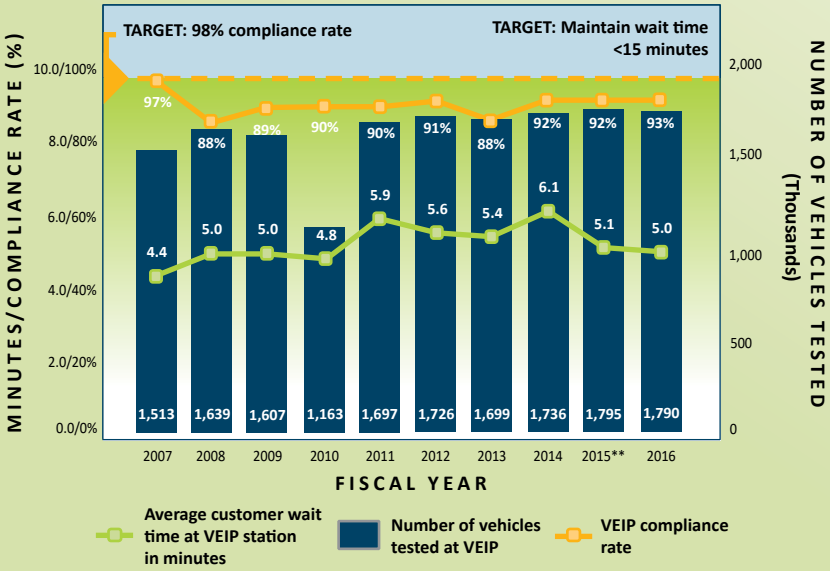
- Created and improved wildlife habitat wherever appropriate when required to mitigate for a construction project, and in conformance with permit requirements
- Planted wetland Cell 3C with appropriate vegetation at Poplar Island to continue with environmental enhancements
- MPA has received two awards for its collaboration with the Waterfront Partnership of Baltimore to install the Jones Falls trash interceptor waterwheel, providing $500,000 toward its construction

What Are Future Performance Strategies?

- When required to mitigate for a construction project, MPA will seek to create and improve wildlife habitat in conformance with permit requirements; long term efforts include Hart-Miller Island North Cell restoration, Masonville's eastern uplands and Poplar Island Expansion
- MDE, MDOT and MPA will continue to work together and promote a routine and productive dialogue among the agencies and stakeholders; future activities will include community port tours, technology workshops, engagement in preservation activities and MPA will advise the port community of grant opportunities

MVA: COMPLIANCE RATE AND NUMBER OF VEHICLES TESTED FOR VEHICLE EMISSIONS INSPECTION PROGRAM (VEIP) VERSUS CUSTOMER WAIT TIME*

Monitoring the VEIP testing compliance rate ensures system effectiveness and identifies vehicles exceeding allowable standards. Tracking the average wait time at VEIP stations ensures that the 15-minute average wait time requirement is met. Timely and efficient customer service helps the State meet federal clean air standards by identifying polluting vehicles and encouraging regular vehicle maintenance.



** 14 counties offer VEIP tests: Anne Arundel, Baltimore, Baltimore City, Carroll, Harford, Howard, Queen Anne's, Cecil, Washington, Calvert, Charles, Frederick, Montgomery and Prince George's.*

*** 2015 data revised from previous Attainment Report.*

Why Did Performance Change?

- Implemented additional self-service VEIP kiosks that allow customers to complete VEIP testing at their convenience while providing a cost savings of $4 for using the self-service VEIP kiosks
- VEIP self-service kiosks are available 24/7 in a total of nine locations for the customer's convenience, four at VEIP Stations and five at branch offices
- The slight decrease in FY 2016 wait time is attributed to the implementation of email notifications of VEIP renewal which are sent 11 weeks in advance of VEIP expiration, reducing the rush of customers at the end of the month, thus reducing wait time

What Are Future Performance Strategies?

- Track and monitor the recently installed vehicle emissions self-service testing kiosks, research where more could be warranted and actively research new technologies and services to facilitate vehicle emissions testing
- In partnership with the MD Department of the Environment, continue to develop strategies, policies, and regulations to ensure compliance with state emissions testing mandates
- Progressively monitor registered vehicles in eligible (non-attainment) counties to ensure testing compliance
- Continue to monitor wait times and implement process/procedure changes where necessary to maintain current wait time levels
- Plan, design and implement an enhanced technical platform allowing for the full integration of core business services and processes

TRAVEL DEMAND MANAGEMENT (TDM)

Travel Demand Management (TDM) offsets vehicle congestion by offering incentives for Marylanders to use public transit, carpool, walk or bicycle instead of driving alone. Other ways that roadway demand can be reduced is the promotion of telecommuting and flexible work hours as a way to reduce or shift trips to times when roadway capacity is less constrained. TDM initiatives also contribute to reduced emissions and improved air quality by cutting down on single-occupant vehicle trips and reducing peak period congestion.

MTA/SHA: REDUCTION IN VEHICLE MILES TRAVELED (VMT) THROUGH PARK-AND-RIDE USAGE

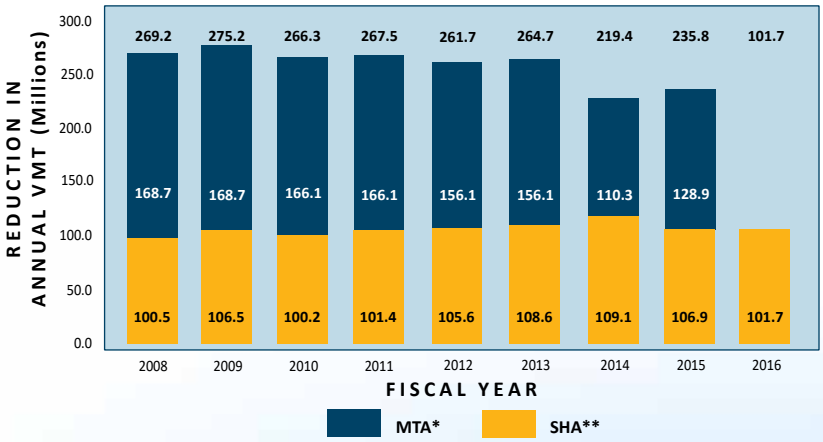
By offering park-and-ride facilities, SHA and MTA provide commuters with an alternative to driving to their destinations and supports increased carpooling and public transit ridership.

AGENCY	TOTAL SPACES	AVERAGE WEEKDAY UTILIZATION*
SHA (2016) (Estimated)	13,500 ***	7,346 ***
MTA (2015)	24,286	15,300
Transit Multipurpose**	17,858	11,608
Total	55,644	34,254

** Facility usage fluctuates due to the economy; weather conditions; special events; emergencies; delays or shutdowns of parallel lines or modes; maintenance and repair; storage of plowed snow; increases in frequency, service and capacity; and other factors.*

*** Includes facilities operated by MTA, Amtrak, WMATA, Penn Station in Baltimore and Union Station in Washington, D.C.*

**** Data is preliminary.*



** MTA park-and-ride lot VMT reductions are estimated based on the same assumptions used to calculate VMT reductions associated with MTA Transportation Emission Reduction Measures.*

***SHA 2008 to 2015 Actual data revised from previous Attainment Report.*

Why Did Performance Change?

- Low fuel prices may have affected ridership and average capacity at SHA park-and-ride lots in addition to the total number of spaces increasing
- SHA statewide park-and-ride lots were at 53% capacity in CY 2015, a decrease from the 57% in CY 2014
- MTA opened the new Waldorf Commuter Bus park-and-ride lot in FY16, offering 550 new parking spaces

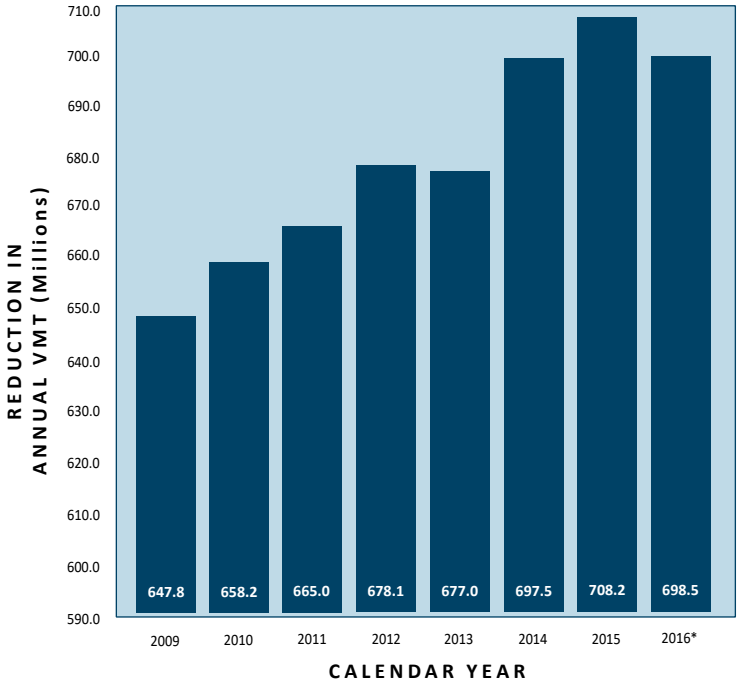
What Are Future Performance Strategies?

- Continue ongoing efforts to look for opportunities to construct park-and-ride lots while planning major projects along interstate and principal arterials
- Complete construction of the SHA US 15/ Monocacy Blvd park-and-ride in Spring 2018 to add 390 spaces
- Advertise through media to increase public awareness of park-and-ride lots
- Improve the appearance of existing and new park-and-ride lots by resurfacing, line stripping, lighting and signing
- SHA will work with MTA to provide bus service to park-and-ride lots. Historically, added bus service has greatly increased usage
- SHA will complete the design of four park-and-ride projects at MD 5 at MD 373 interchange, US 15 at MD 140, MD 32 at Broken Land Pkwy, and US 15/US 320 at Mt. Zion/Elmer Derr Road

MDOT: REDUCTION IN VEHICLE MILES TRAVELED THROUGH TRANSPORTATION EMISSION REDUCTION MEASURES (TERMS)

Maryland supports a wide variety of programs and projects to promote TDM, including Commuter Choice Maryland, Commuter Connections, the Telework Partnership, transit marketing and subsidy programs, and statewide park-and-ride facilities. These programs support reductions in single-occupant vehicle driving while increasing ridesharing, transit and telecommuting.

ESTIMATED ANNUAL REGIONAL VMT REDUCTION THROUGH TERMS



** 2016 data is preliminary and subject to change.*

2016 MDOT AND MTA TRANSPORTATION EMISSION REDUCTION MEASURES

PROGRAM	PROGRAM DESCRIPTION	DAILY REDUCTION IN VEHICLE TRIPS*	DAILY REDUCTION IN VEHICLE MILES OF TRAVEL*
Commuter Connections Transportation Emission Reduction Measures**			
Guaranteed Ride Home	Provides transit users or carpoolers up to four rides home per year in a taxi or rental car in the event of an unexpected personal or family emergency	7,711	212,823
Employer Outreach	Supports marketing efforts to increase employee awareness and use of alternatives to driving alone to work every day	78,553	1,327,044
Integrated Rideshare	Promotes other alternative transportation services to employers and to the general public. Commuter information system documentation is provided with comprehensive commute information, to include regional TDM software updates, transit, telework, park-and-ride and interactive mapping	2,379	66,442
Commuter Operations and Ridesharing Center	Updates and maintains the Commuter Connections database for ride-matching services and provides information on carpooling, vanpooling, telecommuting, bicycling and walking for the Washington-Baltimore metropolitan region	23,262	488,226
Telework Assistance	Provides information to employers in Maryland on the benefits of telecommuting and assists in setting up new or expanded telework programs for employers	9,651	205,511
Mass Marketing	Promotes and communicates the benefits of alternative commute methods to single-occupant vehicle commuters through the media and other wide-reach communications	10,294	173,269
MTA Transportation Emission Reduction Measures			
MTA College Pass	Offers a subsidized monthly transit pass to full- or part-time students enrolled in greater Baltimore metropolitan area colleges or universities	2,205	17,420
MTA Commuter Choice Maryland Pass	Baltimore region program that allows employers to purchase transit passes and vouchers for their employees. Employers can subsidize these for their employees or allow employees to purchase passes or vouchers with pre-tax income	15,857	267,501
Transit Store in Baltimore	Provides customer access to transit information and for purchases of transit passes. Some 15-20% of total transit pass sales occur through this outlet	3,200	53,983

** The impacts shown reflect the current definitions and most recent data available for each of the measures.*
*** The Commuter Connections program is run through the Metropolitan Washington Council of Governments. The reduction in trips and VMT for Commuter Connections reflect reductions for all of the Metro Washington region, including Maryland, District of Columbia and Virginia.*

MDOT: TRANSPORTATION-RELATED EMISSIONS BY REGION*

Reducing vehicle emissions improves air quality in compliance with federal regulations and provides health benefits for Maryland residents. MDOT programs supporting TDM, transit, ridesharing, bicycling and walking, as well as projects that reduce roadway congestion all support air quality goals.

PERFORMANCE MEASURE	REGION	CALENDAR YEAR 2008	2011	2014	% CHANGE 2008-2014
Volatile Organic Compound (VOC) Tons per Day	Baltimore	50.1	45.3	32.7	-35%
	Washington**	42.8	40.0	28.6	-33%
Nitrogen Oxide (NOx) Tons per Day	Baltimore	125.7	116.7	78.7	-37%
	Washington**	102.2	103.0	63.8	-38%
Carbon Monoxide (CO) Tons per Day	Baltimore	844.3	699.9	494.9	-41%
	Washington**	666.0	575.1	399.5	-40%
Particulate Matter (PM2.5) Tons per Day	Baltimore	5.8	5.5	3.8	-34%
	Washington**	4.4	4.7	3.0	-32%

** All emission estimates developed as part of the USEPAs National Emissions Inventory (NEI). The NEI is published every three years.*

*** All Washington data represents Maryland's share of emissions in the Washington region non-attainment areas, including Charles, Frederick, Montgomery and Prince George's counties.*

Why Did Performance Change?

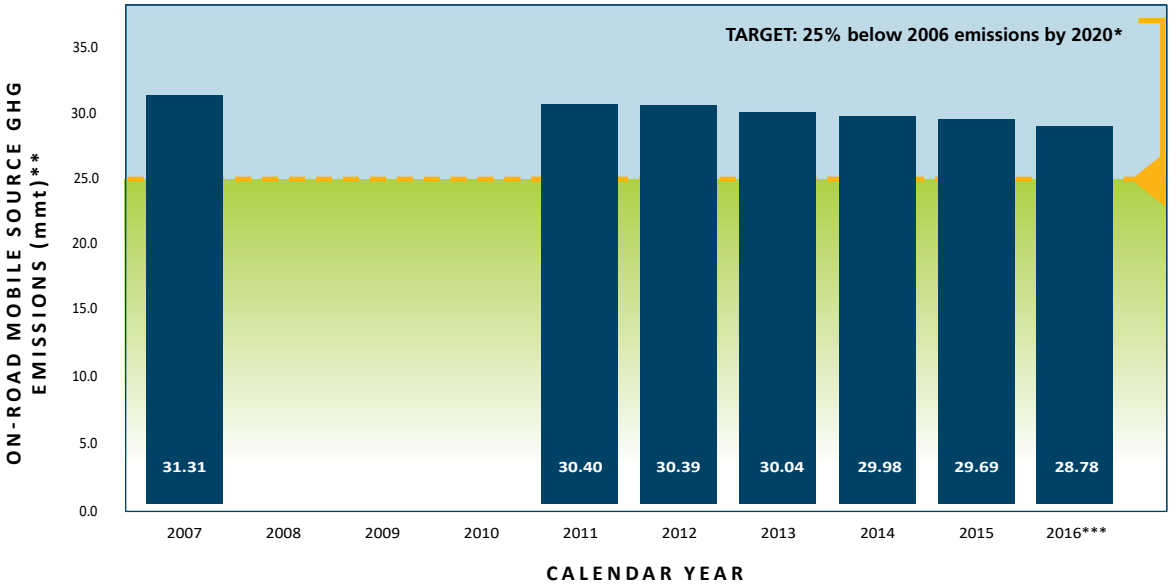
- Vehicle emissions decreased nationwide due to improved vehicle technologies and reductions in VMT caused by increased fuel prices
- Saw an increase in financial support for alternative modes of transportation at the state and local levels
- Implemented emission-reduction strategies in non-attainment areas to foster transportation alternatives to single occupancy vehicles (SOV)
- Through TERMs, MDOT supports the reduction of emissions in air quality non-attainment and maintenance areas in Maryland through congestion mitigation, ridesharing and commuter incentive programs

What Are Future Performance Strategies?

- Support VMT and other GHG reduction strategies recommended by the Maryland Commission On Climate Change
- Execute regional emission reduction strategies recommended by the Ozone Transport Commission
- Support growth in transit as a preferred mode choice through system enhancements and outreach
- Work with State Agency and other partners to achieve Electric Vehicle and Electric Vehicle Supply Equipment (EVSE) goals
- Support mobile source emission reduction efforts and invest in alternative transportation
- Endeavor to help meet the GHG emission reduction goals of the Greenhouse Gas Reduction Act of 2009 Maryland Climate change legislation. This bill seeks to reduce GHG emissions by 25% from 2006 levels by 2020
- In the FY 2017-FY 2022 CTP, MAA set aside $16 million to purchase 20 new clean diesel, 60-foot articulated buses to replace the aging shuttle bus fleet; the new buses will further mitigate particulate matter emissions from bus operations
- In the FY 2017-FY 2022 CTP, MDTA has committed over $65 million to replace its electronic toll collection system with a Next Generation system that will substantially increase the capacity for handling Video Tolling and citations, enabling MDTA to reduce traffic delays and emissions over time
- In 2016, MPA was awarded a $978,302 grant under EPA's Clean Diesel Program to replace or repower up to 26 pieces of cargo handling equipment at the Port of Baltimore
- MVA continues to work with MDE to ensure compliance with State emissions regulations and continues to monitor the number of registered vehicles in non-attainment counties to ensure VEIP testing compliance
- SHA is using its Carbon Footprint and Reduction Recommendations Report to further develop agency-wide GHG reduction strategies and is tracking performance in the FY 2016- FY 2019 SHA Business Plan

MDOT: TRANSPORTATION-RELATED GREENHOUSE GAS EMISSIONS

A reduction in the growth of overall VMT is one of several strategies that MDOT is pursuing to address climate change through mitigation of GHG emissions. Reducing growth in VMT through providing transportation alternatives has other potential benefits to Marylanders, such as reduced congestion, reduced travel costs and improved travel time reliability. Other strategies include investing in technologies that minimize GHG, providing alternatives to SOV travel and transitioning to a less carbon-intensive vehicle fleet and lower carbon fuels.



** The MDOT selected GHG emission reduction goal (25% below 2006 emission by 2020) is consistent with the statewide target set in the 2009 Greenhouse Gas Reduction Act. For on-road transportation, the goal equals 23.5mmt CO2e in 2020.*

*** MMT CO2e stands for million metric tons of carbon dioxide equivalents, the standard unit of measurement for GHG emissions. Emissions are calculated using the most recent data and version of EPAs MOVES model available at time of analysis. MOVES2014 is used for analysis year 2016.*

Why Did Performance Change?

- Vehicle emissions decreased due to improved vehicle technologies
- MDOT increased financial support for alternative modes of transportation at the state and local levels
- The 2016 Strategy for Air Quality and GHG Emission Goals highlights MDOT's progress in reducing mobile source criteria air pollutants, moving the entire state toward attaining all National Ambient Air Quality Standards (NAAQS)

What Are Future Performance Strategies?

- Support VMT and other GHG reduction strategies recommended by the Maryland Commission on Climate Change and execute regional emission reduction strategies recommended by the Ozone Transport Commission
- Endeavor to help meet the GHG emission reduction goals of the Greenhouse Gas Reduction Act of 2009 Maryland Climate change legislation. This bill seeks to reduce GHG emissions by 25% from 2006 levels by 2020
- Provide high quality transit service as a convenient and reliable mode choice through system enhancements and outreach
- In 2016, MPA, MDOT and MDE entered into an agreement to work collaboratively to identify, develop and, when appropriate, implement new cost-effective, voluntary programs that will reduce emissions and increase energy efficiency; they are applying for and are being awarded some grants to fund emissions reduction projects

GOAL ♡ Community Vitality

Provide options for the movement of people and goods that support communities and quality of life

SUMMARY OF **GOAL ACHIEVEMENT**

OBJECTIVES

- Better coordinate transportation investments and land use planning to support the environmental, social and economic sustainability of Maryland's existing communities and planned growth areas
- Enhance transportation networks and choices to improve mobility and accessibility and to better integrate with land use
- Increase and enhance transportation connections to move people and goods within and between activity centers

MDOT has a comprehensive and integrated multimodal transportation network that provides efficient, safe and seamless transportation options for residents and visitors alike. Multimodal systems allow citizens to optimize their decisions about transportation. Communities thrive when they can take advantage of the diverse services of all modes to move them reliably and conveniently from each origin to each destination. Programs and initiatives led by MDOT and its transportation business units support cycling and walking as everyday modes of transportation, recreation and vital elements of livable and healthy communities. These efforts, combined with the promotion of Transit-Oriented Development (TOD), increase and enhance transportation connections to move people and goods within and between activity centers and better connect people with life's opportunities.

On the statewide level, MDOT shows its support for a balanced transportation network through targeted improvements, such as its recent $14.9 million investment to enhance bicycle, pedestrian and multi-use trails across the state. This investment will improve key connections and link transportation options as well as improve safety and economic development in 21 counties and 10 municipalities throughout Maryland, further enhancing Maryland's attractiveness as a cycling and tourist destination. On a local level, initiatives that promote multimodal transportation options include the launch of Express BusLink in 2016, the first new service offered as part of BaltimoreLink, which will provide longer-distance, commuter-oriented trips to both downtown job centers as well as between regional suburban job centers. The new BaltimoreLink transit plan will better connect people to jobs, entertainment centers, transit modes and improve suburb-to-suburb connectivity.

Maryland's comprehensive road and bridge network facilitates important regional linkages between activity centers for Maryland residents and visitors. Maryland's road network supports communities by providing access to jobs, services, recreational and tourist areas, and commercial areas. However, when activity on the roads creates severe congestion, it increases the cost of mobility for everyone and reduces the efficiency and effectiveness of the transportation network. On a statewide level, Maryland works to improve congestion by improving travel times throughout the I-270 corridor, including constructing a new $129.6 million interchange to reduce congestion on local roads and improve safety for residents and commuters.

Collectively, MDOT programs and investments increase and enhance transportation options for people and goods – making desired destinations more accessible, reducing the cost and time spent on transportation.

KEY INITIATIVES AND CTP PROJECTS

TSO: Support alternative transportation options by providing technical support and grant opportunities for Bikeways, Bikeshare and for the Federal Surface Transportation Block Grant Program (STBG) (formerly Transportation Alternatives) Set-Aside (TA Set-Aside), ($53 million in the FY 2017-FY 2022 CTP).

MAA: Support passenger growth and ensure safe and efficient operations, economic vitality and environmental stewardship while continuing to provide/promote air service opportunities from Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport). Support significant terminal and airfield improvements at BWI Marshall Airport, including the new Concourse D/E Connector, airfield pavement management program improvements and international concourse extension.

MDTA: Continue the system preservation of tunnels, highways and bridges through the construction of express toll lanes (ETL), innovative and customer service-oriented toll systems, and improved interchanges. Continue system preservation and safety efforts for tunnels, bridges and highways, improve interchanges, and support innovative and customer service-oriented toll systems.

MPA: Continue to support and advance environmental programs that improve air quality in the Port of Baltimore. Execute projects that enhance and promote competitive and secure state of the art terminals capable of efficiently handling diverse cargoes through the acquisition of parcels of land adjacent to or near existing marine terminals at the Port (FY 2017-FY 2022 CTP).

MTA: Continue to improve bus on time performance (OTP) and reliability through real-time data improvements, increased on time reporting and improved maintenance tracking to facilitate a more reliable and efficient bus system. The ExpressLink, the first new services offered as part of the BaltimoreLink initiative, will create an integrated transit system that is easy-to-use and helps alleviate downtown congestion by opening up the transit grid and connecting people to emerging job centers.

MVA: Seek ways to improve customer wait times by providing alternative methods for interacting with MVA at a customer's convenience. Invest in information technology modernization projects as well as facility and VEIP enhancements to improve the ease of customer accessibility to MVA's services and products.

SHA: With MDOT funding, continue to prioritize safe and interconnected pedestrian access along state highways through comprehensive grant programs such as $2.77 million in Bikeways Program grants, $1.03 million in Recreational Trails Program grants and $11.1 million in Transportation Alternatives Program grants.

Maryland Transit-Oriented Development

MDOT's Transit-Oriented Development (TOD) strategy seeks to create compact, mixed-use communities near transit where people can enjoy easy access to jobs and activity centers. Maryland promotes TOD to enhance the efficiency of the transportation network and also to help create economic centers that contribute to a high quality of life in rural and urban areas. MDOT partners with local jurisdictions to support TOD by providing technical assistance, planning studies, financing tools, and coordination across several other state agencies.

New Carrollton Metro Station TOD

The New Carrollton Metro station is the busiest in Prince George's County. MDOT has been partnering with WMATA and other stakeholders to achieve a TOD at the station which will include a mix of residential, retail, office, hotel and open space. The effort broke officially broke ground in 2014 and will entail a phased approach to develop 42 acres with 1.3 million square feet of apartments (roughly 1,370 units), 1.1 million square feet of office space, and 150,000 square feet each of both retail and hotel. In 2015, Maryland's Housing and Community Development supported this momentum by moving into a 97,000 square foot building adjacent to the TOD site.

Annapolis Junction Town Center TOD

Located near the Savage MARC Rail Station, the Annapolis Junction Town Center, now under construction, will enable easy access to Washington, D.C. and Baltimore, MD. The new development is situated about one mile from National Business Park, Fort George G. Meade U.S. Army Installation and other key government security installations. As part of a larger office park development, the planned TOD will fill nearly 19 acres of land and will include multifamily units, office space, a hotel, retail and parking. The development will include free parking for MARC rail commuters in a new four-level parking garage owned and operated by the State of Maryland. A shared, 700-space, 2 1/2-story parking garage is complete and open. Construction of an office building and apartment structure is nearing completion, and retail construction has commenced.

White Flint Station TOD

The 24-acre Pike and Rose compact mixed-use district is served by the White Flint Metrorail station. Pike and Rose completed its first development phase in 2015 which includes 493 apartment units, 80,000 square feet of office space and renovated pre-existing retail. The second phase, to be completed in 2017, will include an additional 340,000 square feet of retail, 463 apartment units and 104 luxury condos. The Pike and Rose commercial district is a part of the White Flint Sector plan, which establishes guidelines for transportation and infrastructure improvements as well as upgrades to the White Flint Metrorail station.

TOD BENEFITS

ECONOMIC

- Enhance economic opportunity by linking residents with employment and service destinations
- Leverages investment in transportation infrastructure to improve return on public investment
- Supports local community development goals by creating new development and jobs

PEOPLE

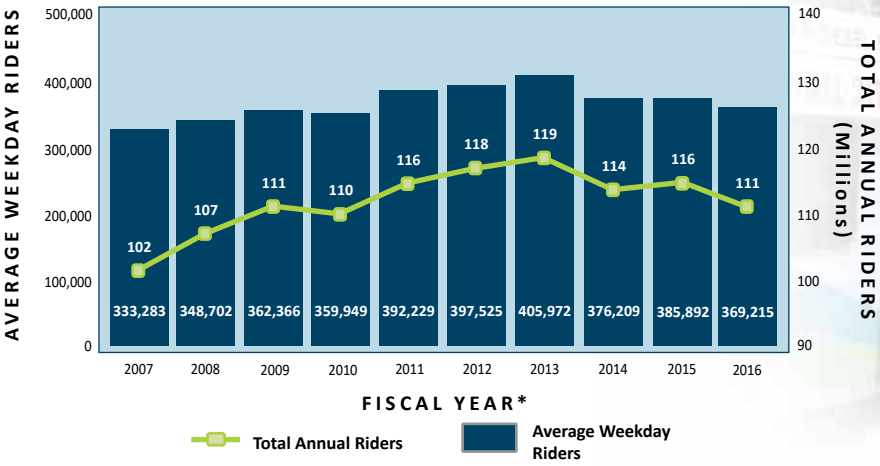
- Creates pleasant places to live, work and play in walkable communities
- Increases transportation options and reduces time spent in traffic
- Can lower household costs for transportation through reduced need to own, drive and park vehicles

ENVIRONMENT

- Promotes clean air by reducing traffic congestion
- Reduces impervious surface for parking, thereby improving water quality
- Creates new opportunities for natural resource preservation and open space by promoting more efficient land use

MTA: TRANSIT RIDERSHIP

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



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

Why Did Performance Change?

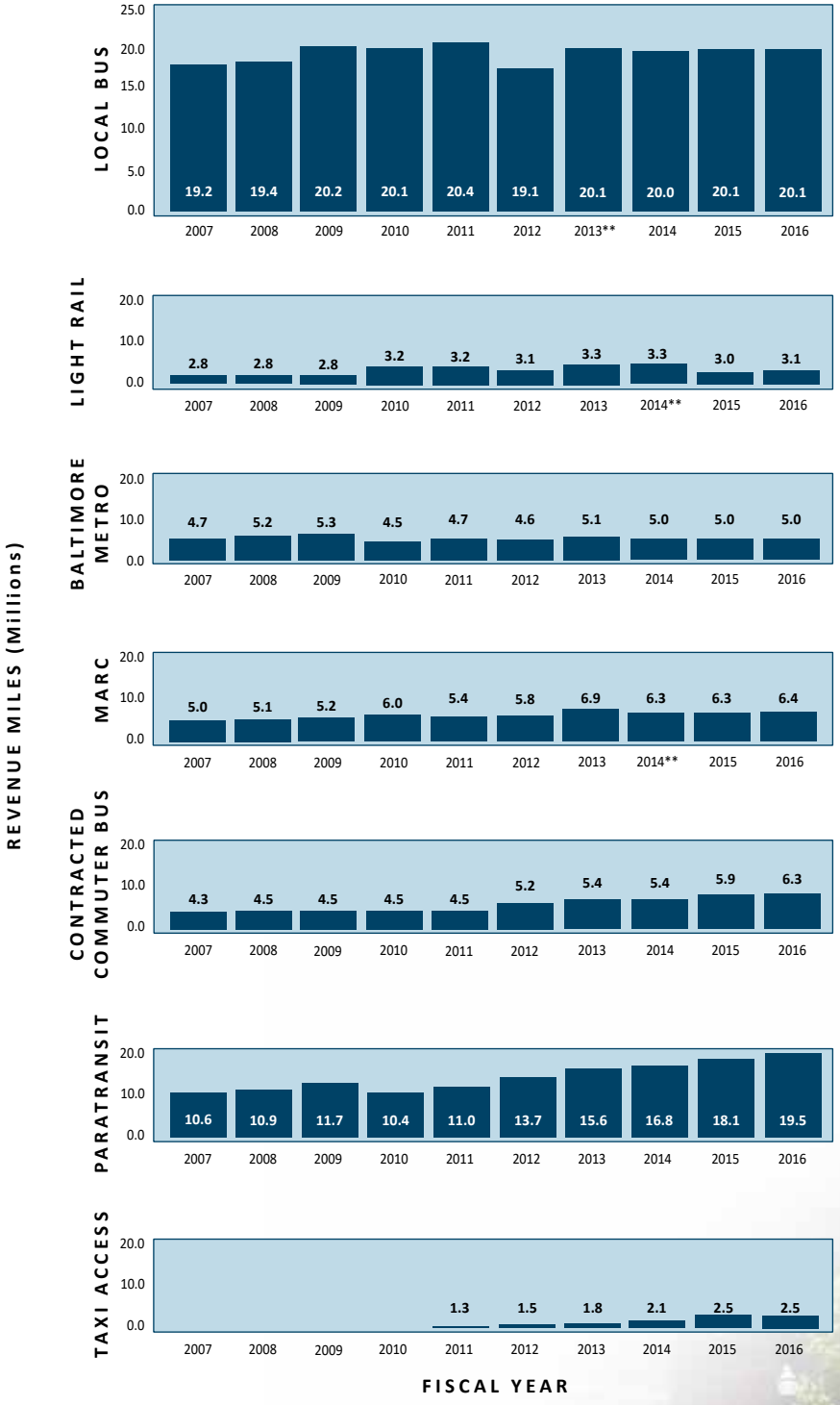
- MTA experienced a decrease in ridership from 116 million in FY 2015 to 111 million in FY 2016, which is an overall decrease of 4%
- MTA restructured several routes on Local Bus service in preparation for the upcoming BaltimoreLink bus redesign
- According to the National Transit Database, other peer agencies similar to the MTA such as Washington Metropolitan Area Transit Authority (WMATA), SEPTA (Philadelphia), MARTA (Atlanta), and PAAC (Pittsburgh) are experiencing similar ridership decreases from FY 2015 to FY 2016 in Local Bus, Commuter Bus, Light Rail and Heavy Rail services
- Maryland and the surrounding areas experienced a record blizzard in January 2016 where transit services at the MTA, WMATA and SEPTA were completely shut down and not operating on any level between two to three days. The decision to close transit services at the MTA during this historic blizzard was made for safety reasons with WMATA and SEPTA quickly following suit. The MTA experienced a 16.7% decrease in average monthly ridership during January 2016 when comparing to the averages of the remaining months in FY 2016. WMATA experienced an even larger decrease in monthly ridership for the same time period

What Are Future Performance Strategies?

- With the BaltimoreLink initiative, transit connectivity in the Baltimore Metropolitan region and current centers of employment will be vastly improved and thereby increases in transit as a preferred choice of travel is expected
- Aggressively seek solutions to maximize Local Bus system capacity while controlling costs through efficient scheduling and system design
- Implement real-time passenger information on MTA's transit services
- Increase system reliability through reductions in mechanical failures and improving OTP

MTA: ANNUAL REVENUE VEHICLE MILES OF SERVICE PROVIDED*

Revenue vehicle miles, or each mile for which a transit vehicle is in service and accepting customers, indicates the level of transit service available to, and in use by, the general public.



** Excludes Locally Operated Transit Systems (LOTS) and WMATA.*
*** Selected data was revised from previous Attainment Report.*

Why Did Performance Change?

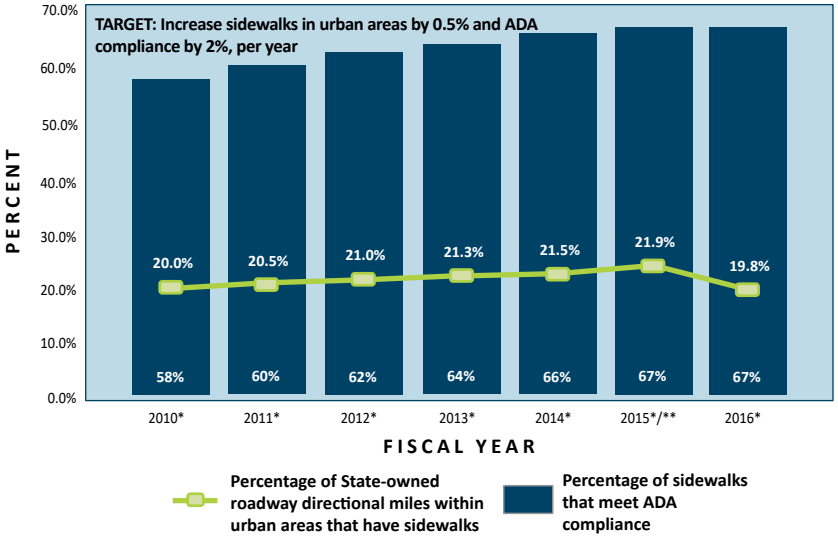
- FY 2016 launched Phase I of BaltimoreLink adding more mileage to Local Bus
- A large increase in Paratransit mileage was due to the large increase in number of trips provided
- Baltimore Metro continued to perform scheduled track repair and maintenance, having an impact on the revenue miles but little impact to the riding public
- MTA split various Commuter Bus routes into separate routes to reduce stops and make the travel time more convenient for patrons

What Are Future Performance Strategies?

- Implement BaltimoreLink, the redesign of MTA's local transit service to create an interconnected transit system linking Baltimore area residents to existing and new job growth areas
- BaltimoreLink will launch in the summer of 2017, providing new and improved routes, one-transfer system to MTA's rails and new CityLink routes, which will run every 10 minutes during peak periods
- The revenue vehicle miles of service for Local and Express Bus will drastically alter after the BaltimoreLink initiative in summer of 2017, which will reconfigure existing routes to reallocate service miles and maximize transit connectivity to all of MTA services

SHA: PERCENTAGE OF STATE-OWNED ROADWAY DIRECTIONAL MILES WITHIN URBAN AREAS THAT HAVE SIDEWALKS & PERCENT OF SIDEWALKS THAT MEET AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE*

Available sidewalk facilities provide mobility for pedestrians. Tracking the percent that are ADA compliant helps ascertain whether Maryland's sidewalk program meets federal benchmarks.



** In the future, Bike and Pedestrian Attainment Report performance measures might include Attainment Report Advisory Committee (ARAC) approved updates and modifications that result from the MDOT Bike and Pedestrian Master Plan update. 2010-2016 data based on a new data collection method that cannot accurately be compared to previous years' data.*

***2015 Actual values revised from previous Attainment Report.*

Why Did Performance Change?

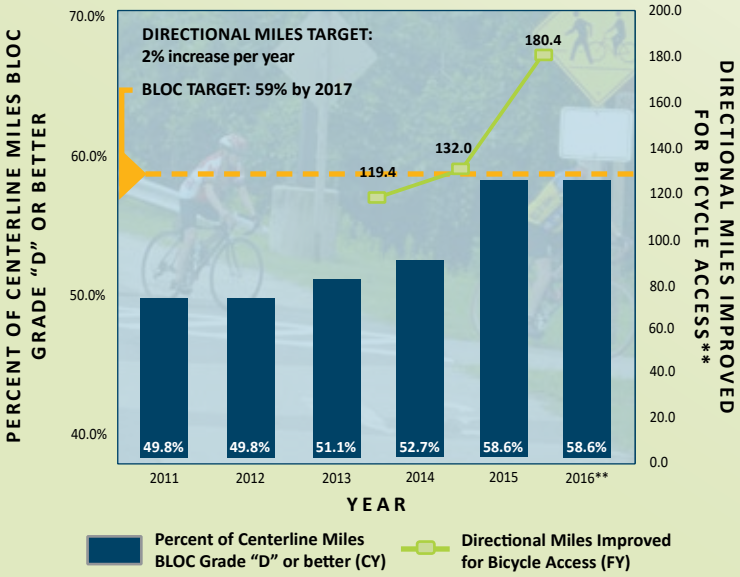
- Invested $20.7 million in FY 2016 to improve and construct sidewalks and to address ADA accessibility, including the construction of new directional miles of sidewalk in St. Leonard, Indian Head, Solomons and Emmitsburg
- Initiated tracking of the percentage of state-owned roadway directional miles within short trip opportunity areas (STOAs) and within priority funding areas (PFAs) that have accessible sidewalks
- Decrease from previous report due to a re-evaluation of sidewalks previously noted as ADA compliant; ADA Accessibility Guidelines now call for specific passing zone requirements and some sidewalks no longer meet these guidelines

What Are Future Performance Strategies?

- Collaborate with urban counties and local governments to identify new sidewalk projects
- Develop and evalutate sidewalk improvement projects, and construct improvements to increase directional miles of urban roadways with sidewalk
- Target improvements in STOAs to increase accessibility to transit and other public services and to address areas of high pedestrian injuries and fatalities
- Support safe pedestrian access along state highways ($29.0 million for the New Sidewalk Construction for Pedestrian Access Program and $45.9 million for the Sidewalk Reconstruction for Pedestrian Access Program (ADA Compliance) in the FY 2017-FY 2022 CTP)

SHA: PERCENTAGE OF STATE-OWNED ROADWAY CENTERLINE MILES WITH A BICYCLE LEVEL OF COMFORT (BLOC) GRADE "D" OR BETTER & NUMBER OF DIRECTIONAL MILES IMPROVED FOR BICYCLE ACCESS*

Bicycle Level of Comfort (BLOC) (scale "A" to "F") is a measure for assessing the quality of the statewide roadway system for its comfort and compatibility with bicycle users. It accounts for multiple characteristics of the roadway through a formula, which produces a single BLOC grade for any section of roadway. "Improved for bicycle access" means that shoulder and travel lanes have permanent markings to designate use for bicyclists. Bicycle access is a good measure of "bike friendliness"; however, access is not captured in the BLOC formula; thus, both must be taken into account when evaluating the quality of the bicycling environment.



** In the future, Bike and Pedestrian Attainment Report measures might include ARAC-approved updates and modifications that result from the MDOT Bike and Pedestrian Master Plan update. The BLOC measure was updated in 2015 with new 2010 – 2016 actual values, which are not comparable to prior data.*

*** 2016 BLOC centerline miles data is preliminary and subject to change. 2016 inventory update resulted in directional miles increase.*

Why Did Performance Change?

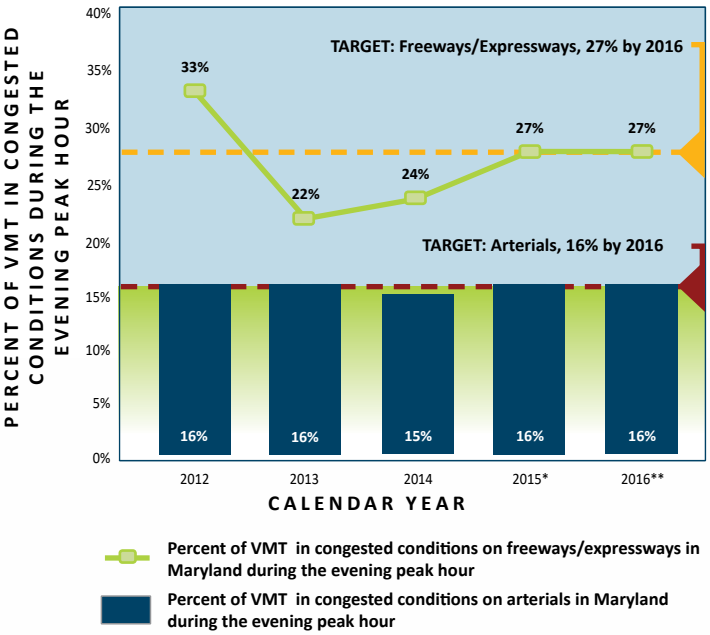
- Coordinated with bicycle and pedestrian groups to review and recommend approaches and strategies to statewide bicycle safety education and outreach
- Implemented statewide multi-jurisdictional bicycle routes that connect to regionally significant destinations/points of interest
- Spent $4.9 million for dedicated bicycle improvement projects, including dedicated bicycle lane projects near the Halethorpe MARC station and Linthicum Light Rail station

What Are Future Performance Strategies?

- Identify critical bicycle connections and work with local jurisdictions to identify priority areas and projects
- Complete development of a bicycle route policy which will help define how routes should be designated, designed and signed
- Evaluate bicycle improvements through 'road diets' on roadways in the vicinity of transit facilities
- Support bikeway projects along state highways ($13.2 million for the Bicycle Retrofit Program in the FY 2017-FY 2022 CTP)
- Increase and enhance public outreach efforts to more effectively communicate safety and roadway conditions for bicycling

SHA & MDTA: PERCENT OF VMT IN CONGESTED CONDITIONS ON FREEWAYS/EXPRESSWAYS & ARTERIALS DURING THE EVENING PEAK HOUR

This measure tracks SHA performance in reducing congestion on the state highway system. This is an indicator of congestion and the people/vehicles impacted by congestion.



** 2015 data revised from previous Attainment Report.*
*** 2016 data is preliminary and subject to change.*

Why Did Performance Change?

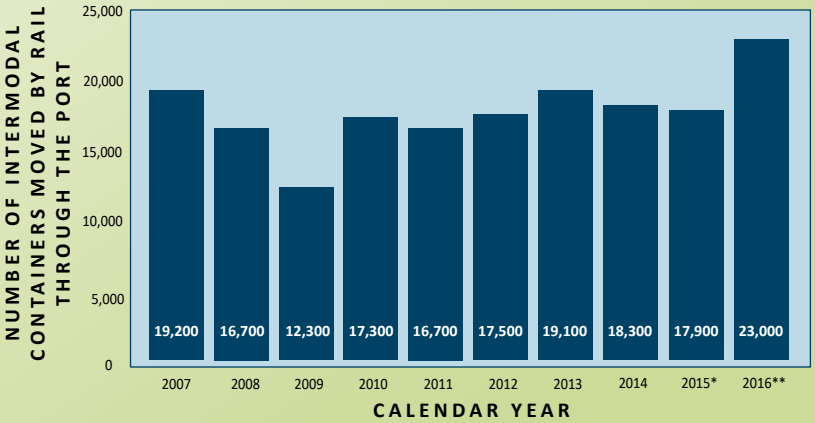
- Increase in the percent of VMT experiencing congestion on freeways/expressways in evening peak hour could be attributed to the steadily improving economy and job market, and low fuel prices
- Carried out mobility and congestion management initiatives, including: capacity enhancements, geometric improvements, incident management, signal operations, work zone management, special event planning and Intelligent Transportation Systems (ITS) strategies

What Are Future Performance Strategies?

- Develop and implement practical design solutions to alleviate congestion hotspots
- Develop and implement short-term congestion management solutions to improve traffic operations including: geometric improvements, incident management, special event planning and ITS strategies to improve traffic operations on the freeway/expressway system
- Incorporate the MDOT SHA Transportation Systems Management and Operations (TSM&O) strategic implementation plan to improve mobility and reliability
- Work on long-term multimodal solutions that meet current and future travel demand on our systems
- Continue signal retiming and optimization programs to improve arterial operations
- Develop strategies for better work zone management and coordination

MPA: INTERMODAL CONTAINERS MOVED BY RAIL THROUGH THE PORT

Tracking intermodal containers moved by rail through the Port provides an understanding of the options for containerized freight movement to/from MPA's terminals (particularly Seagirt & Dundalk) via CSX or Norfolk Southern (NS) railroads.



** 2015 data revised from previous Attainment Report.*
***2016 data is preliminary and subject to change.*

Why Did Performance Change?

- Several mergers have occurred in the container industry; mergers tend to result in an increase in container movement
- Movement of South American cargo via rail to the Port of Baltimore persisted, but previous contracts in other competing ports associated with the steamship line changes have shifted some rail volume away from Baltimore
- Aggressive rail pricing by Class I railroads operating in other ports has diverted box-car traffic from the Port of Baltimore

What Are Future Performance Strategies?

- Ports America Chesapeake (PAC) will soon assume direct control of the Intermodal Container Transfer Facility (ICTF) as part of its 50-year MPA lease concession, allowing PAC to operate the ICTF and utilize existing economies of scale associated with their other operations at Seagirt
- The MPA will begin an intermodal rail incentive program, once the new operating structure at the ICTF with PAC is completed, to provide parity in the rail costs associated with Baltimore compared to competing ports despite not having double-stack capabilities
- MDOT/MPA and CSX are committed to creating double-stack clearance through the Howard Street Tunnel
- MDOT and the MPA are engaging all stakeholders to ensure Norfolk Southern's freight access on the Northeast Corridor is maximized
- Recent expansion of the Panama Canal represents more cargo opportunity in both volume and number of cargo shipping lines calling on the Port of Baltimore in the future

Glossary

GLOSSARY TERM	DEFINITION
All Electronic Tolling (AET)	Collection of tolls at highway speeds using *E-ZPass®* transponders or video tolling; no toll booths or cash collection.
Annual Attainment Report on Transportation System Performance (AR)	Pursuant to Transportation Article Section 2-103.1 of the Annotated Code of Maryland, the State is required to develop or update an annual performance report on the attainment of transportation goals and benchmarks in the Maryland Transportation Plan (MTP) & Consolidated Transportation Program (CTP). The Attainment Report must be presented annually to the Governor and General Assembly before they may consider the MTP and CTP.
Base Realignment and Closure (BRAC)	BRAC is a Congressionally authorized process the Department of Defense has previously used to reorganize its base structure to more efficiently and effectively support U.S. forces, increase operational readiness and facilitate new ways of doing business.
Calendar Year (CY)	The period of 12 months beginning January 1 and ending December 31 of each reporting year.
Coordinated Highways Action Response Team (CHART)	CHART is an incident management system aimed at improving real-time travel conditions on Maryland's highway system. CHART is a joint effort of the State Highway Administration, Maryland Transportation Authority and the Maryland State Police, in cooperation with other federal, state and local agencies.
Consolidated Transportation Program (CTP)	A six-year program of capital projects, which is updated annually to add new projects and reflect changes in financial commitments.
E-ZPass®	An electronic toll collection system utilized to provide a more efficient flow of traffic through MDTA toll facilities. *E-ZPass®* toll collection is available at all eight MDTA toll facilities. The benefits of *E-ZPass®* membership allow travel from Virginia to Maine and as far west as Illinois, with tolls paid from a Maryland *E-ZPass®* account.
Fiscal Year (FY)	A yearly accounting period covering the time frame between July 1 and June 30 of each reporting year.
Fixing America's Surface Transportation Act or "FAST Act"	On December 4, 2015, President Obama signed the FAST Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, bicycle and pedestrian planning, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs.
Intercounty Connector (ICC)/MD 200	All electronic toll-road from I-270 in Montgomery County to US-1.
Locally Operated Transit Systems (LOTS)	Transit systems that provide primarily bus service and demand response within the local areas in which they operate. They are funded through a combination of federal, state and local money. MDOT provides financial, technical and operating support for these services.
Maryland Transportation Plan (MTP)	The MTP is MDOT's long-range transportation policy plan and includes the vision, goals and objectives that provide the policy framework and context for Maryland's transportation programs and investments. The MTP sets Department policy for the 20-year period and is updated every five years.
MPA General Cargo	Foreign and domestic waterborne general cargo handled at the public (MPA) terminals.
Port of Baltimore Foreign Cargo	International (Foreign) cargo handled at public and private terminals within the Baltimore Port District. This includes bulk cargo (e.g., coal, sugar, petroleum, ore, etc. shipped in bulk) and all general cargo (e.g., miscellaneous goods shipped in various packaging).
MAP-21	On June 6, 2012, the President signed into law the Moving Ahead for Progress in the 21st Century (MAP-21) P.L. 112-141 - new legislation that will stabilize funding for highway and transit programs for two years and will set national, statewide and metropolitan transportation planning and policy direction. The federal bill did not increase funding levels and also did not address the long-term solvency of the Federal Highway Trust Fund.
Mode	Form of transportation used to move people or cargo (e.g., truck, rail, air).
REAL ID	The federal REAL ID Act of 2005 sets new standards designed to improve the integrity and security of State-issued driver's licenses and identification cards. The legislation contains 39 benchmarks for states to meet the requirements of the REAL ID Act. The full text of the REAL ID Act (including benchmarks) is available on the Department of Homeland Security's website at ***www.dhs.gov***. General information about Maryland's involvement with the REAL ID Act is available on MVA's website at ***www.mva.maryland.gov***.
State Report on Transportation (SRT)	The SRT is prepared annually and distributed to the General Assembly, local elected officials and interested citizens. It consists of two documents, the Maryland Transportation Plan (MTP) and the Consolidated Transportation Program (CTP).
Transit-Oriented Development (TOD)	Transit-Oriented Development (TOD) is a land use strategy intended to promote efficient use of land and transportation infrastructure. TODs are places of relatively higher density, pedestrian-friendly development with a mix of land uses located within an easy walk of a bus or rail transit center. In 2008, the legislature adopted a definition of TOD. As defined in statute, a TOD is: "a dense, mixed-use deliberately-planned development within a half-mile of transit stations that is designed to increase transit ridership."
Transportation Business Unit	MDOT's transportation business units include Maryland Aviation Administration (MAA); Maryland Port Administration (MPA); Maryland Transit Administration (MTA); Motor Vehicle Administration (MVA); State Highway Administration (SHA) and the Maryland Transportation Authority (MDTA). The MDOT Secretary also serves as Chairman of the MDTA.
Transportation Infrastructure Investment Act	Signed into law on May 16, 2013, the Transportation Infrastructure Investment Act of 2013 (Transportation Act)- new legislation that will support thousands of jobs and invests an average of $800 million a year at full implementation and a total of $4.4 billion over the next six years (FY 2014- FY 2019).
Travel Demand Management (TDM)	TDM strategies support the use of alternatives to the traditional single-occupant vehicle through a variety of programs and incentives (e.g., carpooling, car sharing, transit, park-and-ride facilities, teleworking and flexible work hours).
Vehicle Miles of Travel (VMT)	A measurement of the total miles traveled by all vehicles.

Appendix: List of Performance Measures by Business Unit

MTP GOAL	PERFORMANCE MEASURE	DEFINITION	PAGE
Maryland Department of Transportation (MDOT)			
Economic Prosperity	Freight originating and terminating in Maryland (value and tonnage)	Data is based upon the following sources, U.S. Department of Transportation Freight Analysis Framework (FAF3) Version 3. The data is adjusted yearly to account for previous year actual data and a 2% annual growth rate consistent with the Federal Highway Administration's Freight Summary 2008. BWI Marshall Airport report to Airports Council International (2011); and MPA and U.S. Army Corps of Engineers (2010)	18
Environmental Stewardship	Transportation Emissions Reduction Measures (TERMs) • Commuter Operations and Ridesharing Center • Employer Outreach (including Employer Outreach for Bicycles) • Guaranteed Ride Home	TERMs and Travel Demand Management (TDM) strategies support the use of alternatives to the traditional single-occupant vehicle	48
Environmental Stewardship	Transportation-related emissions by region	Tons of Volatile Organic Compound (VOCs) and Nitrogen Oxide (NOx), precursors of Ozone, emitted per day for an average weekday from transportation sources in the Baltimore and Washington regions	49
Environmental Stewardship	Transportation-related greenhouse gas (GHG) emissions	GHG emissions primarily include carbon dioxide, methane, nitrous oxide, carbon monoxide, oxides of nitrogen and non-methane volatile organic compounds	50
Maryland Aviation Administration (MAA)			
Economic Prosperity	Number of nonstop airline markets served	Nonstop flights are direct to destination without connections	21
Economic Prosperity	Non-airline revenue per enplaned passenger (RPE)	Total non-airline revenue (ground transportation, parking, concessions, etc.) / Total enplaned passengers at BWI Marshall Airport	21
Safety & Security	Rate of airfield ramp incidents and accidents per 1,000 operations	Incident reports collected by MAA / 1,000 operations (take offs and landings)	27
Safety & Security	BWI Marshall Airport crime rate	Crimes include all crimes against persons or property at BWI Marshall Airport facilities	27
Safety & Security	Number of repeat discrepancies in the annual Federal Aviation Administration's Federal Aviation Regulation inspection	Annual FAA Part 139 Federal Aviation Regulation (FAR) assessment conducted by the Federal Aviation Administration	28
Quality of Service	Airline cost per enplaned passenger (CPE)	Total airline-related fees / Total enplaned passengers at BWI Marshall Airport	41
Quality of Service	Percent of BWI Marshall Airport customers rating the airport "good" or "excellent" on key services	Percent of customers giving a score of 4 or 5 (on a 5 point scale) for "Overall Satisfaction" and "How likely to fly from BWI Marshall Airport on their next trip"	41
Maryland Port Administration (MPA)			
Economic Prosperity	Port of Baltimore foreign cargo and MPA general cargo tonnage	MPA general cargo includes foreign and domestic waterborne cargo; Port of Baltimore foreign cargo includes bulk and general cargoes within the Port District, but does not include domestic cargo	19
Economic Prosperity	Revenue, operating expense and net income	Total revenues compared to operating expense of MPA	20
Economic Prosperity	International cruises using the Port of Baltimore	Number of international cruises using the Port of Baltimore as a home port	20
Safety & Security	MPA compliance with the Maritime Transportation Security Act of 2002	MPA activities in support of a compliance (Pass / Fail) rating from the U.S. Coast Guard	28
System Preservation	Dredged material placement capacity remaining for Harbor and Poplar Island sites	Monitors existing capacity remaining at Harbor and Poplar Island dredged material placement sites	31
Quality of Service	Average truck turn-around time at Seagirt Marine Terminal	Amount of time for a truck to enter the Terminal gate, drop off and/or receive a container, and exit the gate	42
Environmental Stewardship	Acres of wetlands or wildlife habitat created, restored or improved since 2000	Cumulative tally of acreage created, restored or improved for wildlife habitat	46
Community Vitality	Intermodal containers moved by rail through the Port	Tracks intermodal containers that are moved by rail through the Port. This is containerized freight movement to/from MPA's terminals (particularly Seagirt & Dundalk) via CSX or Norfolk Southern railroads	56

Appendix: List of Performance Measures by Business Unit

MTP GOAL	PERFORMANCE MEASURE	DEFINITION	PAGE
Maryland Transit Administration (MTA)			
Safety & Security	Customer perceptions of safety on the MTA system	Average score for: Feeling safe while riding, while waiting at stops and stations, and for my vehicle left in an MTA parking lot	26
Safety & Security	Preventable accidents per 100,000 vehicle miles	Preventable accidents are accidents in which drivers did not do everything they could to avoid an accident / 100,000 vehicle miles	26
System Preservation	Average fleet age of transit revenue vehicles	Average fleet age of revenue vehicles to understand the status of the fleet used to transport patrons. This indicates fuel consumption, energy efficiencies, preventative maintenance needs and repair expectations	32
Quality of Service	Percent of service provided on time	Baltimore Metro and MARC: Number of trips arriving on schedule. Local Bus: Calculated from data-transmitting buses tracking the number of time points arrived at on time divided by the total number of scheduled time points	35
Quality of Service	Operating cost per passenger trip	Total operating expenses / Number of unlinked passenger	36
Quality of Service	Operating cost per revenue vehicle mile	Operating cost for each mode / Total miles when vehicle is in service (not deadheading or down time)	37
Quality of Service	Customer satisfaction rating	Average score for: Overall satisfaction of each MTA service (Local Bus, Light Rail, Baltimore Metro and MARC)	38
Environmental Stewardship	Travel Demand Management • Number of park-and-ride spaces—MTA Operated • Transit Multipurpose	Transit lots are MTA owned; multipurpose lots are not MTA owned	47
Environmental Stewardship	Transportation Emissions Reduction Measures • MTA College Pass • MTA Commuter Choice Maryland Pass • Transit Store in Baltimore	TERMs and Travel Demand Management strategies support the use of alternatives to the traditional single-occupant vehicle	48
Community Vitality	Transit ridership	Ridership for Local Bus, Light Rail, Baltimore Metro, MARC, Contracted Commuter Bus, and Paratransit & Taxi Access	53
Community Vitality	Annual revenue vehicle miles of MTA service provided	Revenue vehicle miles are defined as each mile for which a transit vehicle is in service and accepting customers	54
Maryland Transportation Authority (MDTA)			
Quality of Service	Overall customer satisfaction of *E-ZPass* customers	Customer satisfaction based on customer satisfaction survey	42
Quality of Service	Percentage of tolls collected electronically	Toll collections by *E-ZPass* and Automatic Vehicle Identification/Total number of toll collections	42
Motor Vehicle Administration (MVA)			
Safety & Security	Percent of Homeland Security REAL ID Act benchmarks achieved	Federal legislation contains 39 benchmarks for states to meet requirements of the federal REAL ID Act	28
Quality of Service	Branch office customer visit time versus customer satisfaction rating	Average visit time plotted against percentage of customers rating their MVA experience as “good” or “very good” (based on quarterly survey of customers)	39
Quality of Service	Alternative service delivery transactions as percent of total transactions	Transactions by alternative services (using a means other than a visit to an MVA branch) / Total transactions	39
Quality of Service	Cost per transaction	Operating costs and capitalized costs / Number of transactions	40
Quality of Service	Percent of information system availability compared to total number of records maintained	Includes availability of data records by type and systems up time	40
Environmental Stewardship	Compliance rate and number of vehicles tested for Vehicle Emissions Inspection Program (VEIP) versus customer wait time	Registered vehicles in non-attainment counties are scheduled for VEIP testing every two years. Compliance rate is the number of vehicles registered in non-attainment counties scheduled for testing / Number of registered vehicles in non-attainment counties tested	46

Appendix: List of Performance Measures by Business Unit

MTP GOAL	PERFORMANCE MEASURE	DEFINITION	PAGE
State Highway Administration (SHA)			
Economic Prosperity	Percent of roadway access permits issued within 21 days or less (after receipt of a complete application package)	Access permits are issued to parties desiring to perform work in the SHA right- of-way and/or for the construction of entrances and public streets connecting to the State roadways	22
Economic Prosperity	User cost savings for the traveling public, including commercial traffic due to incident management	Cost saving calculated using Coordinated Highways Action Response Team (CHART) incident response data	22
Quality of Service	Maryland driver satisfaction rating	Satisfaction rating based on weighted average score for 26 questions	34
Quality of Service	Percentage of the Maryland SHA network in overall preferred maintenance condition	Internal peer review assessment of roadway features entails 30% of the overall SHA total lane miles, resulting in excess of 3,000 on-half mile segments	34
Environmental Stewardship	Percent of compliance on erosion and sediment control ratings	A system of structural and vegetative measures that minimize soil erosion and off-site sedimentation	45
Environmental Stewardship	Total fuel usage of the SHA light fleet	Fuel used by fleet of State-owned cars, dispensed at SHA facilities that contains ethanol (SHA light fleet consists of sedans, SUVs, half-ton pickup trucks and vans that use gasoline or gasoline/ethanol blends)	45
Environmental Stewardship	Travel Demand Management • Number of SHA park-and-ride spaces • Reduction in vehicle miles traveled through park-and-ride usage	SHA operates a number of park-and-ride facilities to support TDM	47
Community Vitality	Percentage of State-owned roadway directional miles within urban areas that have sidewalks and percent of sidewalks that meet Americans with Disabilities Act (ADA) compliance*	On SHA roads where pedestrian access is allowed and within urban areas as defined by the U.S. Census Bureau	55
Community Vitality	Percentage of State-owned roadway centerline miles with a bicycle level of comfort (BLOC) grade "D" or better and number of directional miles improved for bicycle access*	BLOC is an "A" to "F" scale, a formula based on many factors, including outside lane width, the presence of on-street parking, roadway speed, shoulder width and truck percentage, with the greatest driving factors being shoulder width, speed and truck percentage	55

MEASURES SHARED BY BUSINESS UNITS			PAGE
State Highway Administration (SHA) and Motor Vehicle Administration (MVA)			
Safety & Security	Number of bicycle and pedestrian fatalities and injuries on all Maryland roads	Number of bicyclists and pedestrians killed / injured in traffic related crashes in a calendar year, on all Maryland roads including MDTA and locally owned facilities	25
State Highway Administration (SHA), Motor Vehicle Administration (MVA) and Maryland Transportation Authority (MDTA)			
Safety & Security	Annual number of traffic fatalities and personal injuries on all roads in Maryland	The annual number of traffic fatalities and personal injuries on all Maryland roads including MDTA and locally owned facilities (the fatality and personal injury rate is calculated as fatalities and personal injuries per 100 million vehicle miles of travel)	24
State Highway Administration (SHA) and Maryland Transportation Authority (MDTA)			
System Preservation	Percent of roadway miles with acceptable ride quality	Percent of road with acceptable International Roughness Index (IRI) score	30
System Preservation	Number of bridges and percent that are structurally deficient	Number of bridges where at least one major structural element has a condition rating of four or less (on a scale from zero (closed to traffic) to nine (relatively new))	30
Community Vitality	Percent of VMT in congested conditions on freeways/expressways and arterials in Maryland during the PM peak hour	Annual average daily traffic / Number of through lanes	56

Maryland Department of Transportation

"The Maryland Department of Transportation is a customer-driven leader that delivers safe, sustainable, intelligent, and exceptional transportation solutions in order to connect our customers to life's opportunities."

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Hanover, Maryland 21076

This document is prepared pursuant to Transportation Article Section 2-103.1 of the Anotated Code of Maryland.

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