TANGIBLE RESULT #9

Be a Good Steward of Our Environment

MDOT will be accountable to customers for the wise use of resources and impacts on the environment when designing, building, operating and maintaining a transportation system.

RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Sandy Hertz
The Secretary's Office (TSO)

PURPOSE OF MEASURE:
To better communicate MDOT's contribution toward Chesapeake Bay Restoration efforts and improve reporting at the State level.

FREQUENCY:
Semi-Annually

DATA COLLECTION METHODOLOGY:
MDOT TBUs track Bay Restoration project expenditures to be incorporated into Appendix S of the Governor's Annual Budget Book.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.1A
Bay Restoration Program Spending

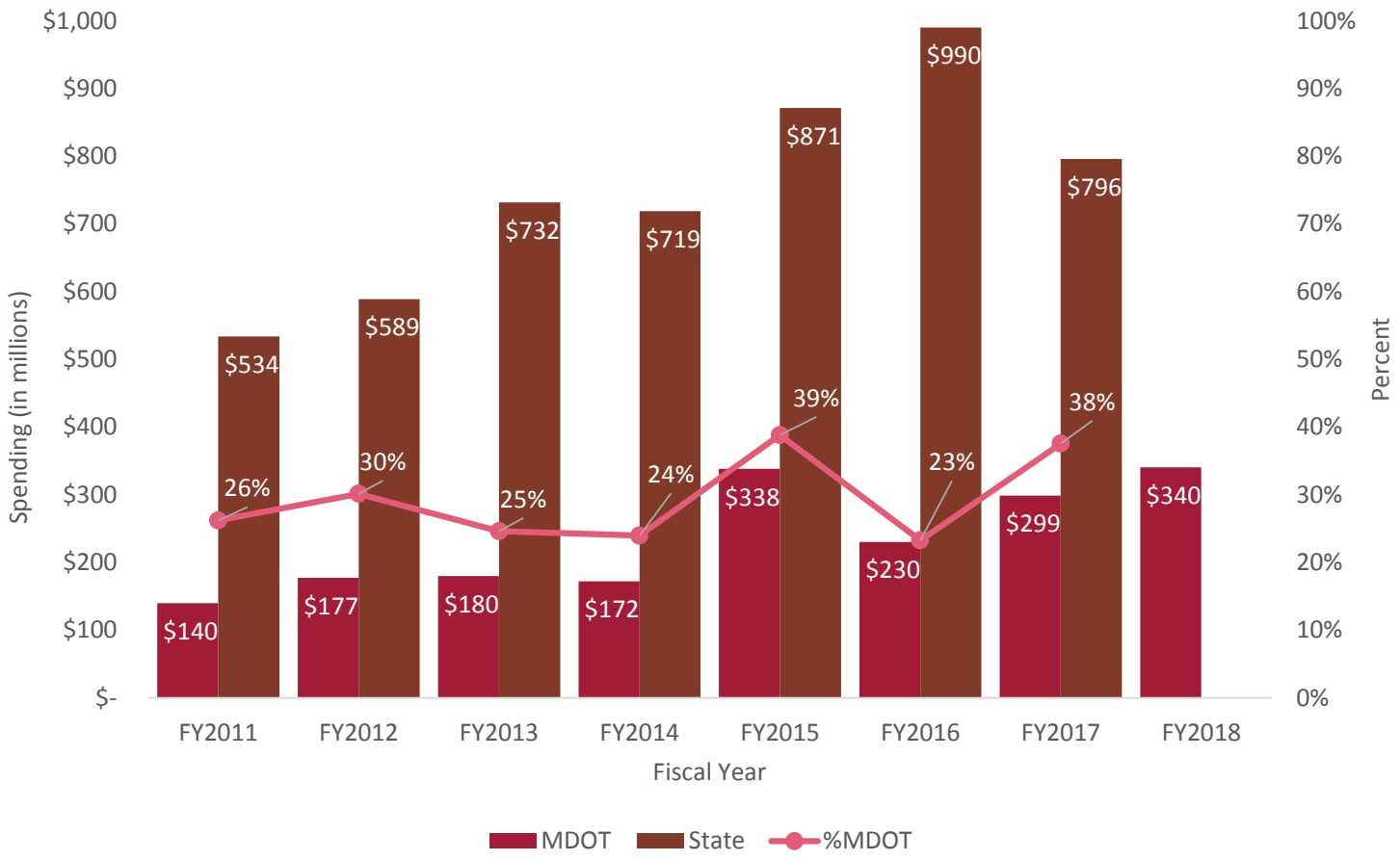
The Chesapeake Bay has been referred to as "Maryland's National Treasure". It provides countless environmental, social, and economic benefits for the citizens of our State. For decades, water quality in the Bay has been impaired by pollution. Maryland, along with Delaware, New York, Pennsylvania, Virginia, West Virginia, and the District of Columbia, is working to address pollution sources entering the Bay.

Along with the impervious surface restoration efforts that are required by the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit, MDOT contributes annually to statewide Chesapeake Bay restoration activities. Since 2011, total spending has been tracked statewide based on 10 restoration categories: land preservation, septic systems, wastewater treatment, urban stormwater, agricultural best management practices (BMPs), oyster restoration, transit and sustainable transportation alternatives, living resources, education and research, and other. This information is shared annually within the Governor's Fiscal Year Budget Highlights document. Historically, MDOT contributions have been incorrectly categorized as transit and sustainable transportation alternatives, which diminished our involvement in urban stormwater, living resources, and other restoration categories. This measure will help quantify our relative contribution to Bay restoration and will improve reporting at a State level.

PERFORMANCE MEASURE 9.1A

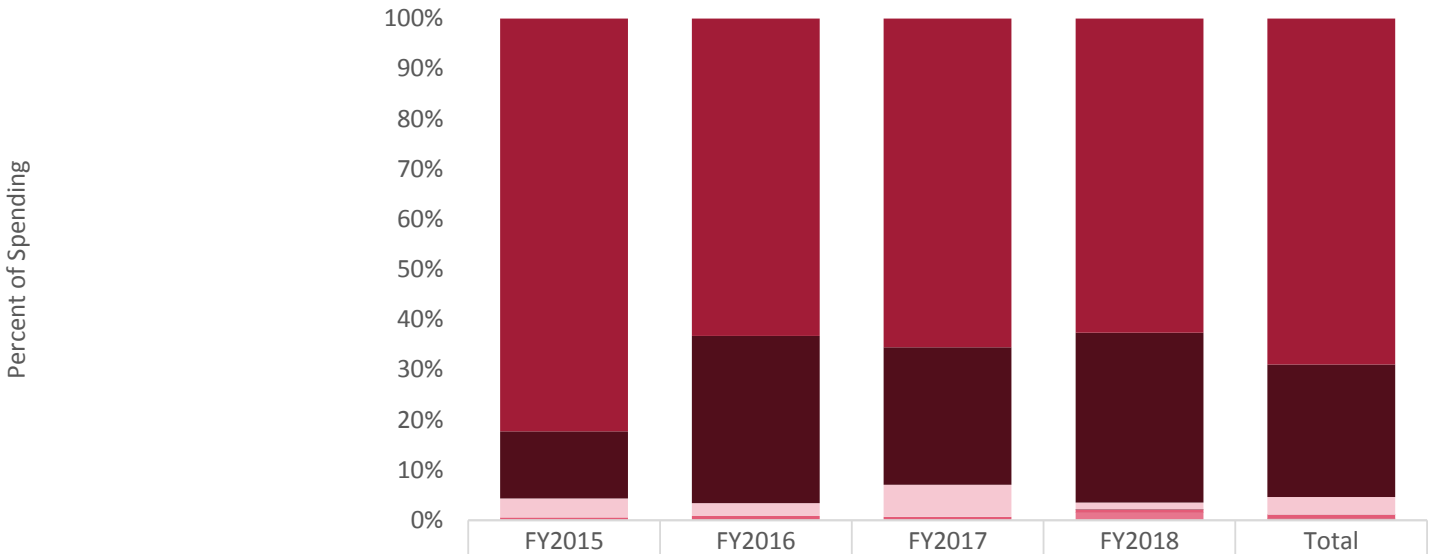
Bay Restoration Program Spending

Chart 9.1A.1: Bay Restoration Program Spending FY2011-FY2018



PERFORMANCE MEASURE 9.1A
Bay Restoration Program Spending

Chart 9.1A.2: Bay Restoration Spending by Category FY2015-FY2018



	FY2015	FY2016	FY2017	FY2018	Total
Transit and Sustainable Transportation Alternatives	$278,347,000	$145,700,000	$195,934,017	$213,055,495	$833,036,512
Urban Stormwater	$45,279,342	$76,842,425	$81,749,053	$115,315,579	$319,186,399
Living Resources	$12,658,000	$5,888,484	$19,265,793	$4,590,994	$42,403,271
Wastewater Treatment	$0	$0	$0	$302,738	$302,738
Land Preservation	$0	$0	$0	$40,000	$40,000
Oyster Restoration	$2,000,000	$2,000,000	$2,000,000	$2,017,000	$8,017,000
Education and Research	$0	$0	$0	$29,748	$29,748
Other	$0	$0	$0	$5,019,499	$5,019,499
Agriculture BMPs	$0	$0	$0	$56,679	$56,679

TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Sonal Ram
State Highway Administration (SHA)

PURPOSE OF MEASURE:
To evaluate the health of the Chesapeake Bay by measuring how well MDOT is achieving compliance with impervious surface restoration as required by the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit.

FREQUENCY:
Annually (in October)

DATA COLLECTION METHODOLOGY:
MDOT is tracking all Bay restoration projects and impervious surface treatment associated with those projects to determine overall progress toward the 20 percent goal during their five-year permit term.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.1B
Water Quality Treatment to Protect and Restore the Chesapeake Bay

The fastest growing source of pollution in the Chesapeake Bay is stormwater runoff. Urbanization intensifies runoff by increasing paved surfaces and decreasing areas where rainfall can seep into the ground. Stormwater runoff increases delivery of pollutants including trash, organic debris, and sediment from impervious areas to urban streams.

Restoration efforts for 20 percent of MDOT's existing impervious surfaces will increase infiltration and reduce stormwater runoff. MDOT uses restoration practices such as installing new and upgrading existing stormwater management facilities, stream restoration, tree planting, and operations like street sweeping and inlet cleaning. This will improve conditions in urban streams, and reduce pollution in the Chesapeake Bay.

Chart 9.1B.1 compares the total sediment reduction accomplished by each TBU. Chart 9.1B.2 compares the total nitrogen and total phosphorus reduction accomplished by each TBU.

Approaching the 20 percent restoration requirements with a holistic One-MDOT strategy. This includes:

- Increased collaboration and data sharing between TBUs;
- Intelligent analysis of cost and restoration strategy to determine the most economical opportunities for impervious restoration across all MDOT; and
- Close coordination and collaboration to ensure all TBUs are adequately tracking and implementing Bay restoration projects and impervious surface treatment.

PERFORMANCE MEASURE 9.1B

Water Quality Treatment to Protect and Restore the Chesapeake Bay

Chart 9.1B.2: Total Nitrogen and Phosphorus Reduction Q4 CY2017-Q3 CY2018

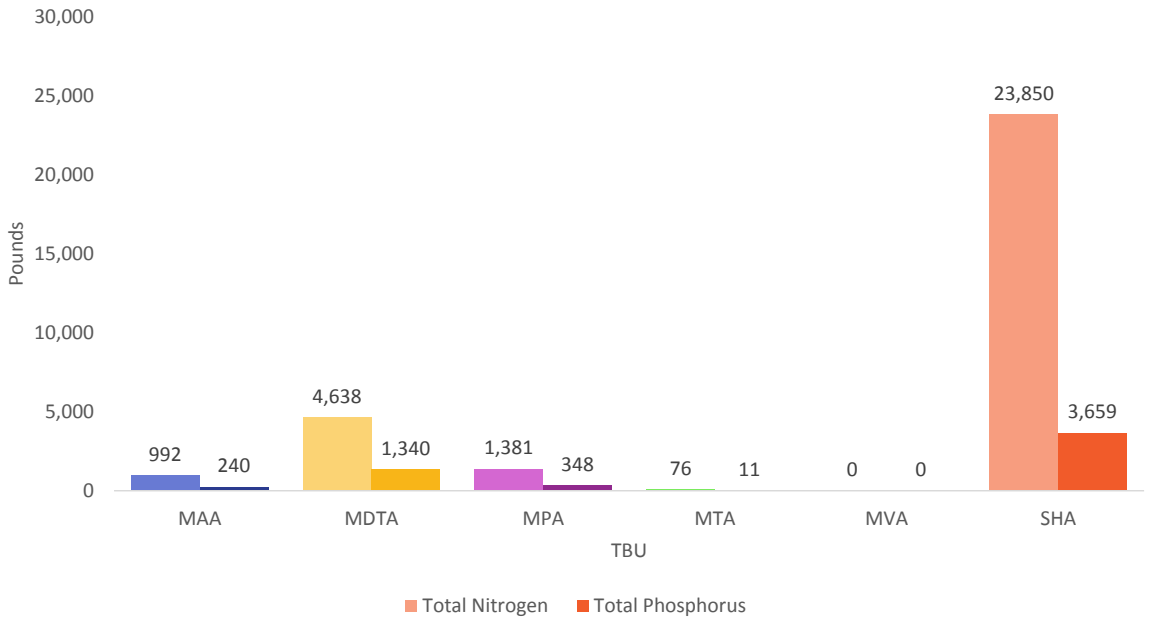
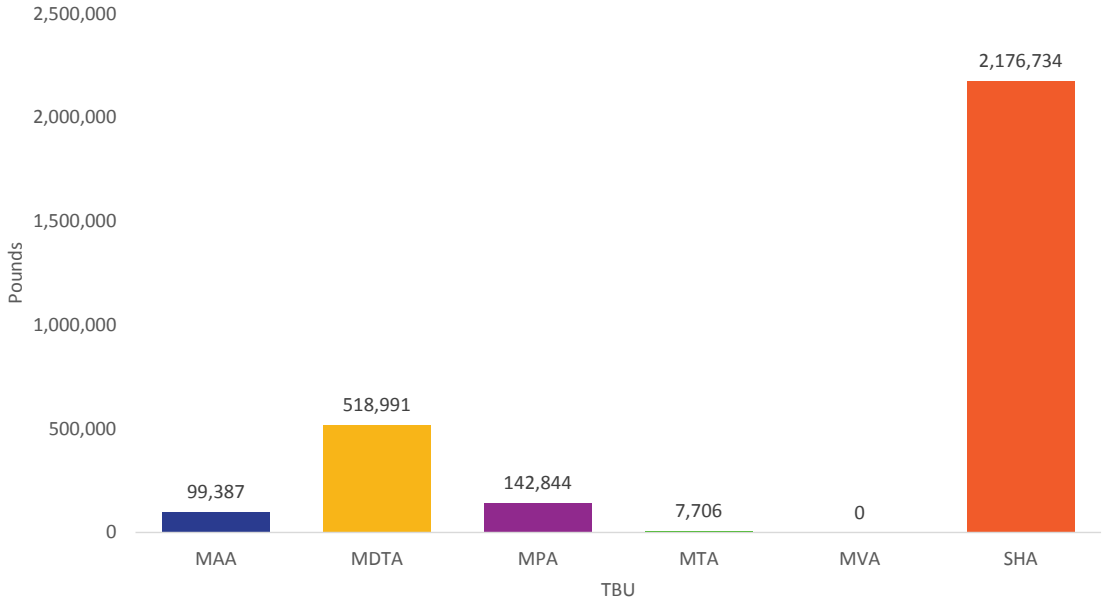


Chart 9.1B.3: Total Suspended Solids Reduction Q4 CY2017-Q3 CY2018



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Mark Williams
Maryland Aviation Administration (MAA)

PURPOSE OF MEASURE:
To measure and track the amount of stormwater pollution reduction achieved from street sweeping and inlet cleaning operational activities

FREQUENCY:
Semi-Annually (January and July)

DATA COLLECTION METHODOLOGY:
Data is collected and reported manually by the TBUs

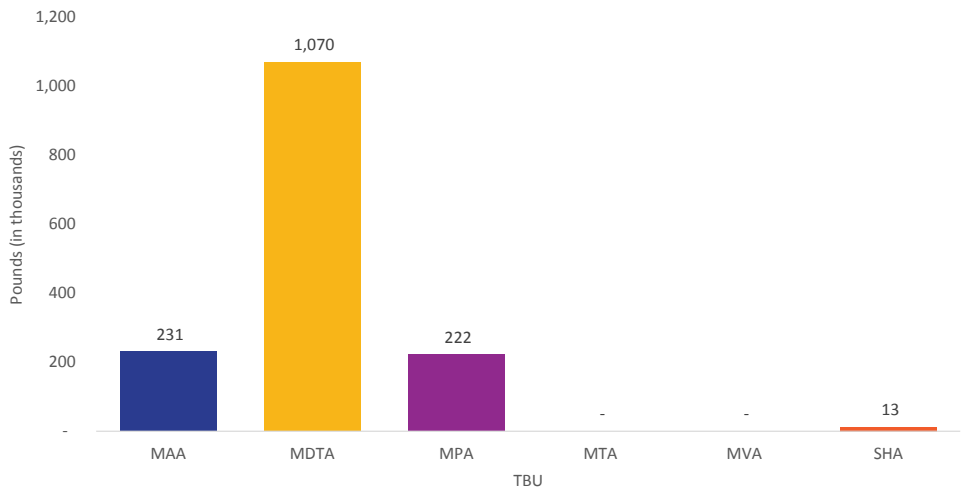
NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.1C
Stormwater Cleanup – Street Sweeping and Inlet Cleaning

Street sweeping and inlet cleaning are operational activities performed by MAA, MPA, SHA, and MDTA. Street sweeping and inlet cleaning remove trash and other debris from roadways, ramp areas, and runways, providing for safe operation of our transportation system. In addition, these activities remove pollutants such as suspended solids (i.e., sediment), nitrogen, and phosphorous from impervious surfaces before they can enter Maryland's rivers, streams, and the Chesapeake Bay.

Street sweeping and inlet cleaning are valuable because they are considered an alternative stormwater treatment by the Maryland Department of Environment (MDE), which allows "Impervious Surface Area Treatment" credits for these ongoing activities. These credits help MDOT meet its 20 percent restoration compliance requirement mandated by the Municipal Separate Storm Sewer (MS4) permits.

Chart 9.1C.1: Total Dry Weight of Street Sweeping Material Collected CY2017



PERFORMANCE MEASURE 9.1C
Stormwater Cleanup – Street Sweeping and Inlet Cleaning

Chart 9.1C.2: Total Nitrogen & Phosphorus Reduction, CY2017

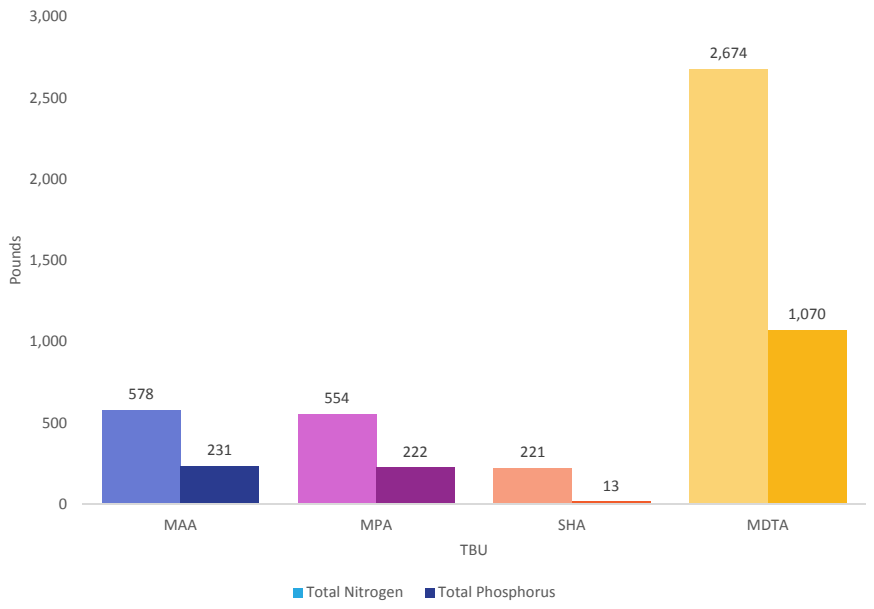
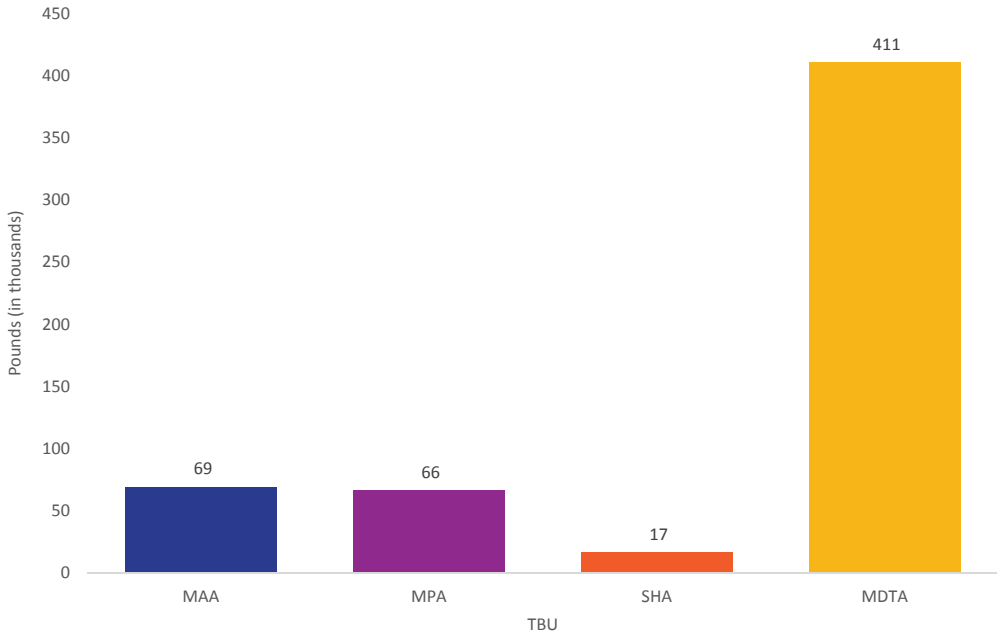


Chart 9.1C.3: Total Suspended Solids Reduction, CY2017



Be a Good Steward of Our Environment

TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Hargurpreet Singh, P.E.
Motor Vehicle Administration (MVA)

PURPOSE OF MEASURE:
To track the percentage of office waste diverted from the landfill or incineration through recycling.

FREQUENCY:
Annually (in April)

DATA COLLECTION METHODOLOGY:
Maryland Department of the Environment All State Agency Recycling (All StAR) reporting.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.2A
Office Waste Recycled

Why this Performance Measure Matters?

Recycling helps protect the environment and reduces the amount of waste sent to landfills. It conserves resources, saves energy, reduces greenhouse gas emissions, and our carbon footprint.

And, it is the right thing to do!

Office Waste Includes:

- Commingled containers (glass, metal, and plastic);
- Glass (fluorescent light tubes, mixed glass containers);
- Metals (mixed cans, and tin/steel cans);
- Paper (corrugated cardboard, mixed paper, shredded paper and newspaper);
- Plastic (mixed plastic bottles, other plastics);
- Electronics; and
- Printer cartridges.

What is the Status of this Performance Measure?

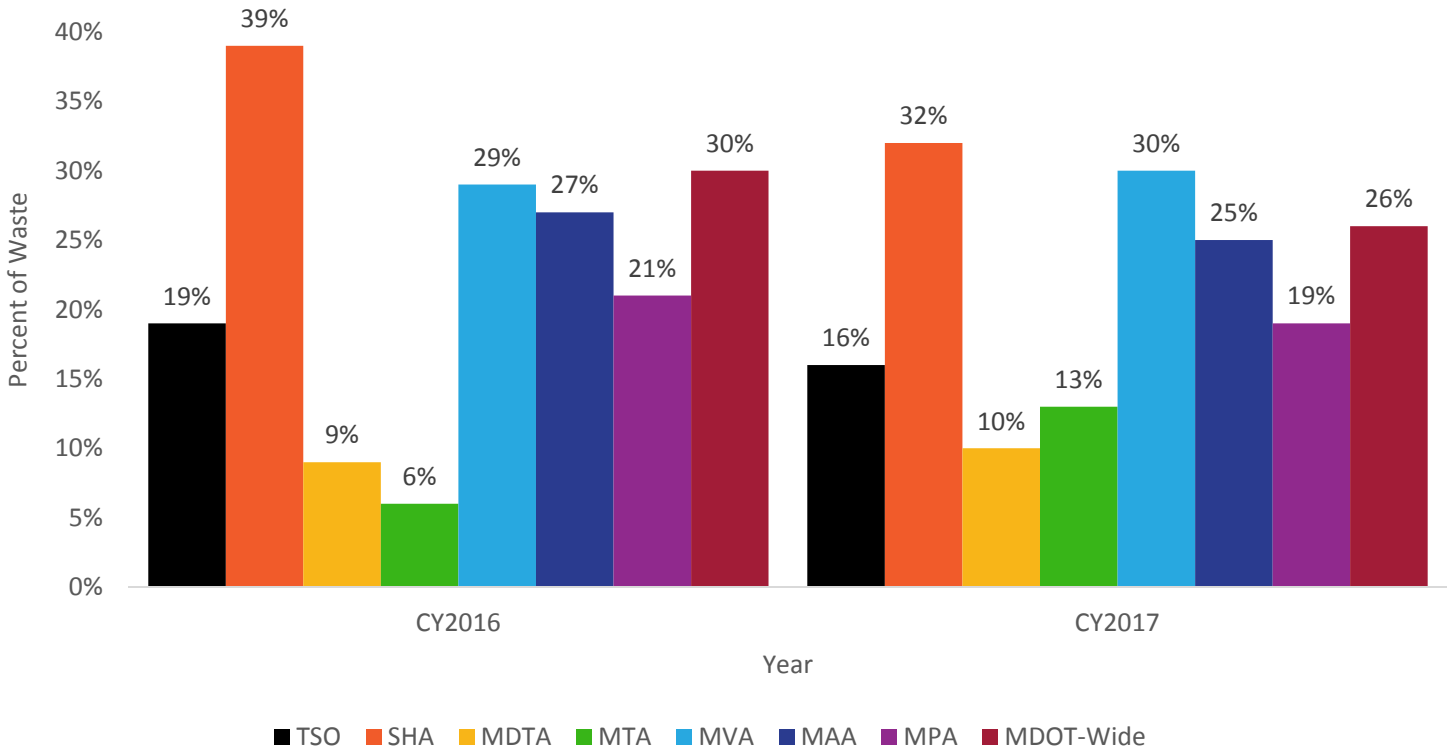
CY	RECYCLED OFFICE WASTE
2016	30%
2017	26%

What is Being Done to Affect Change?

- Continuing awareness training;
- Continuing to evaluate dumpster size and frequency of trash collection services; and
- Single stream recycling.

PERFORMANCE MEASURE 9.2A
Office Waste Recycled

Chart 9.2A.1: Percent of Office Waste Recycled by TBU CY2016-CY2017



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Hargurpreet Singh, P.E.
Motor Vehicle Administration (MVA)

PURPOSE OF MEASURE:
To track the percentage of non-office waste diverted from the landfill or incineration through recycling.

FREQUENCY:
Annually (in April)

DATA COLLECTION METHODOLOGY:
Maryland Department of the Environment All State Agency Recycling (All StAR) reporting.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.2B
Non-Office Waste Recycled

Why this Performance Measure Matters?

Recycling helps protect the environment. It reduces the amount of waste sent to landfills, conserve resources, saves energy, reduces greenhouse gas emissions, and our carbon footprint.

And, it is the right thing to do!

Non-Office Waste Includes:

- Lead-acid batteries (vehicle);
- Compostables (grass, leaves, brush, branches, mixed yard trimmings, food waste, and other);
- Metals (white goods - refrigerators, stoves, washing machines, dryers, water heaters, and air conditioners);
- Animal protein/solid fat;
- Tires;
- Antifreeze;
- Industrial fluids;
- Motor oil;
- Scrap automobiles; and
- Scrap metals.

What is the Status of this Performance Measure?

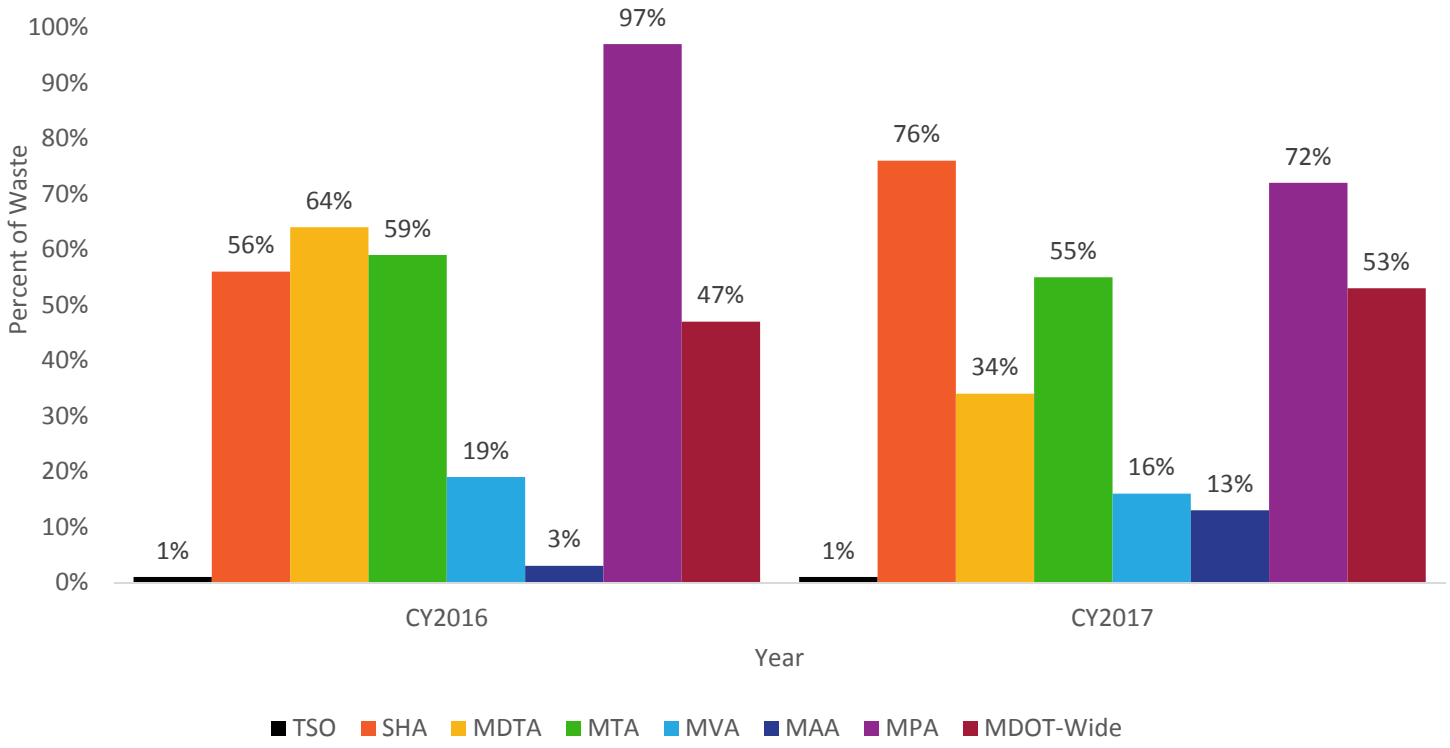
CY	RECYCLED NON-OFFICE WASTE
2016	47%
2017	53%

What is Being Done to Affect Change?

- Continuing awareness training;
- Continuing to evaluate dumpster size and frequency of trash collection services; and
- Single stream recycling.

PERFORMANCE MEASURE 9.2B
Non-Office Waste Recycled

Chart 9.2B.1: Percent of Non-Office Waste Recycled by TBU CY2016-CY2017



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Chandra Chithaluru
Maryland Port Administration (MPA)

PURPOSE OF MEASURE:
To reduce TBU impact on solid waste landfill through recycling/ reuse of metal, asphalt and concrete.

FREQUENCY:
Annually (in April)

DATA COLLECTION METHODOLOGY:
The data collection methodology will include disposal weights (via bill of ladings) by TBUs' Facility Maintenance and Engineering Departments. The data are reported on the annual Non-Maryland Recycling Act Report.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.2C

Recycled/Reused Materials from Maintenance Activities and Construction/ Demolition Projects

MDOT is committed to reducing its impact on solid waste, non-hazardous landfills, potentially resulting in reduction of the number of waste disposal facilities in Maryland as stated in the Maryland Department of the Environment's "Zero Waste" Action Plan. The TBUs established plans to recycle and/or reuse their solid waste: metal, asphalt and concrete. These materials are to be collected, weighed and recycled/reused. Benefits include saving energy and natural resources, preserving the capacity of landfills, reducing waste disposal costs, generating revenue for materials and reducing pollutants generated by the landfill process.

Due to the number and type construction/demolition activities and projects, we recognize that there may be variability among reporting periods and TBUs, but positive change can still occur by implementing some or all the following:

- Establish central data collection mechanisms and procedures in each TBU;
- Require contractors to segregate, collect, weigh and recycle these materials and provide information to each TBU; and
- Ensure commitment to this goal and its positive impact on the environment by making employees and contractors aware of this performance measure.

PERFORMANCE MEASURE 9.2C

Recycled/Reused Materials from Maintenance Activities and Construction/Demolition Projects

Chart 9.2C.1: Recycled/Reused Materials from Maintenance Activities & Construction/Demolition Projects CY2015-CY2017

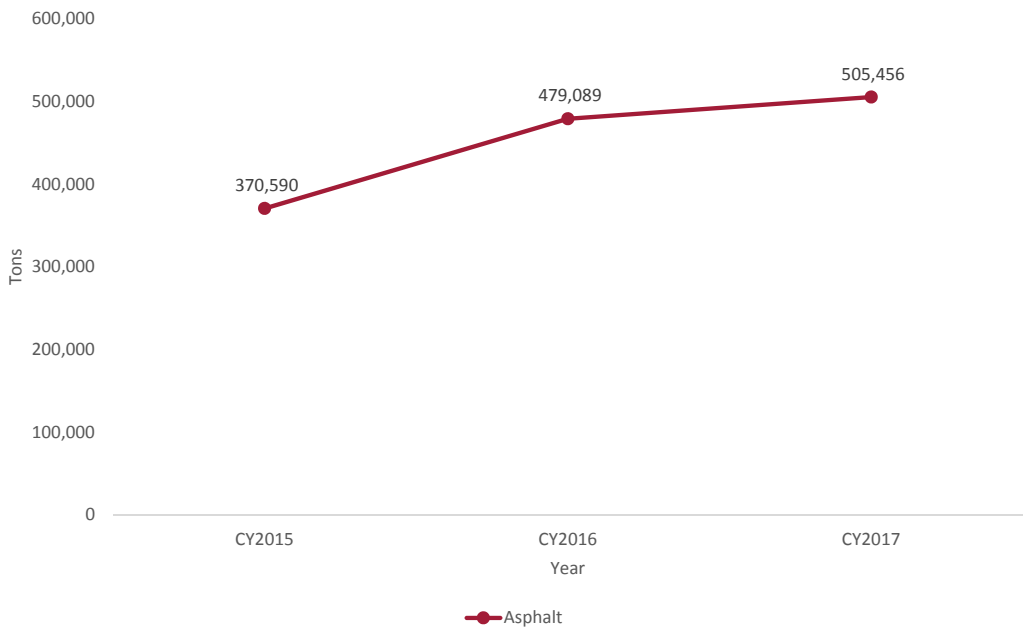
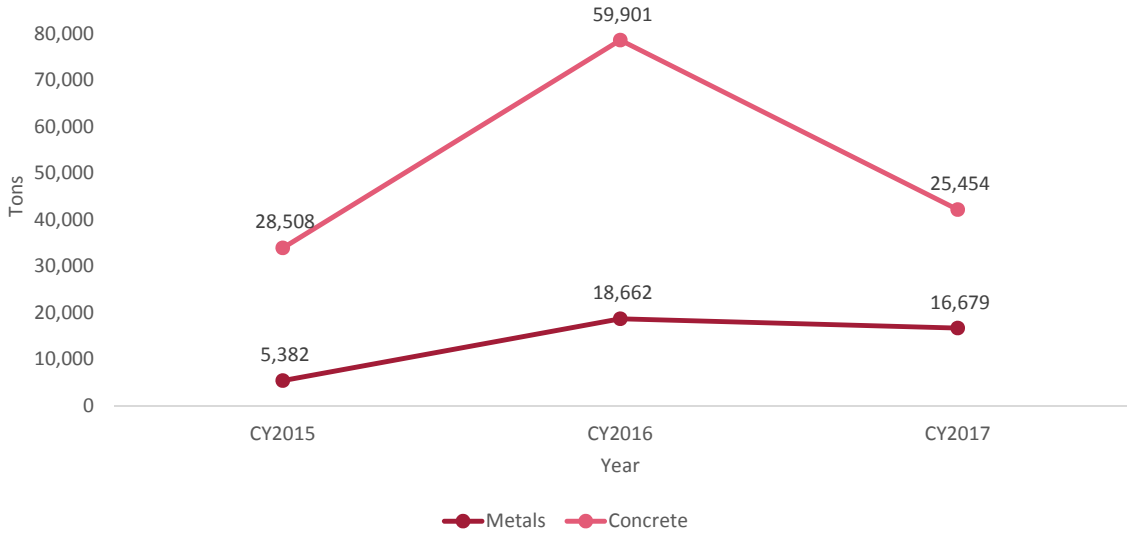


Chart 9.2C.2: Recycled/Reused Materials from Maintenance Activities & Construction/Demolition Projects CY2015-CY2017



TANGIBLE RESULT DRIVER:
Dorthy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Robert Frazier
Maryland Transit Administration (MTA)

PURPOSE OF MEASURE:
To determine the positive impact MDOT has on the Statewide litter problem and the cost associated with the collection efforts.

FREQUENCY:
Semi-Annually (April and October)

DATA COLLECTION METHODOLOGY:
Data collection methodology will be limited to polling of the TBUs that gather data from various sources.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.2D
Litter Pickup

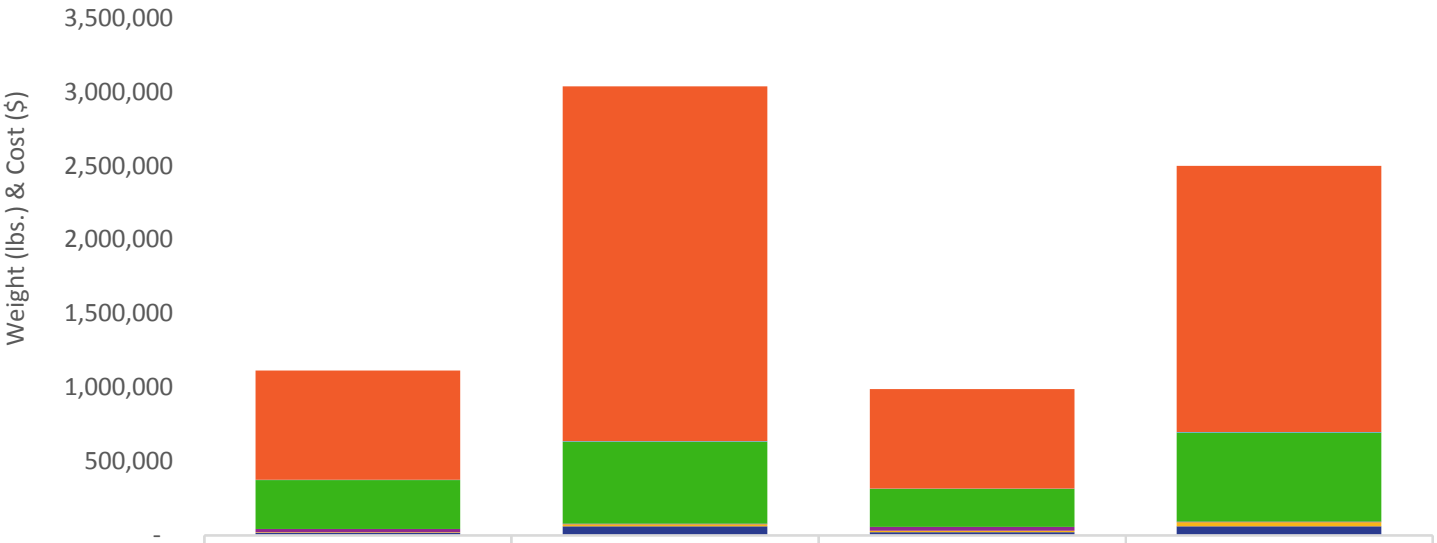
Litter has been a persistent problem world-wide. MDOT is focusing on litter across its transportation system. Litter has multiple effects not only on the cleanliness of transportation routes and transportation equipment, but public perception of the system and the environment as well.

Litter, an environmental pollutant, has a visible macro effect clogging stormwater conveyances and streams, and wildlife ingests undigestible litter. Unseen micro effects are caused by leached chemicals from litter into the environment. The most recent litter-caused environmental issue is the creation of nano-plastic which is ingested at the smallest level of the food chain and accumulates up through the chain.

Each MDOT TBU has differing litter issues and methods to manage litter. While all the TBUs have facilities that accumulate litter from internal sources, such as open dumpsters or overfull trash receptacles, wind blown litter contributes to the accumulation. SHA addresses roadside litter with internal forces, correctional personnel, and Adopt a Highway efforts. MPA manages a "trash wheel" helping to clean up the Baltimore inner harbor waterway. MAA must keep litter from the runways so that aircraft are not damaged. MDTA and MTA remove litter from tunnels.

PERFORMANCE MEASURE 9.2D
Litter Pickup

Chart 9.2D.1: Litter Pickup Weight and Cost Q2-Q3 CY2018



	Q2 CY2018		Q3 CY2018	
	Pounds	Cost	Pounds	Cost
SHA	739,062	$2,400,000	673,181	$1,800,000
MVA	1,620	$3,976	1,620	$3,976
MTA	331,020	$555,087	257,820	$601,810
MPA	21,000	$3,600	25,381	$3,600
MDTA	5,649	$14,348	10,969	$27,861
MAA	17,024	$61,115	21,049	$61,592

TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Paul Truntich, Jr.
Maryland Transportation Authority (MDTA)

PURPOSE OF MEASURE:
To track overall fuel economy of fleet vehicles and ensure better air quality through the use of State vehicles. It is important to track miles per gallon in a meaningful manner to ensure that State vehicles are fuel efficient and not detrimental to our State air quality. Fuel economy data will be used to evaluate driving patterns as well as when the procurement of new fleet vehicles is considered.

FREQUENCY:
Annually (in April)

DATA COLLECTION METHODOLOGY:
Fleet MPG data will be obtained from the State of Maryland's fuel service vendor.

NATIONAL BENCHMARK:
N/A

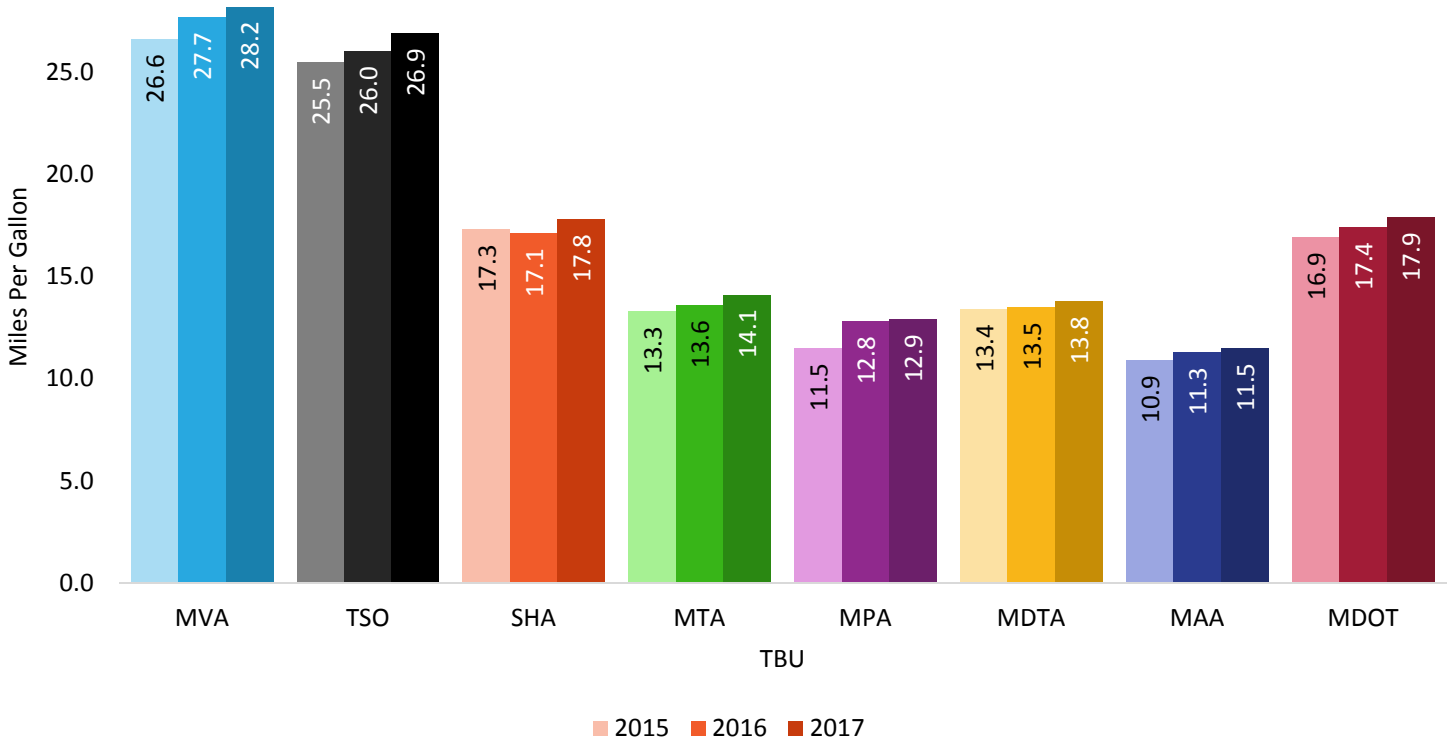
PERFORMANCE MEASURE 9.3A
Fuel Efficiency: Miles Per Gallon

Reduced fuel costs and conservation of petroleum-based resources are the direct results of a more fuel-efficient fleet (as determined through increases in vehicle miles per gallon [MPG] calculations). Efforts with Mansfield Oil Company (statewide fueling vendor) have resulted in developing a means of tracking MPG data for our light-duty fleet throughout all TBUs. MPG data for CY2015 thru CY2017 has been calculated and presented on Chart 9.3A.1. In the three years of data presented, MDOT's fuel efficiency has increased by 1.0 MPG from 2015 (16.9 MPG) to 2017 (17.9 MPG). Vehicle replacement practices represent the largest factor affecting change to this measure. At pre-determined age or mileage thresholds, our fleet vehicles are replaced. Since the presumption is that newer models are more fuel efficient than their predecessors, MPG calculations for each TBU and the Agency as a whole should increase from year-to-year through fleet replacement. However, in addition to fleet replacement, strategies such as encouraging carpooling to meetings and other functions and modifying State vehicle purchasing contract requirements are being evaluated as additional means of improving fleet MPG.

PERFORMANCE MEASURE 9.3A

Fuel Efficiency: Miles Per Gallon

Chart 9.3A.1: MDOT TBU Light-Duty Vehicle Average MPG CY2015-CY2017



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Paul Truntich, Jr.
Maryland Transportation Authority (MDTA)

PURPOSE OF MEASURE:
To track overall fuel consumption of fleet vehicles as well as fixed-equipment in an effort to use less of our resources with State vehicles and equipment. Consumption patterns will be evaluated for improving fuel efficiency and shifting towards use of renewable fuels.

FREQUENCY:
Annually (in October)

DATA COLLECTION METHODOLOGY:
Fleet vehicle data will be obtained from the State of Maryland's fuel service vendor. Fixed-equipment data will be supplied from fleet and facility managers at the TBUs.

NATIONAL BENCHMARK:
N/A

PERFORMANCE MEASURE 9.3B
Fuel Efficiency: Total Gallons Consumed

Analyzing fuel consumption patterns enables fleet and facility managers to budget more effectively and use resources more efficiently. This data also will be beneficial as fleet acquisition purchases are considered and facility heating upgrades are considered. Additionally, identifying opportunities for reducing fuel consumption not only benefits the environment via resource conservation and reduced emissions, but also results in true cost-savings through reduced fuel costs.

Ultra-low sulfur diesel continues to be the most consumed fuel and demonstrates a steady increase for fiscal years FY2014 – FY2018 with MTA utilizing the vast majority. During the reporting period, miles driving by MTA busses increased by over 3.5 million miles (increased miles driven = increased consumption).

Heating oil consumption has steadily decreased from FY 14 to FY 18. The decrease can be attributed to several factors: replacement of oil-burning equipment with natural gas; modifications to policies when facility managers 'change-over' from cooling to heating season as well as seasonal temperature variations.

Furthermore, the inverse relationship between biodiesel and gasoline continued its trend in FY2018 as fleet managers continued to transition from diesel to gasoline powered vehicles.

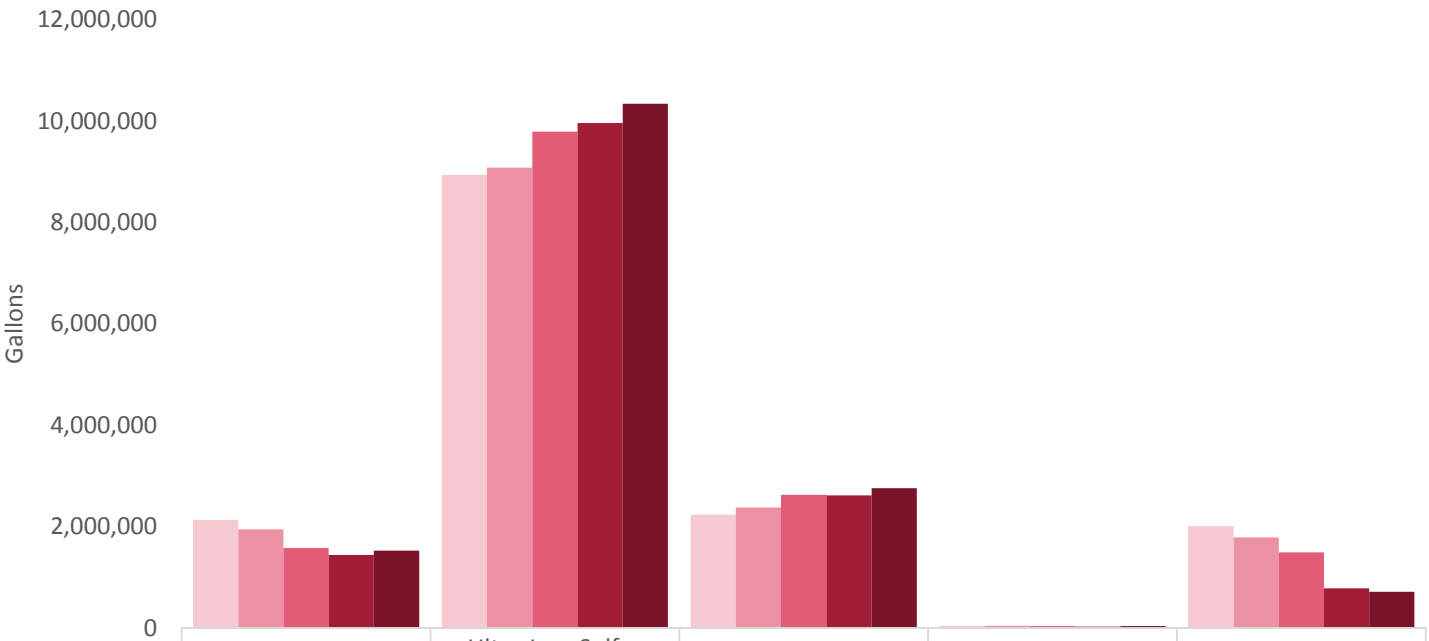
The consumption of E-85 continued its flat trend in FY2018. As this is a renewable energy source, the desired outcome would be to achieve an overall increase in consumption. As an agency, MDOT needs to evaluate its overall commitment towards E-85 and possibly institute an overarching policy regarding its use throughout the TBUs.

NOTE: A significant correction to the data presented in this measure occurred in October 2018 to address under reporting and double reporting of some fuel types previously provided by MTA.

PERFORMANCE MEASURE 9.3B

Fuel Efficiency: Total Gallons Consumed

Chart 9.3B.1: Total Gallons of Fuel Consumed FY2014-FY2018



	Biodiesel	Ultra-Low Sulfur Diesel	Gasoline	E-85	Heating Oil
FY 2014	2,136,296	8,938,557	2,237,431	46,725	2,011,236
FY 2015	1,947,374	9,078,235	2,377,930	47,025	1,785,087
FY 2016	1,577,631	9,789,665	2,628,437	38,745	1,490,472
FY 2017	1,440,903	9,963,079	2,614,529	28,994	782,620
FY 2018	1,524,695	10,338,386	2,759,007	37,664	714,015

TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Laura Rogers
The Secretary's Office (TSO)

PURPOSE OF MEASURE:
To reduce our consumption of utility generated electricity through efficiency measures and renewable energy sources.

FREQUENCY:
Quarterly

DATA COLLECTION METHODOLOGY:
Data for electricity usage is collected using EnergyCAP, Maryland's comprehensive utility management database.

NATIONAL BENCHMARK:
American Council for an Energy Efficient Economy ranked Maryland number 10 in the 2017 State Energy Efficiency Scorecard. Massachusetts was rated number 1.

PERFORMANCE MEASURE 9.3C
Utility Electricity Use

Reducing our consumption of utility electricity through energy efficiency measures and use of renewable energy can save Maryland taxpayers money and reduce harmful air emissions while also helping Maryland meet its clean energy and greenhouse gas reduction goals.

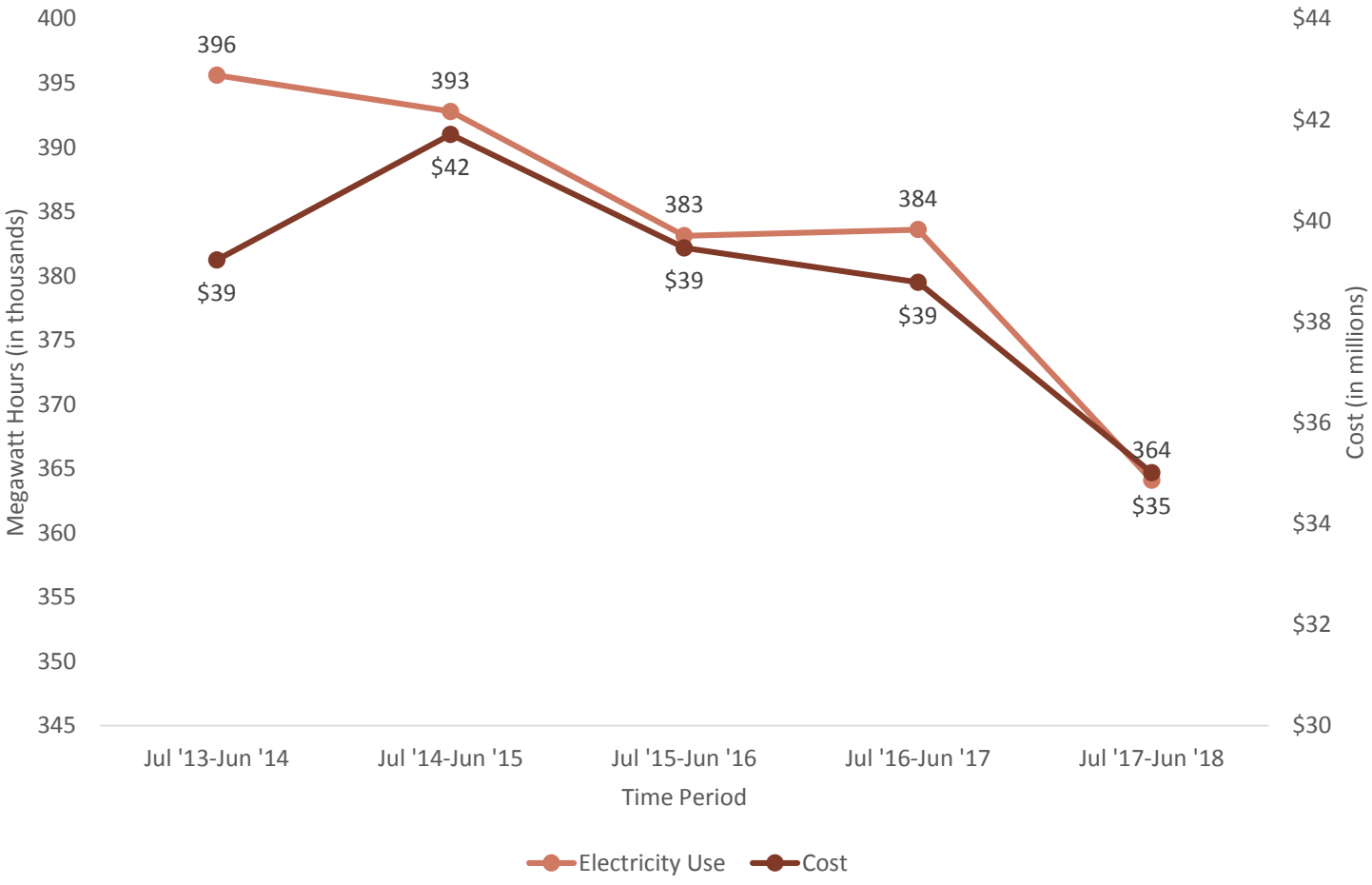
The desired trend for utility electricity use and cost is to decrease. Electricity use and cost during the July 2017 – June 2018 rolling 12-month period decreased by 20,000 megawatt hours and $4 million, as compared to the previous rolling 12-month period (July 2016 – June 2017).

MDOT is undertaking many strategies to increase energy efficiency. Each TBU has completed a comprehensive Energy Plan that details its energy consuming entities, existing and future energy conservation strategies, and future energy conservation goals. Many of the energy conservation measures MDOT implements also realize secondary benefits, such as improved lighting quality, lower operation and maintenance expenses, increased life span of equipment, improved indoor air quality, and enhanced tenant comfort.

In 2017, MDOT established an Energy Managers Workgroup with representatives from all TBUs that meets bimonthly to discuss current trends and challenges, share best practices, and determine ways to efficiently leverage MDOT resources.

PERFORMANCE MEASURE 9.3C
Utility Electricity Use

Chart 9.3C.1: Total MDOT Utility Electricity Use and Cost Q3 CY2013-Q2 CY2018 (Rolling 12-Month)



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Laura Rogers
The Secretary's Office (TSO)

PURPOSE OF MEASURE:
To reduce our consumption of utility electricity through use of renewable energy sources.

FREQUENCY:
Quarterly

DATA COLLECTION METHODOLOGY:
Data for renewable energy sources collected from Pepco Energy Services ABB Plant Portfolio Manager and from TBU Energy Managers.

NATIONAL BENCHMARK:
Renewable Energy Consumption as a share of state total (2014): Oregon, 49.3%; Washington, 47.1%; Maine, 38.3%

PERFORMANCE MEASURE 9.3D
Renewable Energy Generation

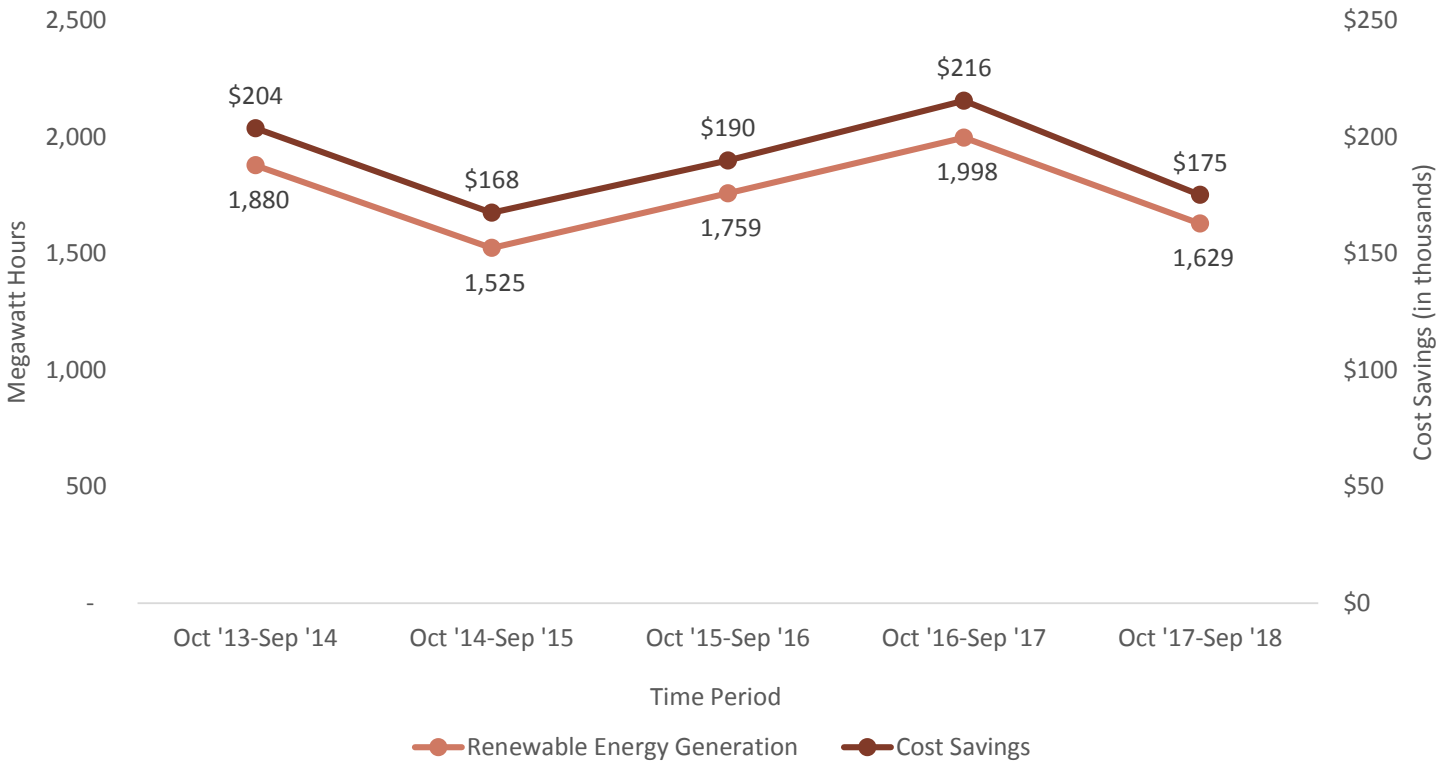
Reducing our conventional energy consumption through energy efficiency measures and use of renewable energy can generate revenue, save Maryland taxpayers money, and reduce harmful air emissions while also helping Maryland meet its clean energy and greenhouse gas reduction goals.

The desired trend for renewable energy generation and cost avoidance is to increase. Renewable energy generation and cost avoidance during the October 2017 – September 2018 rolling 12-month period decreased by 369 megawatt hours and $41,000 as compared to the previous rolling 12-month period (October 2016 – September 2017). The decrease was due to the significant amount of rain Maryland received during the summer of 2018.

MDOT released a Renewable Energy Development Request for Proposal on June 20, 2017, and received proposals on August 17, 2017. MDOT recommended award to six Master Contractors. The Board of Public Works approved the project on February 7, 2018. MDOT is evaluating ~35 locations throughout the State for development under Phase I of the project.

PERFORMANCE MEASURE 9.3D
Renewable Energy Generation

Chart 9.3D.1: Total MDOT Renewable Energy Generation and Cost Savings Q4 CY2013-Q3 CY2018 (Rolling 12-Month)



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Colleen Turner
The Secretary's Office (TSO)

PURPOSE OF MEASURE:
To increase EV adoption throughout the State of Maryland.

FREQUENCY:
Quarterly

DATA COLLECTION METHODOLOGY:
EVSE data will be collected from the National Renewable Energy Laboratory Alternative Fueling Station Locator quarterly.

EV registration data will be collected monthly from MVA.

NATIONAL BENCHMARK:
California, 1.5 million zero-emission vehicles (ZEVs) by 2025 (4.2% of fleet)

New York, 10,000 charging stations by 2021, 800,000 EVs by 2025 (6.1% of fleet)

PERFORMANCE MEASURE 9.4A

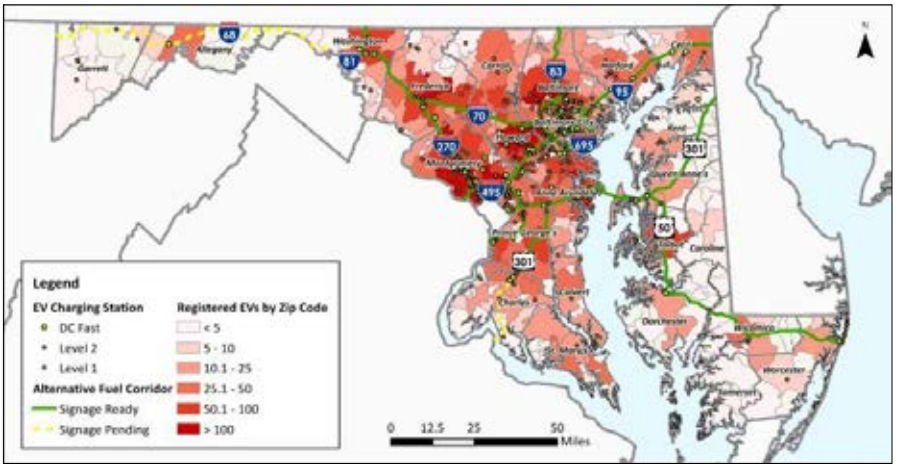
Publicly Available Electric Vehicle Charging Infrastructure & Total Electric Vehicles Registered in Maryland

The widespread introduction of Electric Vehicles (EVs) into the light-duty fleet can have significant benefits, including the reduction of fossil fuel consumption, resulting in decreased emissions of greenhouse gases (GHG) and other harmful air pollutants. Vehicle technology improvements, including EV technology, will be critical to reducing air pollution in Maryland and helping the State meet its environmental goals.

While the State has made significant progress in the past several years, our goals have been some of the most ambitious in the country from the beginning: 60,000 EVs by 2020, approximately 300,000 by 2025 (6.1% of fleet), and the infrastructure to support these numbers.

The number of EVs registered in Maryland has increased by over 9% since the previous quarter to nearly 15,000 EVs. Also, over the past two years (Q3 CY2016 – Q3 CY2018), the number of EVs registered in Maryland has almost doubled (94% increase).

The number of EV charging outlets in Maryland has increased by over 6% since the previous quarter to almost 1,459 outlets. Also, over the past three years (Q3 CY2015 – Q3 CY2018), the number of EV charging outlets in Maryland has increased by over 35% including an 83% increase in the number of DC fast charging outlets publicly available.



PERFORMANCE MEASURE 9.4A

Publicly Available Electric Vehicle Charging Infrastructure & Total Electric Vehicles Registered in Maryland

Chart 9.4A.1: Electric Vehicles Registered in Maryland Q2 CY2016-Q3 CY2018

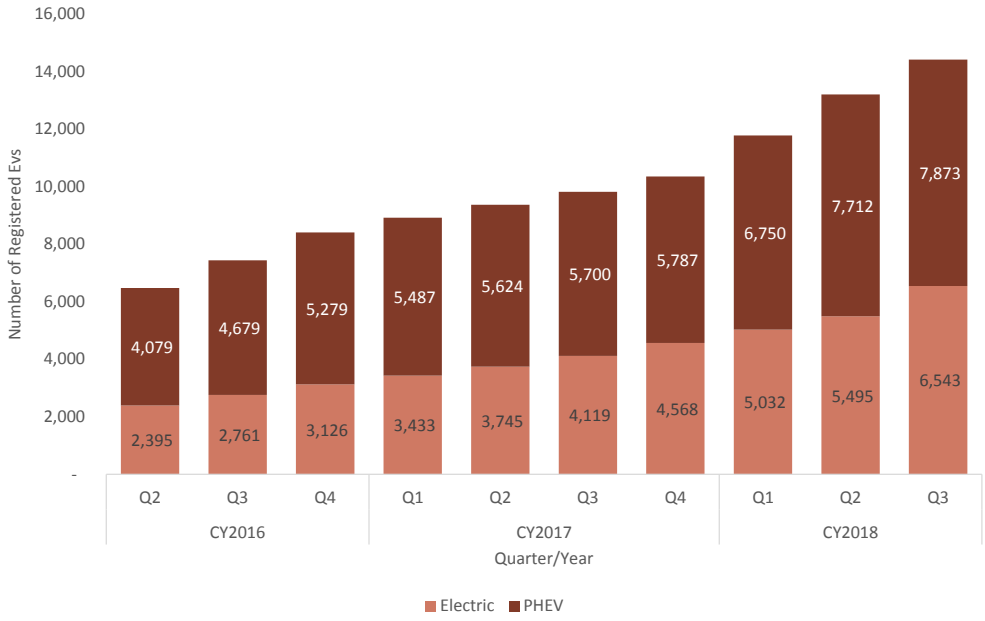
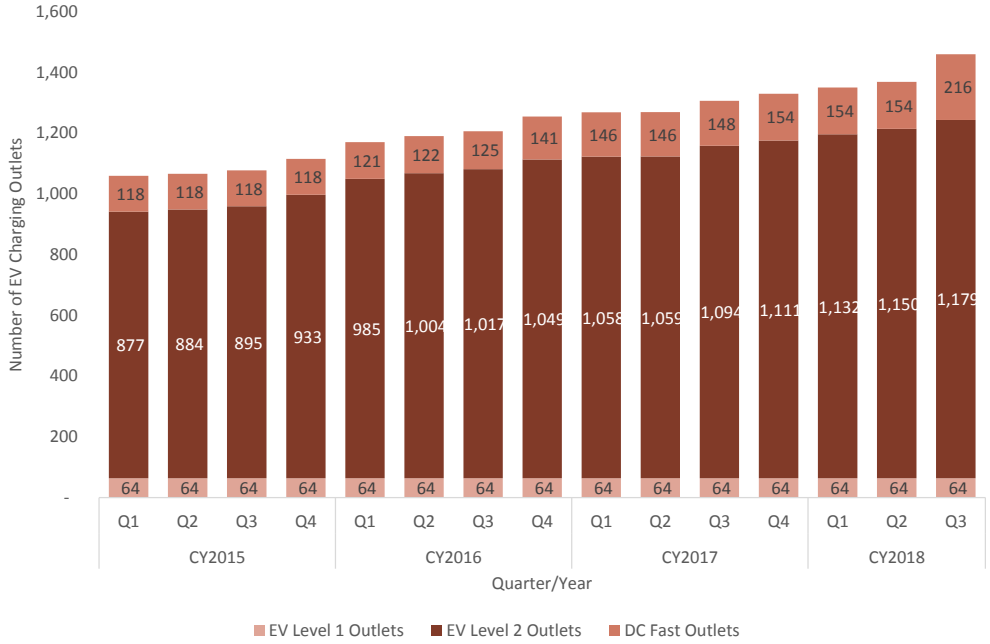


Chart 9.4A.2: Electric Vehicle Charging Outlets Q1 CY2015-Q3 CY2018



TANGIBLE RESULT DRIVER:
Dorothy Morrison
The Secretary's Office (TSO)

PERFORMANCE MEASURE DRIVER:
Colleen Turner
The Secretary's Office (TSO)

PURPOSE OF MEASURE:
To reduce our emissions through efficiency measures and renewable energy sources.

FREQUENCY:
Quarterly

DATA COLLECTION METHODOLOGY:
Data for electricity usage is collected using EnergyCAP, the State of Maryland's comprehensive utility management database. Fleet vehicle data is obtained from the State of Maryland's fuel service vendor. Fixed-equipment data is supplied from fleet and facility managers at the TBUs.

NATIONAL BENCHMARK:
Washington D.C., reduce GHG emissions from 2006 levels 50% by 2032, 80% by 2050

New York, reduce GHG emissions from 1990 levels 40% by 2030, 80% by 2050

California, reduce GHG emissions from 1990 levels 80% by 2050

PERFORMANCE MEASURE 9.4B
Air Quality Emissions

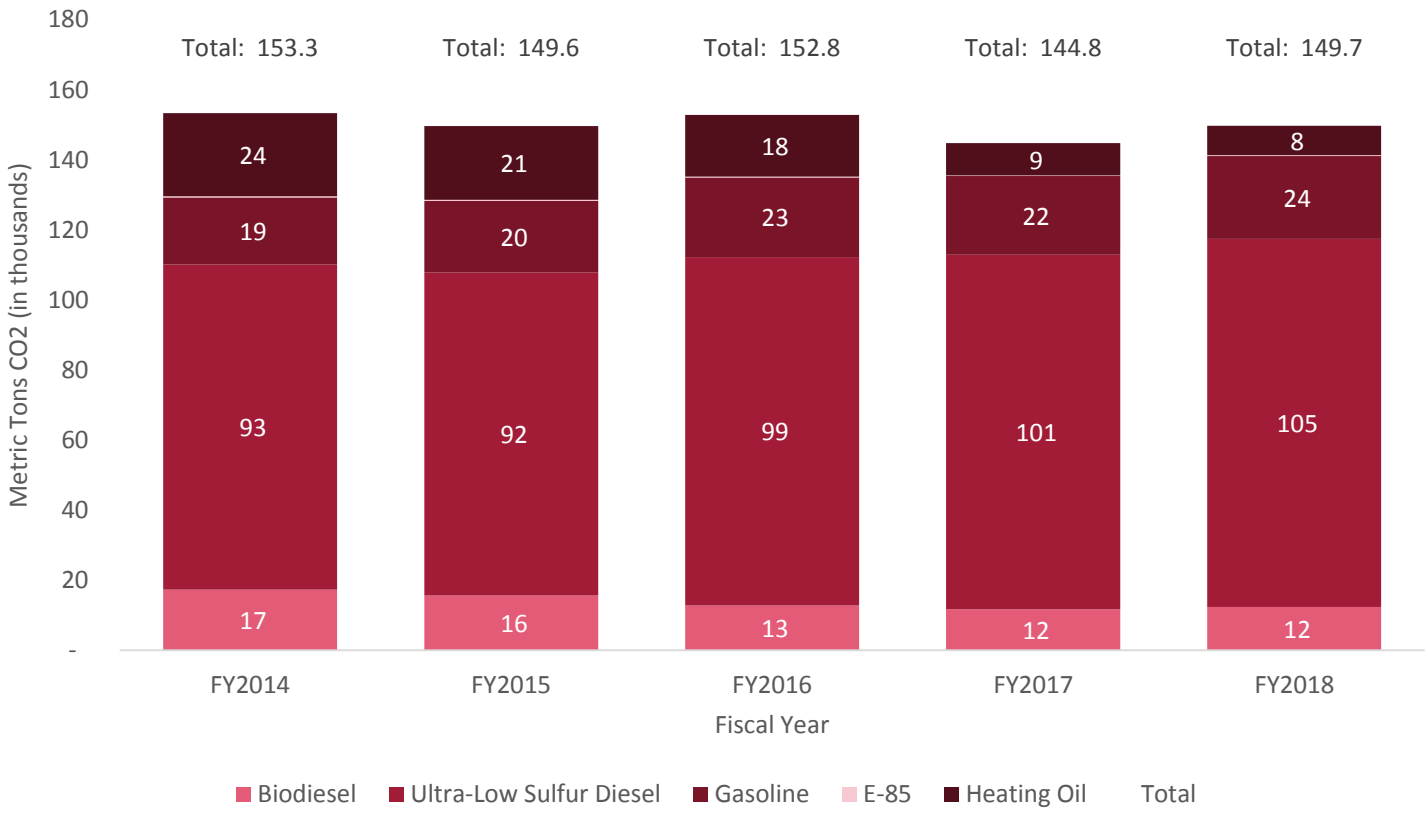
Maryland has made substantial progress in combating air pollution and greenhouse gas (GHG) emissions, with transportation policies and investments playing a key role in these improvements. MDOT is committed to improving air quality and reducing GHG emissions by reducing energy use through more efficient vehicles and building materials, as well as switching to cleaner fuels and renewable energy.

The desired trend for emissions from fuel consumption is to decrease. While CO2 emissions during FY2018 increased slightly from FY2017 (about 5,000 metric tons or 0.03%) due to an increase in fuel consumption, CO2 emissions have decreased by 3,500 metric tons since FY2014.

The desired trend for emissions from utility electricity is to decrease. CO2 emissions during the July 2017 – June 2018 rolling 12-month period decreased by almost 58,000 metric tons (nearly 25%) as compared to the previous rolling 12-month period (July 2016 – June 2017). Over the past five 12-month periods, CO2 emissions have decreased by about 65,000 metric tons.

PERFORMANCE MEASURE 9.4B
Air Quality Emissions

Chart 9.4B.1: CO2 Emissions per Year by Fuel Type FY2014-FY2018



PERFORMANCE MEASURE 9.4B
Air Quality Emissions

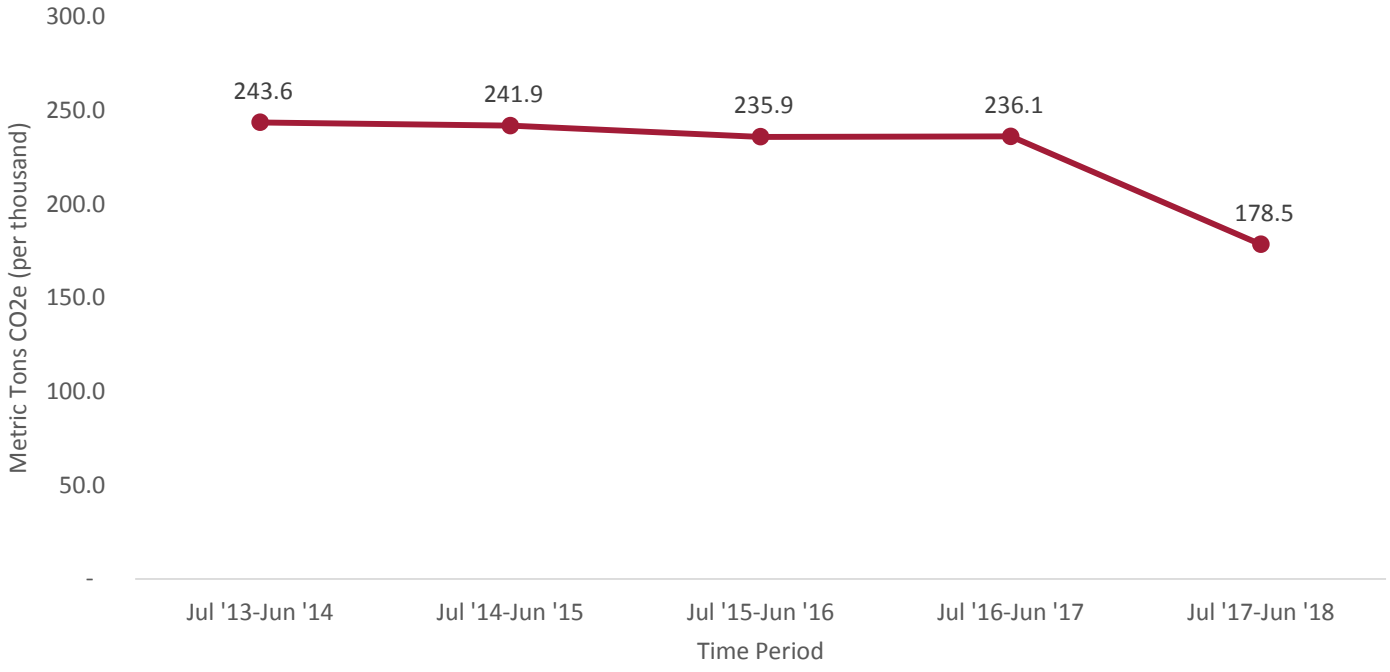



Chart 9.4B.2: CO2e Emissions from MDOT Electricity Use Q3 CY2013-Q2 CY2018 (Rolling 12-Month)