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# **Maryland Emergency Medical System Operations Fund Fiscal 2021 Budget Overview**

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**Department of Legislative Services  
Office of Policy Analysis  
Annapolis, Maryland**

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*Analysis of the FY 2021 Maryland Executive Budget, 2020*

## **Program Description**

Funding for Maryland’s emergency medical services (EMS) system is provided from a variety of State, local, and volunteer sources. Annual State budget support for EMS is provided from the Maryland Emergency Medical System Operations Fund (MEMSOF). The source of revenue for MEMSOF is a biennial surcharge of \$29 on motor vehicle registrations for certain classes of vehicles, as specified in Section 13-954 of the Transportation Article. Funding from a \$7.50 moving violation surcharge has also been credited to MEMSOF since fiscal 2014. Interest earned annually on the fund balance is credited to the fund.

## **Uses of MEMSOF**

As stated in Section 13-955 of the Transportation Article, the money in MEMSOF shall be used solely for the following components of Maryland’s EMS program:

- ***Maryland State Police Aviation Command (MSPAC):*** The mission of MSPAC is to protect and improve the quality of life through the airborne delivery of emergency medical, law enforcement, homeland security, and search and rescue services. Special funds from MEMSOF support the medically oriented mission of MSPAC, as required by statute. General funds support law enforcement and homeland security functions. The funding split for MSPAC has remained at 80% in special funds and 20% in general funds since fiscal 2003. The funding split is based on the ratio of medically oriented functions to nonmedical functions; search and rescue missions have been considered medically oriented functions since fiscal 2007. According to the Governor’s fiscal 2021 Managing for Results submission, MSPAC estimates that medically oriented missions accounted for an average of 81.1% of total operational activities since calendar 2014. The fiscal 2021 special fund allowance covers slightly less than 78.9% of MSPAC’s operating expenses; fiscal 2019 actual expenditures show that special and general funds were split 80% and 20%, respectively.
- ***Maryland Institute for Emergency Medical Services Systems (MIEMSS):*** MIEMSS was established as a State agency in 1993. MIEMSS had been in existence for 20 years prior to that – first under the Maryland Department of Health and then under the University of Maryland, Baltimore Campus. MIEMSS oversees and coordinates all components of the statewide EMS system.
- ***R Adams Cowley Shock Trauma Center (Shock Trauma Center):*** The Shock Trauma Center, operated by the University of Maryland Medical System, is the core element of the State’s EMS system and serves as the State’s primary adult resource center for the treatment of trauma. MEMSOF funds are provided as an operating subsidy to the Shock Trauma Center, which was level funded at \$3.0 million from fiscal 2010 through 2014. In some years, the Shock Trauma Center received an annual inflationary increase. Chapter 429 of 2013 expressed the intent to increase the Shock Trauma Center operating subsidy from \$3.0 million to \$3.2 million in fiscal 2015.

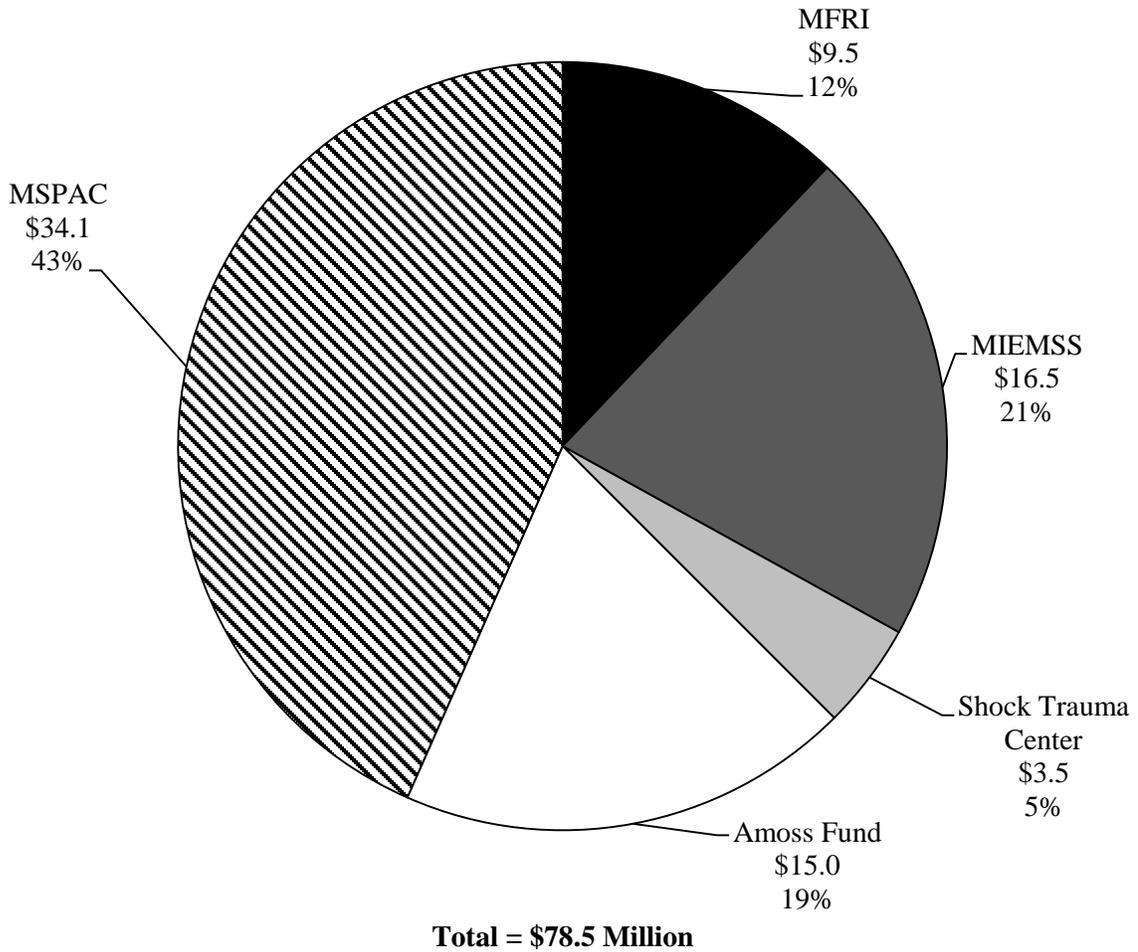
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- ***Maryland Fire and Rescue Institute (MFRI):*** MFRI is the State’s fire and emergency service training agency responsible for the majority of basic level pre-hospital training and education for EMS providers.
- ***Local Grants under the Senator William H. Amoss Fire, Rescue, and Ambulance Fund (Amoss Fund):*** The Amoss Fund provides grants to local jurisdictions for the purchase of fire and rescue equipment and building rehabilitation. These grants are administered by the Maryland Emergency Management Agency (MEMA).

**MEMSOF Fiscal 2021 Allowance**

The fiscal 2021 allowance provides for \$78.5 million in total expenditures funded from MEMSOF. **Exhibit 1** provides the percentage breakdown of each MEMSOF entity relative to total spending. MSPAC (43%), MIEMSS (21%), and the Amoss Fund (19%) make up the largest portions of MEMSOF expenditures.

**Exhibit 1**  
**MEMSOF 2021 Expenditures**  
**(\$ in Millions)**



Amoss Fund: Senator William H. Amoss Fire, Rescue, and Ambulance Fund  
MEMSOF: Maryland Emergency Medical System Operations Fund  
MFRI: Maryland Fire and Rescue Institute  
MIEMSS: Maryland Institute for Emergency Medical Services Systems  
MSPAC: Maryland State Police Aviation Command  
Shock Trauma Center: R Adams Cowley Shock Trauma Center

Note: Percentages may not sum to total due to rounding.

Source: Governor’s Fiscal 2021 Budget Books; Department of Legislative Services

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## **MEMSOF Oversight**

### **EMS Board**

The EMS Board consists of 11 members appointed by the Governor to serve four-year terms, ending on June 30. The EMS Board is tasked with developing, adopting, and monitoring a statewide plan to ensure effective coordination and evaluation of EMS. The EMS Board appoints the Executive Director of MIEMSS, who serves as the administrative head of the State's EMS system and the operations of MIEMSS. MIEMSS implements the plan developed by the EMS Board. The EMS Board prepares an annual budget proposal that takes into account the estimated income of MEMSOF and budget requests from MIEMSS, the Shock Trauma operating fund, MFRI, and MSPAC.

### **EMS Advisory Council**

The State EMS Advisory Council (SEMSAC) consists of 31 members appointed by the EMS Board with approval by the Governor. SEMSAC serves as the principal advisory body, assists with the EMS plan (criteria and guidelines for delivery of EMS), and provides means to address EMS issues regionally and statewide.

### **MEMSOF Entities without EMS Board Oversight**

The Amoss Fund is not bound by a review and approval process by the EMS Board.

#### **Amoss Fund**

In the fiscal 2021 allowance, the Amoss Fund receives \$15 million from MEMSOF. Funding is distributed by MEMA, within the Military Department, to the counties and Baltimore City to purchase fire and rescue equipment and for capital building improvements. Distributions are made according to each county's percentage of total property tax accounts (*e.g.*, the fiscal 2021 allocation will be based on property tax data published by the State Department of Assessments and Taxation in July 2020). Qualified municipalities in a county receive a percentage of the funds received by a county equal to one-half of the proportion that the municipality's expenditures bear to the county's expenditures. All counties receive a minimum of 2% of the annual appropriation in addition to the amounts distributed to qualified municipalities. Chapters 331 and 332 of 2013 further required that, beginning in fiscal 2015, counties must spend a percentage of Amoss Fund money received on volunteer fire, rescue, and ambulance companies that equals the percentage spent in fiscal 2011 on volunteer companies or at least 51% of the funds received, whichever is greater.

The Director of MEMA is also responsible for enforcing the Maintenance of Effort (MOE) provisions, which require counties to spend an amount greater than or equal to the amount of State funds received for fire protection from their own sources and require that counties spend an amount at least equal to the average amount expended in the prior three years by the county. Chapter 225 of 2014 provided additional guidance on how MOE requirements should be enforced. The legislation specified the following.

- The Director of MEMA may withhold funds allocated for the second subsequent fiscal year from a county that does not comply with MOE requirements.
- If a jurisdiction does not comply with MOE requirements for two consecutive years, and no waiver is granted by the Board of Public Works (BPW) or the General Assembly, then the director must withhold funds.
- The penalty for noncompliance is equal to the percentage by which the county failed to meet the MOE requirement.
- A county may request a waiver from the MOE requirement based on a determination that the county's fiscal condition significantly impedes the county's ability to fund the MOE requirement. A waiver cannot relieve a county of the requirement to make expenditures to fire protection from its own sources.

Chapter 225 also changed the calculation of fire protection expenditures beginning in fiscal 2015 to exclude capital expenditures. MEMA annually sends out instructions to all counties updating any changes to the law and reiterating all rules and requirements. Counties are required to report on expenditures for fire protection from the prior fiscal year (Schedule A) and report the amount of money distributed to each recipient and purpose of the expenditure, including unexpended funds and the amount and nature of any in-kind assistance made by the county to volunteer fire, rescue, and ambulance companies.

Therefore, in order to fairly calculate the three-year average, fiscal 2015 through 2017 expenditures must be used for the three-year base period. MOE determinations are then based upon the three-year base period as compared to the actual expenditures of the subsequent two fiscal years: fiscal 2018; and 2019. Statute provides that any local company or jurisdiction who fails to submit expenditure data to MEMA by December of the following fiscal year is eligible to have part, or all, of their allocation forfeited. Because the disbursements of the Amoss Fund are determined in November of each fiscal year, MEMA has advised that fiscal 2021 will be the first year any potential reductions would be applied to a jurisdiction's Amoss Fund allocation. To date, all but two jurisdictions have submitted expenditure data. MEMA has not yet determined the MOE for any jurisdiction.

**Representatives of the Amoss Fund should comment on the process and timing of calculating MOE compliance, efforts to receive jurisdictional expenditure reports, and the ramifications for the two counties which failed to submit expenditure data.**

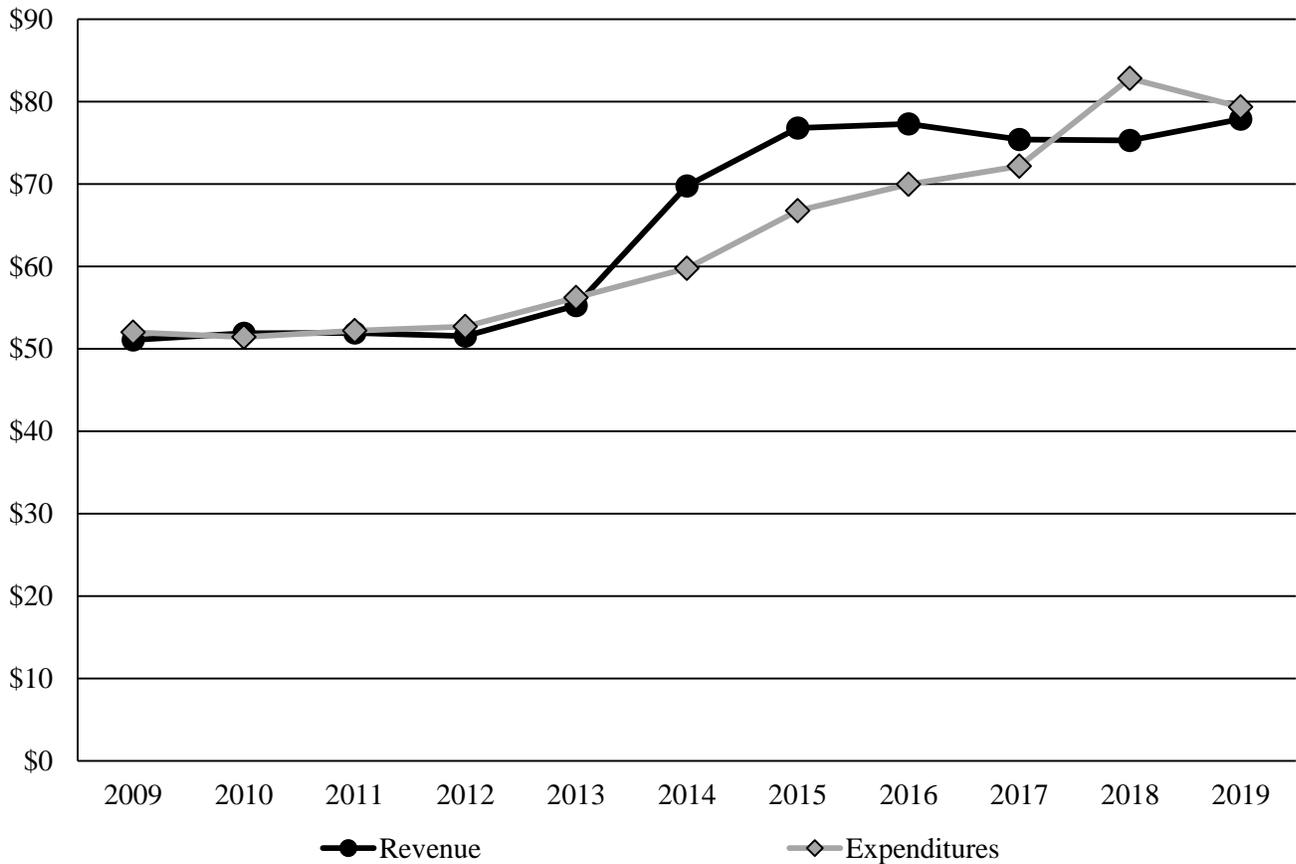
## **History of Revenues and Expenditures**

**Exhibit 2** provides a history of MEMSOF revenues and expenditures from fiscal 2009 through 2019.

Between fiscal 2010 and 2013, revenues and expenses remained close and increased in tandem to approximately \$55 million. During this period, expenditures exceeded revenues in all but one year.

Beginning in fiscal 2014, the Motor Vehicle Administration (MVA) increased the registration fee, resulting in the sharp increase in revenues between fiscal 2013 and 2015. MEMSOF revenues outpaced expenses by \$7.6 million on average annually between fiscal 2014 and 2017.

**Exhibit 2**  
**MEMSOF Actual Revenues versus Expenditures**  
**Fiscal 2009-2019**  
**(\$ in Millions)**



MEMSOF: Maryland Emergency Medical System Operations Fund

Source: Department of Legislative Services

Expenditures have also risen since fiscal 2013, though they only began to outpace revenues in fiscal 2018. As a result, MEMSOF saw its first deficit since fiscal 2013 to the tune of \$7.5 million. These costs were largely driven by MSPAC operating expenditures and a MIEMSS communication system upgrade. As discussed later in this analysis, the Department of Legislative Services (DLS) projects this deficit to continue to grow in future years as these costs persist.

## **MVA Registration Fee Increase**

The MVA registration fee supporting MEMSOF was originally established at \$8.00 per year in 1992. The fee increased by \$3.00 in 2001, raising it to \$11.00 per year. During the 2013 session, a fee increase of \$3.50 per year was included in the Transportation Infrastructure Investment Act (Chapter 429). This raised the fee from \$11.00 to \$14.50 per year, or \$29.00 collected biennially.

In addition to sustaining the long-term viability of MEMSOF, the General Assembly expressed the intent to enhance the funding provided to the user agencies of MEMSOF with the fee increase. These enhancements included:

- funding the upgrade and maintenance of the MIEMSS communications system;
- increasing the base salary for MSPAC pilots and maintenance technicians to \$70,000 and \$60,000, respectively;
- hiring 20 additional MSPAC pilots to improve the safety of flight operations;
- increasing the annual operating subsidy to the Shock Trauma Center to \$3,200,000;
- purchasing high temperature tiles for MFRI;
- increasing the salary of MFRI field instructors by \$2.00 per hour; and
- increasing the Amoss Fund to \$15.0 million by fiscal 2017 with a gradual phase-in starting in fiscal 2015.

To date, all of these enhancements have been addressed, although revisions to the funding estimate for the MIEMSS communications system upgrade will require additional funding through fiscal 2022.

## **MEMSOF Expenditures**

**Exhibit 3** shows MEMSOF expenditures from fiscal 2019 to 2021. The fiscal 2021 allowance for all MEMSOF expenditures is nearly level, increasing just \$264,285, or 0.3%, from the fiscal 2020 working appropriation.

Funding for the MIEMSS communications system upgrade was initially split between fiscal 2018 and 2019 with the bulk of the funding (\$8.7 million) provided in fiscal 2018. The fiscal 2019 budget provided \$3.4 million to fund the remainder of the estimated project costs. Despite assurances from MIEMSS and the Department of Information Technology (DoIT) during the 2019 session that the \$12.1 million originally appropriated in fiscal 2018 and 2019 would be sufficient, the project cost has increased to a total of \$16.7 million. A four-year contract was awarded for the project in May 2018 and allows for four one-year renewal options for the contractor to continue providing maintenance on the

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system. Funding of \$3.7 million is anticipated to be provided in fiscal 2022 and an additional \$988,706 in fiscal 2024.

MFRI funding declined by approximately \$133,000, or 1.4% in fiscal 2021. Adjustments are made to account for employee compensation enhancements in fiscal 2020 and 2021 that are currently budgeted in the Department of Budget and Management (DBM). These enhancements provide approximately \$128,000 in additional funding across the two budget years.

The fiscal 2021 allowance for MIEMSS operating expenses provides modest growth over the fiscal 2020 working appropriation with an increase of 1.8%. Personnel expenses account for the vast majority of the adjustments, reflecting a 1.0% general salary increase in fiscal 2020 as well as the annualization of the fiscal 2020 salary increase and 2% fiscal 2021 cost-of-living increase for all State employees.

The MEMSOF-funded fiscal 2021 allowance for MSPAC remains relatively level, growing just 0.02%. Much of this growth is attributable to adjustments in fiscal 2020 and 2021 for enhancements currently budgeted in DBM for members of the State Law Enforcement Officers Labor Alliance (SLEOLA). Still, MSPAC funding is approximately \$1.2 million above fiscal 2019 actual expenditures.

The Governor's allowance reflects a \$100,000 increase in the grant to the Shock Trauma Center in fiscal 2021 to \$3.5 million. The center previously received a \$100,000 increase, to \$3.4 million, in fiscal 2020. As is noted further in the Issues section of this analysis, the MEMSOF forecast presented by DBM increases Shock Trauma Center funding by \$100,000 annually through fiscal 2023 for a total appropriation of \$3.7 million in fiscal 2023 and beyond in order to account for inflationary increases and other growth in operating costs. It is estimated that the current grant covers slightly more than half of the center's operating expenses.

**Exhibit 3**  
**MEMSOF Expenditures**  
**Fiscal 2019-2021 Allowance**  
**(\$ in Thousands)**

	<u>2019</u> <u>Actual</u>	<u>2020</u> <u>Working</u>	<u>2021</u> <u>Allowance</u>	<u>2020-2021</u> <u>Change</u>	<u>2020-2021</u> <u>% Change</u>
MFRI – R75T00.01	\$9,397,098	\$9,618,695	\$9,485,585	-\$133,110	-1.4%
MIEMSS – D53T00.01	15,448,369	16,167,586	16,457,682	290,096	1.8%
Shock Trauma Center – M00R01.01	3,300,000	3,400,000	3,500,000	100,000	2.9%
Amoss Fund – D50H01.06	15,000,000	15,000,000	15,000,000		0.0%
MSPAC – W00A01.04	31,653,687	34,044,832	34,052,131	7,299	0.0%
MIEMSS Communication System	3,400,000				n/a
<b>Total</b>	<b>\$78,199,154</b>	<b>\$78,231,113</b>	<b>\$78,495,398</b>	<b>\$264,285</b>	<b>0.3%</b>

Amoss Fund: Senator William H. Amoss Fire, Rescue, and Ambulance Fund  
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Shock Trauma Center: R Adams Cowley Shock Trauma Center

Note: The fiscal 2020 working appropriation and fiscal 2021 allowance recognize adjustments for salary enhancements that are currently budgeted within the Department of Budget and Management. This includes a 1% cost-of-living adjustment (COLA) in fiscal 2020 and a 2% COLA and annual salary review in fiscal 2021.

Source: Governor’s Fiscal 2020 Budget Books; Department of Legislative Services

## Issues

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### 1. MEMSOF Forecasts

**Appendix 1** provides DBM’s MEMSOF forecast from fiscal 2019 through 2025. Last session, DBM revised the growth rate assumptions used in creating the out-year forecast for MEMSOF. As opposed to applying an average growth rate using expenditures from the past 10 years, DBM instead utilized the average growth rate from the 3 most recent years of actual spending. This change in calculation was applied to the assumed growth rates for MFRI, MIEMSS, and MSPAC. According to the department, concerns were raised that overall growth in agency spending was being inappropriately skewed by the fiscal 2014 fee increase and enhanced spending that resulted from that fee increase. Based on this change in calculation, the DBM forecast includes the following assumptions.

- **MFRI:** Expenditures grow at a rate of 4.8%.
- **MIEMSS:** Expenditures grow at a rate of 2.3%.
- **Shock Trauma Center:** The DBM forecast provides the Shock Trauma Center with an annual \$100,000 increase in fiscal 2021 through 2023. This is to accommodate inflation and other operating expense increases for operating room standby and Go-Team costs.
- **Amoss Fund:** Grants provided to local jurisdictions total \$15.0 million annually throughout the forecast.
- **MSPAC:** Expenditures grow at a rate of 3.3%.
- **MIEMSS Communications System:** The fiscal 2021 allowance does not provide funding for the upgrade costs for the MIEMSS communications system project, consistent with original cost projections. However, revised cost estimates from DoIT based on the actual contract indicate the need for additional funding in fiscal 2022 and 2024, which are not recognized in the DBM forecast.

With the calculation of lower growth rates, the DBM forecast predicts a closing balance of \$7.6 million in fiscal 2025. As a point of comparison for understanding the impact of the lower growth rates, the forecast developed by DBM for the 2018 session estimated a closing balance of \$7.3 million at the end of fiscal 2024. The revised forecast offered at the 2019 session estimated the fund having \$18.9 million at the close of fiscal 2024.

**Appendix 2** provides DLS' MEMSOF forecast from fiscal 2019 through 2026; note that the DBM projection provides 4 out-year projections, while DLS continues to provide 5 out-years. The DLS forecast continues to use the 10-year average rate of growth for projecting future agency operating expenses. In addition to offering a point of comparison from the DBM forecast, using a longer period for determining the average growth rate provides for more smoothing to account for significant or unique year-over-year changes. With the different calculation for rate of growth, significant variance results between the DBM and DLS forecasts. The assumptions that differ for the DLS forecast include the following.

- ***MVA Registration Fees:*** The DLS forecast shows that from fiscal 2021 through 2025, registration revenues will grow by 1.0% based on the anticipated year-to-year changes assumed in the Maryland Department of Transportation's fiscal 2019 *Final Consolidated Transportation Program* forecast. This is consistent with the 1.0% growth assumed by DBM. Differences in the fees collected are due to timing differences in the MDOT forecast used by DBM and DLS.
- ***Moving Violation Surcharge:*** The DLS forecast recognizes the additional \$25,000 provided to the Widows and Orphans Fund in fiscal 2019 and 2020, increasing the total appropriation for the fund to \$325,000. This funding increase reduces the amount of revenue credited to MEMSOF from the moving violation surcharge. The DBM forecast does not reflect the reduced revenue to MEMSOF and assumes an 8.8% increase in surcharge revenues in fiscal 2020 and carrying forward, despite the number of citations issued having declined by more than 24% since fiscal 2015.
- ***MFRI:*** Expenditures grow at a rate of 3.3%, while the DBM forecast assumes 4.8%. In addition to utilizing the actual average annual growth for the past 10 years versus the most recent 3 years, the DLS forecast allocates funding in fiscal 2020 and 2021 for employee compensation enhancements that are not allocated in the DBM forecast.
- ***MIEMSS:*** The DLS forecast applies an expenditure growth rate of 3.3% to MIEMSS operating expenses. The DLS assumed rate of growth is based on average expenditures for fiscal 2010 through 2019. Operating expenses for MIEMSS in the DLS forecast reflect general salary increases in fiscal 2020 and 2021, which are not reflected in the DBM forecast. In addition, the DLS expenditures include operating expenses to maintain the agency's communications system, which had previously been budgeted separately from the MIEMSS general operations budget. The DLS forecast also includes a \$998,706 increase in operating expenses for the communications system beginning in fiscal 2024 based on DoIT's cost estimate for the project. MIEMSS has indicated that the additional \$4.7 million in funding is not necessary and will instead fund the project through the agency's operating budget. **MIEMSS should comment on why its project cost estimates differ from that of DoIT.**
- ***Shock Trauma Center:*** The Shock Trauma Center receives \$3.5 million in fiscal 2021. DLS also does not assume the same increased funding in the out-years of the forecast. Providing funding above the \$3.2 million minimum grant amount expressed through legislative intent in Chapter 429 is a policy decision that should be made annually based on the overall health of

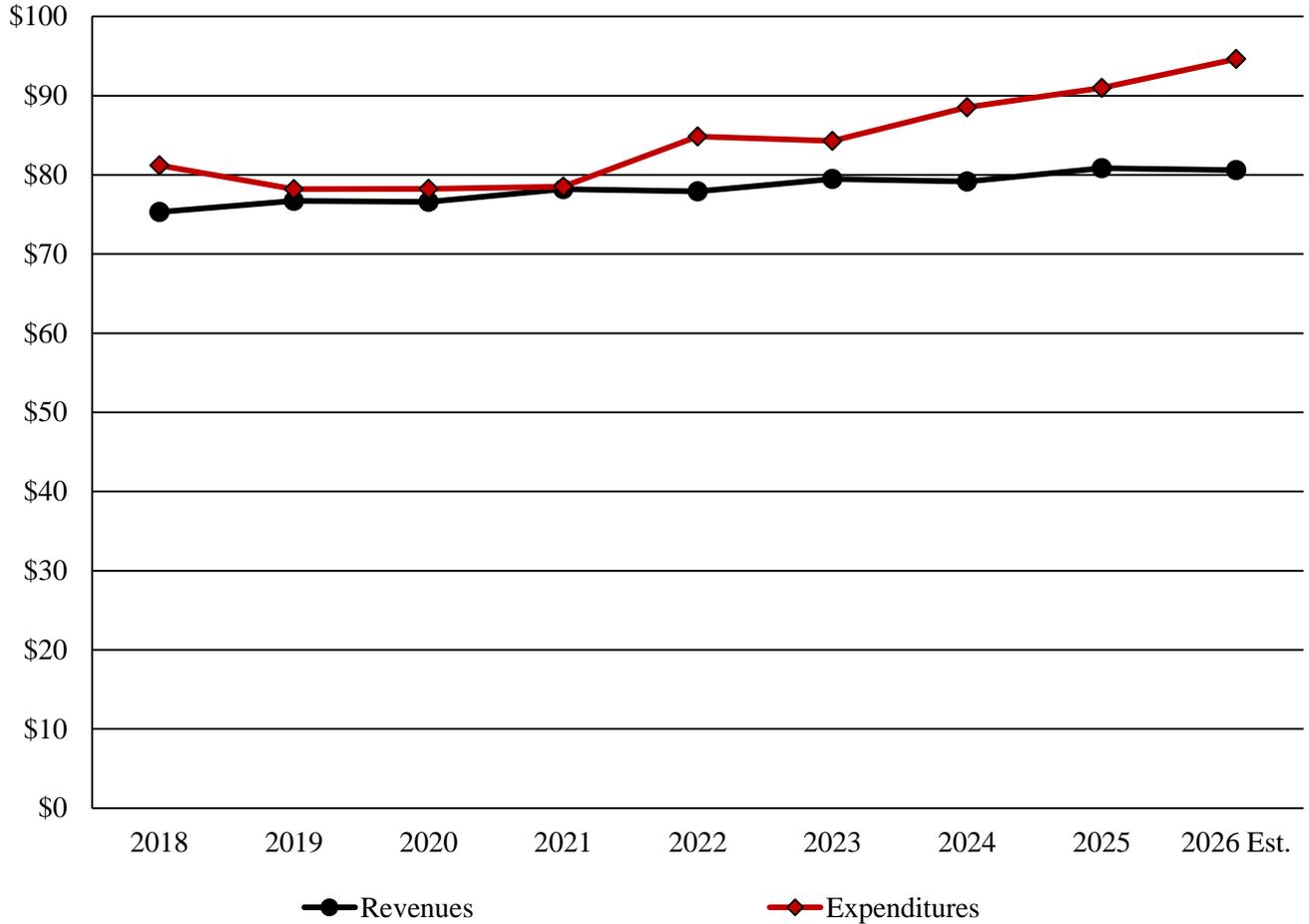
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MEMSOF. As such, DLS recommends concurring with and maintaining the funding level in fiscal 2021 but does not reflect a continued increase beyond the current budget year being considered.

- **MSPAC:** DLS anticipates expenditures to grow at a rate of 6.2%, compared to the DBM growth rate of 3.3%. The 3.3% rate assumed by the department seems too low given that Department of State Police (DSP) spending, exclusive of MSPAC, has grown at a rate of 5.1% over the past 10 years. The DLS forecast does allocate funding for employee bonuses, cost-of-living increases, and SLEOLA bargaining agreement provisions in fiscal 2020 and 2021, which are not reflected in the DBM forecast.

Based on these assumptions, the DLS forecast projects that MEMSOF will remain solvent through fiscal 2024 with an estimated closing balance of \$4.3 million. Primarily due to projected increases in MVA registration fee revenues and lower than expected MSPAC expenditures, the fund reaches insolvency one year later than was predicted in the 2019 session forecast. Projected spending will substantially exceed ongoing revenues beginning in fiscal 2021, as shown in **Exhibit 4**, resulting in a spending gap of \$14.1 million by fiscal 2026. This suggests that the General Assembly must therefore begin to consider revenue enhancements or spending cuts for the fund in order to maintain the health of the fund.

**Exhibit 4**  
**MEMSOF Revenues versus Expenditures**  
**Fiscal 2018-2026 Est.**  
**(\$ in Millions)**



MEMSOF: Maryland Emergency Medical System Operations Fund

Source: Department of Legislative Services

**2. Rising Operating and Maintenance Costs of the MSPAC Fleet Raise Concerns for MEMSOF’s Long-term Viability**

The MSPAC fleet consists of 10 helicopters housed on seven bases throughout the State. Acquiring and maintaining a fleet of 10 AW139 helicopters has been a significant undertaking for

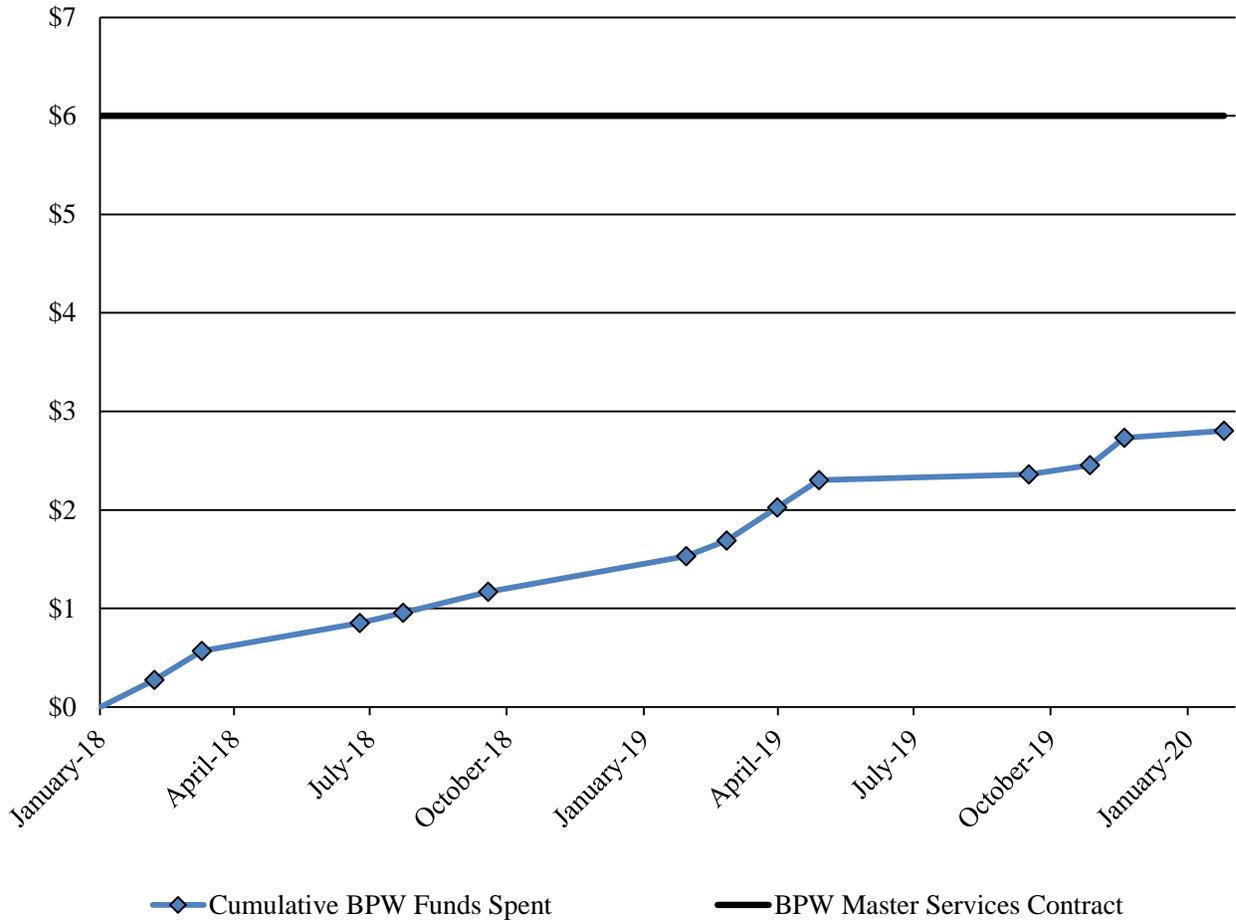
MSPAC, from both a fiscal and operational perspective. Currently, maintenance of the fleet is performed by MSPAC maintenance personnel and by an outside vendor, as needed, under master services contracts approved by BPW in January 2018. As of the end of fiscal 2018, the entire fleet is no longer under their original warranties.

### **Increased Mission Portfolio Strains MSPAC’s Maintenance Needs**

In September 2019, Governor Lawrence J. Hogan, Jr. committed the MSPAC fleet to support the Baltimore Police Department in crime reduction efforts. Because the support is offered in conjunction with routine missions and operations in Baltimore City, operations or overtime costs will not be impacted. Costs associated with this additional service would, however, be captured in fuel costs, flight hours, and related overhead costs. MSPAC estimates that these costs equate to an additional \$5,881 per hour of operating time. It is important to note, however, that these costs would not be directly incurred by MEMSOF. The law enforcement nature of this additional flight time is considered nonmedivac, and are therefore billed to the general fund. Still, these are flight hours incurred by the MSPAC fleet, and contribute to the fleets need for maintenance and repairs.

Under the January 2018 Master Service Contracts, BPW approved \$6 million in funding for helicopter maintenance with an expiration date set for January 2023. The purpose of the contract was intended to provide MSPAC a faster and more efficient procurement process, minimizing the time required to service their aircraft. As of January 2020, MSPAC has expended more than \$2.8 million of these funds (**Exhibit 5**) and expects to see similar maintenance expenditures for other helicopters in the fleet in future fiscal years; by April 2020, two more aircraft are scheduled to undergo a four year/1,200 hour inspection and repair. At this rate, MSPAC will have expended more than half of their five-year, \$6 million BPW Master Services Contract in just over two years. DSP expects to exceed \$6 million in encumbrances by the end of fiscal 2021.

**Exhibit 5**  
**Maryland State Police Aviation Command**  
**Funds Expended of the Helicopter Maintenance Master Services Contract**  
**Calendar 2018-2020**  
**(\$ in Millions)**



BPW: Board of Public Works

Source: Department of State Police; Board of Public Works

This places operational strain on the MSPAC fleet as well, as aircraft must be grounded during repairs. While MSPAC commanders will monitor the health of the fleet and reallocate aircrafts around the State as necessary, scheduled and unscheduled maintenance and repairs adversely affect operations. In these situations, MSPAC will use coverage from adjacent bases or agreements with partner fleets to provide assistance when aircrafts are unavailable.

As per the 2018 *Joint Chairmen’s Report* (JCR), MSPAC submitted a response outlining the long-term costs associated with maintaining the fleet, including the future need to overhaul engines and tail rotors. Because this would have a significant impact on the health of MEMSOF, MSPAC was asked to identify options to limit the overall fiscal impact for providing necessary maintenance on the fleet. MSPAC estimates that the more expensive maintenance requirements, primarily major overhauls of the engine and main gear box, would be required beginning in fiscal 2029 and span through fiscal 2034. In total, using calendar 2018 pricing, MSPAC estimates additional maintenance costs of \$23.1 million for major overhauls, in addition to the \$5.0 million spent on standard maintenance annually, not accounting for inflation. This brings expected maintenance costs, not including MSPAC labor or unforeseen/unscheduled maintenance expenses, to nearly \$100 million over the next 15 years.

### **Options for Addressing Long-term Maintenance Needs**

One solution explored by MSPAC to avoid some of the expense of the long-term maintenance costs was enrollment in a service program that includes an initial buy-in, along with a monthly fee based on flight hours and/or landings per flight hour but would provide access to spare parts and maintenance services, including coverage for any unplanned or expensive overhaul maintenance events.

MSPAC explored three options for maintenance plans through the AW139 manufacturer, Leonardo, which would not include overhaul of the engines. A separate plan offered through Pratt & Whitney would cover engine overhauls. The three plans offered through Leonardo include:

- **Essential Plan (EP):** covers the main drive components of the basic aircraft configuration, includes materials and spare parts for scheduled and unscheduled maintenance, replacement of all parts reaching service life limit, and exchange of components that have reached their discard time;
- **Full Components Plan (FCP):** covers all components of the basic aircraft configuration (including structures), same materials and parts coverage as EP, plus part support for mandatory technical bulletins; and
- **Operational Support Plan:** provides the same coverage as FCP, in addition to maintenance support for executing all basic maintenance scheduled inspections (*i.e.*, flight hour or annual inspections) that occur at a Leonardo facility.

All service plan options would not cover any work required for the helicopter engines, avionics, or mission equipment (*e.g.*, hoist assembly, infrared cameras, searchlights, medical components, *etc.*). In addition, most day-to-day or general wear-and-tear maintenance would not be included. This includes issues with paint, interiors, ground support equipment, troubleshooting labor, *etc.* Transportation costs for getting the fleet and/or parts between Leonardo and the MSPAC facility are also excluded from the cost. Finally, any damage or wear found due to corrosion or the environment would not be covered.

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In order to cover all major components and potentially significant maintenance events, MSPAC would need to purchase separate service plan agreements with Leonardo and Pratt & Whitney. In its 2018 analysis, MSPAC recommended pursuing the FCP option, which would provide more complete coverage of the helicopters but not overpay for scheduled maintenance services that could otherwise be performed by MSPAC maintenance staff. FCP, along with the Pratt & Whitney engine service plan, would require upfront costs of \$21.6 million in year one of the agreement and \$4.1 million for each subsequent year, absent any inflationary growth.

**Exhibit 6** provides a comparison of the costs associated with each service plan. Each plan includes a buy-in to account for years not enrolled in a service plan. The buy-in amount is negotiable based on varying factors and, therefore, is only an estimate as of March 2018.

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**Exhibit 6**  
**Maryland State Police Aviation Command**  
**Helicopter Fleet Maintenance Service Plan Options**

	<u>Essential Plan</u>	<u>Full Components Plan</u>	<u>Operational Support Plan</u>
Hourly Rate	\$562	\$867	\$1,478
Delta Rate Landings (Landing Per Flight Hour Fee)	32	32	32
Estimated Buy-in	7,500,000	11,800,000	TBD
Estimated Annual Fee Based on 3,000 Flight Hours Per Year	1,782,000	2,697,000	4,530,000
<b><i>Leonardo Subtotal (Fee + Buy-in)</i></b>	<b><i>\$9,282,000</i></b>	<b><i>\$14,497,000</i></b>	<b><i>TBD</i></b>
Pratt & Whitney Engine Maintenance Annual Fee	\$1,353,480	\$1,353,480	\$1,353,480
Pratt & Whitney Engine Maintenance Initial Buy-in	5,749,815	5,749,815	5,749,815
<b><i>Pratt &amp; Whitney subtotal (Fee + Buy-in)</i></b>	<b><i>\$7,103,295</i></b>	<b><i>\$7,103,295</i></b>	<b><i>\$7,103,295</i></b>
<b>Total Year One Cost, All Plans</b>	<b>\$16,385,295</b>	<b>\$21,600,295</b>	<b>TBD</b>
Ongoing Annual Costs, All Plans	\$3,135,480	\$4,050,480	\$5,883,480

TBD: to be determined

Source: Maryland State Police Aviation Command; Department of State Police

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MSPAC argues that pursuing the FCP and Pratt & Whitney plans would eliminate capital costs for spare parts, allow for more predictable budgeting by eliminating the impact of unforeseen or unscheduled maintenance, and eliminate the need for maintaining a high volume of component inventory. These plans would not reduce the need for MSPAC maintenance staff in any way, as the overhauls and component repairs that would be covered under the plans are beyond the skill scope of the MSPAC technicians and would require outside maintenance support regardless of whether a service plan was in place. In addition, basic care for the helicopters provided by existing MSPAC staff is not included in the plans and would continue to need to be provided.

### **Impact on MEMSOF**

The report submitted by MSPAC provides no suggestions or recommendations for how to pay for the recommended service plans. In lieu of purchasing any maintenance support plans, MSPAC has indicated that it will continue with utilizing the master services contracts and internal staff. Delay of securing the FCP plan further increases the upfront cost. At the time of MSPAC's JCR submission, the upfront cost was estimated to be \$21.6 million; the aviation maintenance vendors now estimate the cost to be \$25.7 million. MSPAC estimates that purchasing these service plans would save the State between \$5 million and \$10 million over the next 15 years. These plans would be more beneficial if the fleet were to encounter costly unscheduled or unforeseen maintenance issues. Of concern, however, is how such a large upfront cost in year one would be absorbed by MSPAC and MEMSOF. The DLS forecast predicts a closing balance of \$25.4 million at the end of fiscal 2021.

**Appendix 1**  
**Maryland Emergency Medical Services Operations Fund Statements**  
**Department of Budget and Management**  
**Fiscal 2019-2025 Estimated**

	<u>2019</u> <u>Actuals</u>	<u>2020</u> <u>Appropriation</u>	<u>2021</u> <u>Estimate</u>	<u>2022</u> <u>Estimate</u>	<u>2023</u> <u>Estimate</u>	<u>2024</u> <u>Estimate</u>	<u>2025</u> <u>Estimate</u>
<b>Beginning Balance (7/1)</b>	<b>\$27,048,362</b>	<b>\$25,544,997</b>	<b>\$23,784,432</b>	<b>\$23,726,912</b>	<b>\$21,375,213</b>	<b>\$18,565,490</b>	<b>\$13,349,314</b>
MVA Registration Fees	\$73,774,373	\$73,201,000	\$74,877,000	\$74,659,000	\$76,372,000	\$76,135,000	\$77,884,000
Interest Income	442,306	488,410	470,409	446,556	395,453	315,988	207,528
Moving Violations Surcharge	2,479,110	2,696,665	2,696,665	2,696,665	2,696,665	2,696,665	2,696,665
<b>Current Year Revenues</b>	<b>\$76,695,788</b>	<b>\$76,386,075</b>	<b>\$78,044,074</b>	<b>\$77,802,221</b>	<b>\$79,464,117</b>	<b>\$79,147,653</b>	<b>\$80,788,193</b>
MD Fire & Rescue Institute (UMCP)	\$9,397,098	\$9,586,711	\$9,389,631	\$9,841,393	\$10,314,890	\$10,811,169	\$11,331,326
MD Inst. of Emergency Medical Services	15,448,369	16,128,362	16,336,084	16,718,462	17,109,791	17,510,280	17,920,142
MD State Police Aviation Command	31,653,687	34,031,567	33,875,879	34,994,064	36,149,159	37,342,381	38,574,989
Shock Trauma Center	3,300,000	3,400,000	3,500,000	3,600,000	3,700,000	3,700,000	3,700,000
Grants to Local Fire, Resc. and Amb.	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000
MIEMSS Communications Upgrade	3,400,000						
<b>Current Year Expenditures</b>	<b>\$78,199,154</b>	<b>\$78,146,640</b>	<b>\$78,101,594</b>	<b>\$80,153,919</b>	<b>\$82,273,840</b>	<b>\$84,363,830</b>	<b>\$86,526,457</b>
<b>Ending Balance (6/30)*</b>	<b>\$25,544,997</b>	<b>\$23,784,432</b>	<b>\$23,726,912</b>	<b>\$21,375,213</b>	<b>\$18,565,490</b>	<b>\$13,349,314</b>	<b>\$7,611,050</b>

\*Does not reflect salary enhancements budgeted in the Department of Budget and Management Statewide Account

MIEMSS: Maryland Institute for Emergency Medical Services Systems  
MVA: Motor Vehicle Administration

Shock Trauma Center: R Adams Cowley Shock Trauma Center  
UMCP: University of Maryland, College Park Campus

Source: Department of Budget and Management

**Appendix 2**  
**Maryland Emergency Medical Services Operations Fund Statements**  
**Department of Legislative Services**  
**Fiscal 2019-2026 Estimated**

	<u>2019</u> <u>Actual</u>	<u>2020</u> <u>Working</u>	<u>2021</u> <u>Allowance</u>	<u>2022</u> <u>Estimated</u>	<u>2023</u> <u>Estimated</u>	<u>2024</u> <u>Estimated</u>	<u>2025</u> <u>Estimated</u>	<u>2026</u> <u>Estimated</u>
<b>Beginning Balance (7/1)</b>	<b>\$28,838,070</b>	<b>\$27,334,704</b>	<b>\$25,694,464</b>	<b>\$25,393,174</b>	<b>\$18,467,791</b>	<b>\$13,682,567</b>	<b>\$4,275,662</b>	<b>-\$5,899,182</b>
MVA Registration Fees	\$73,774,373	\$73,553,049	\$75,171,217	\$74,945,703	\$76,594,508	\$76,364,725	\$78,197,478	\$77,962,886
Interest Income	442,306	407,815	392,884	348,103	255,162	42,526		
Moving Violations Surcharge	2,479,110	2,630,008	2,630,008	2,630,008	2,630,008	2,630,008	2,630,008	2,630,008
<b>Current Year Revenues</b>	<b>\$76,695,788</b>	<b>\$76,590,872</b>	<b>\$78,194,108</b>	<b>\$77,923,813</b>	<b>\$79,479,677</b>	<b>\$79,137,258</b>	<b>\$80,827,486</b>	<b>\$80,592,893</b>
MD Fire and Rescue Institute (UMCP)	\$9,397,098	\$9,618,695	\$9,485,585	\$9,801,717	\$10,128,385	\$10,465,940	\$10,814,745	\$11,175,174
MD Inst. of Emergency Medical Services	15,448,369	16,167,586	16,457,682	16,994,453	17,548,731	18,121,087	18,712,110	19,322,409
Shock Trauma Center	3,300,000	3,400,000	3,500,000	3,200,000	3,200,000	3,200,000	3,200,000	3,200,000
Grants to Local Fire, Resc. and Amb.	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000
MD State Police – Aviation Div.	31,653,687	34,044,832	34,052,131	36,155,026	38,387,786	40,758,431	43,275,475	45,947,959
MIEMSS Comm. Sys. Upgrade	3,400,000			3,698,000		998,706		
<b>Current Year Expenditures</b>	<b>\$78,199,154</b>	<b>78,231,113</b>	<b>\$78,495,398</b>	<b>\$84,849,196</b>	<b>\$84,264,902</b>	<b>\$88,544,163</b>	<b>\$91,002,329</b>	<b>\$94,645,543</b>
<b>Ending Balance (6/30)</b>	<b>\$27,334,704</b>	<b>\$25,694,464</b>	<b>\$25,393,174</b>	<b>\$18,467,791</b>	<b>\$13,682,567</b>	<b>\$4,275,662</b>	<b>-\$5,899,182</b>	<b>-\$19,951,831</b>

MIEMSS: Maryland Institute for Emergency Medical Services Systems  
MVA: Motor Vehicle Administration

Shock Trauma Center: R Adams Cowley Shock Trauma Center  
UMCP: University of Maryland, College Park Campus

Source: Governor’s Fiscal 2021 Budget Books; Judiciary; Maryland Department of Transportation; Comptroller of Maryland; Department of Legislative Services