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# **Maryland Emergency Medical System Operations Fund Fiscal 2008 Budget Overview**

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**Department of Legislative Services  
Office of Policy Analysis  
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*Analysis of the FY 2008 Maryland Executive Budget, 2007*

*MEMSOF – Fiscal 2008 Budget Overview*

## **Maryland Emergency Medical System Operations Fund Fiscal 2008 Budget Overview**

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). MEMSOF was created by legislation adopted by the 1992 General Assembly. The source of revenue for MEMSOF is an \$11 annual surcharge on motor vehicle registrations for certain classes of vehicles, as specified in Section 13-954 of the Transportation Article. 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 Division:** The mission of the Maryland State Police (MSP), Aviation Division is to protect and improve the quality of life through the airborne delivery of emergency medical, law enforcement, and search and rescue services. Special funds from MEMSOF support Medevac functions and general funds support law enforcement, search and rescue, and homeland security functions. Beginning in fiscal 2003, the split was changed to 80% special fund/20% general fund based on the ratio of Medevac flights to law enforcement/search and rescue/homeland security. This fund split was 70% special fund/30% general fund through fiscal 2002.
- **The Maryland Institute for Emergency Medical Services Systems:** The Maryland Institute for Emergency Medical Services Systems (MIEMSS) was established as a State agency under legislation that became effective July 1, 1993. MIEMSS had been in existence for 20 years prior to that – first under the Department of Health and Mental Hygiene and then under the University of Maryland, Baltimore. MIEMSS oversees and coordinates all components of the statewide EMS system.
- **R Adams Cowley Shock Trauma Center:** The R Adams Cowley Shock Trauma Center (Shock Trauma Center), operated by the University of Maryland Medical System (UMMS), is the core element of the State's EMS and serves as the State's Primary Adult Resource Center for the treatment of trauma.
- **The Maryland Fire and Rescue Institute:** The Maryland Fire and Rescue Institute (MFRI) is the State's fire and emergency service training agency responsible for the majority of basic level pre-hospital training and education for emergency system service providers.

## *MEMSOF – Fiscal 2008 Budget Overview*

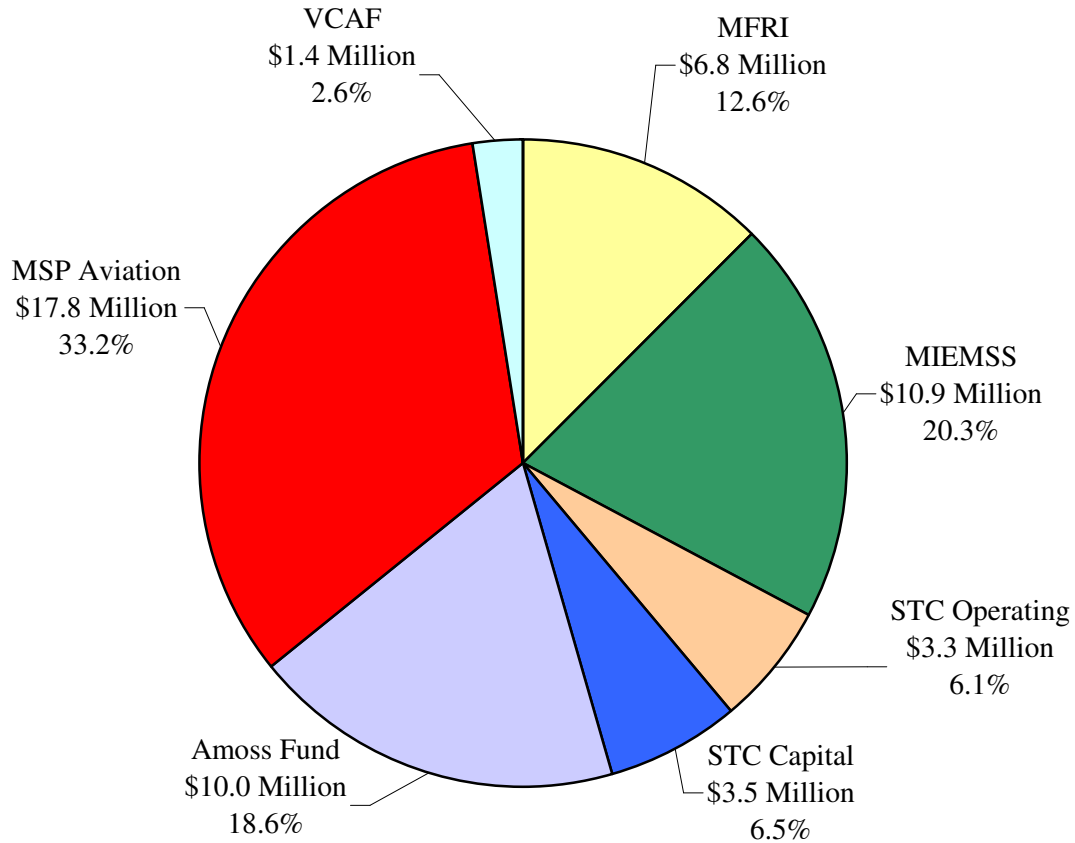
- **Local Grants under the Senator William H. Amoss Fire, Rescue, and Ambulance Fund:** Title 8, Subtitle 1 of the Public Safety Article establishes the Amoss Fund for grants to local jurisdictions for the purchase of fire and rescue equipment and capital building improvements. These grants are administered by the Maryland Emergency Management Agency (MEMA). Distributions are made according to each county's percentage of total property tax assessments. Each county receives a minimum of 2% of the total and must expend funds for fire protection from its own sources that are at least equal to the amount of State funds to be received.
- **Volunteer Company Assistance Fund:** The Volunteer Company Assistance Fund (VCAF) is administered by the Maryland State Firemen's Association and MEMA, and its purpose is to provide grants and loans to volunteer fire, rescue, and ambulance companies for the purchase, replacement, or improvement of fire fighting and rescue equipment or facilities.

The VCAF is comprised of two previously separate programs. The Low Interest Revolving Loan Account (LIRLA) was established under Chapter 240 of 2000 to create a fund for volunteer fire, rescue, and ambulance companies. The program assisted the companies with loans of up to 75% of the cost of purchasing or refurbishing fire and rescue equipment and updating or replacing facilities needed to store equipment. The other program, the Emergency Assistance Trust Account (EATA), provided primarily grants to volunteer companies for replacement of equipment or structures that house equipment. EATA had historically been funded with a general fund grant. The Budget Reconciliation and Financing Act of 2004 merged these two programs within VCAF but retained the purposes for which those accounts may be used. That legislation also broadened the use of MEMSOF to include all purposes within VCAF.

### **MEMSOF Fiscal 2008 Allowance**

The fiscal 2008 allowance provides for \$53.6 million in total expenditures funded from MEMSOF. **Exhibit 1** provides the percentage breakdown of each MEMSOF entity relative to total spending. The MSP Aviation Division (33.2%), MIEMSS (20.3%), Amoss Fund (18.6%), and MFRI (12.6%) make up the largest portions of MEMSOF expenditures.

**Exhibit 1  
MEMSOF 2008 Expenditures**



MFRI: Maryland Fire and Rescue Institute  
MIEMSS: Maryland Institute for Emergency Medical Services Systems  
MSP: Maryland State Police  
STC: Shock Trauma Center  
VCAF: Volunteer Company Assistance Fund

Source: Governor's Budget Books, Fiscal 2008

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## **MEMSOF Oversight**

### **EMS Board**

The EMS Board was created under Chapter 592 of 1993. The legislation, referred to as the EMS Law, became effective on July 1, 1993. The EMS Board is appointed by and directly responsible to the Governor. The EMS Board consists of 11 members appointed by the Governor, and terms last for four years, ending on June 30. The EMS Board is tasked with developing, adopting, and monitoring a statewide plan to ensure effective coordination and evaluation of emergency medical services. The EMS Board appoints the executive director of MIEMSS, who serves as the administrative head of the State's emergency medical services and the operations of MIEMSS. MIEMSS implements the emergency medical services plan developed by the EMS Board. The EMS Board is required to prepare an annual budget proposal that includes the estimated income of MIEMSS and proposed expenses for EMS Board administration and operation. The EMS Board is also required to review and approve budgets for MIEMSS, Shock Trauma Center operating funding, MFRI, and the MSP Aviation Division.

### **EMS Advisory Council**

The State EMS Advisory Council (SEMSAC) consists of 29 members appointed by the EMS Board with approval by the Governor. SEMSAC advises and assists the EMS Board and serves as the principal advisory body. SEMSAC also provides a means for regional EMS interests to be addressed, assists with the EMS Plan (criteria and guidelines for delivery of EMS), and assists with inter-regional and interstate EMS issues.

### **MEMSOF Agency Budget Process**

MIEMSS, MFRI, Shock Trauma Center operating funding, and the MSP Aviation Division are all under a review and approval process overseen by the EMS Board.

- **April:** The EMS Board and the SEMSAC Finance Subcommittee review final budgets approved by the legislature, review the *Joint Chairmen's Report*, and establish a schedule for review of agency budget requests for the next fiscal year.
- **May through July:** The EMS Board and the SEMSAC Finance Subcommittee meet with MEMSOF agencies to review proposed fiscal budgets and five-year plans. Also discussed are new program initiatives, budget compliance with Department of Budget and Management (DBM) directives, and projected long-term impact of the budgets on MEMSOF.
- **August through September:** Budgets are presented to SEMSAC and the EMS Board for review and approval; agencies submit budgets to DBM, and the EMS Board forwards recommendations to DBM.

## *MEMSOF – Fiscal 2008 Budget Overview*

- **October through December:** Agencies meet with DBM and legislative analysts to review budget requests.
- **January through April:** Agencies appear before legislative committees and subcommittees for budget review.
- **Ongoing:** Agencies are subject to legislative audit every three years by the Office of Legislative Audits.

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

The Amoss Fund, VCAF, and Shock Trauma Center capital funding are not bound by a review and approval process by the EMS Board.

#### **Amoss Fund**

MEMA, within the Maryland Military Department, receives \$10 million from MEMSOF for the Amoss Fund for the purchase of fire and rescue equipment and capital building improvements. The entire amount is distributed to 23 counties and Baltimore City according to Title 8 of the Public Safety Article.

- The Director of Assessments and Taxation certifies a county's real property numbers relative to the statewide total of all land use property tax accounts (*e.g.*, the fiscal 2003 allocation was based on July 2001 numbers). Each county's percentage of the total is calculated and all counties must receive at least 2% of the Amoss Fund or \$200,000.
- The allocation to the counties is distributed in four equal payments in August, November, February, and May unless the county fails to meet its maintenance of effort (spending more for fire protection from its own sources than the amount of State funds received and spending an amount at least equal to the average amount expended in the prior three years). If a county does not meet its maintenance of effort, its allocation will be reduced by the same percentage its expenditures are short the required level.
- 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 the prior fiscal year (Schedule A) and for the Amoss Fund for the current fiscal year (Schedule B). Both reports delineate the distribution of the county grants and category of expenditure (equipment, apparatus, facilities, unexpended, undistributed, etc.).

## *MEMSOF – Fiscal 2008 Budget Overview*

### **Volunteer Company Assistance Fund**

VCAF was created through enactment of Chapter 240 of 2000.

The Maryland State Firemen's Association (MSFA) reviews loan and grant applications from volunteer fire companies and makes recommendations to the Board of Public Works for a final decision and approval. The MSFA management of the program includes developing loan and grant criteria, loan terms, application review, and submission to the Board of Public Works for approval. MSFA is required to submit an annual report to DBM detailing loans and grants made during the previous fiscal year. MSFA is also required to submit financial statements and proof of expenditures for each loan, or grant made from this account. MEMA is responsible for managing the appropriated funds and processing the requests for payment.

### **Shock Trauma Center Capital Funding**

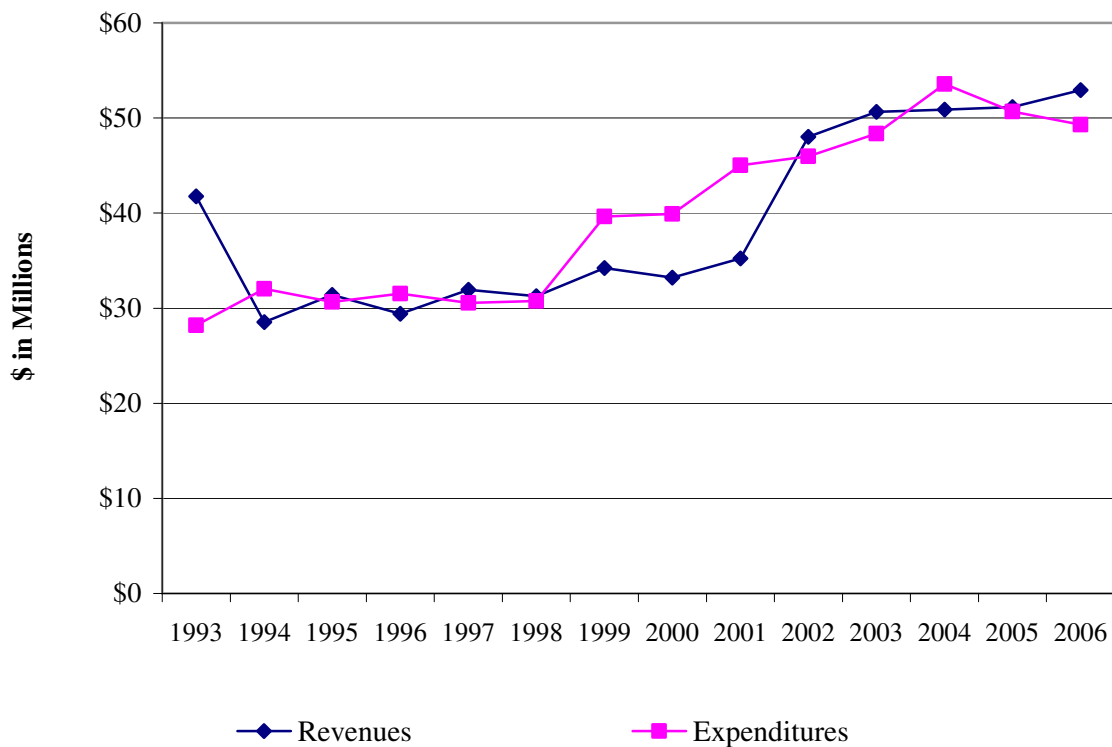
Funding for equipment and facility renewal at the Shock Trauma Center first appeared in the fiscal 2001 budget when \$3.5 million in special funds from MEMSOF was provided. The funds assist the Shock Trauma Center with efforts to replace and modernize its aging equipment and technology. Previously, the capital funds were used for upgrades and replacements such as medical air pumps and emergency generators. Another use of capital funds has been the acquisition of spiral computed tomography scanners that allow patients with critical injuries to receive chest and abdomen scans in a matter of seconds rather than minutes. Originally, the funding was part of a five-year capital equipment enhancement, ending in fiscal 2005. However, a second five-year program began in fiscal 2006 with continuation of an annual \$3.5 million grant. Planned enhancements include the upgrade of the angiography suite and preparation of the administrative space for critical care capability. MEMSOF funds for this initiative are not assumed to continue after fiscal 2011.

It should be noted that the capital program includes funds to renovate the Shock Trauma Center. The planned renovations include expanding patient care facilities, modernizing operating rooms, improving emergency preparedness, and addressing deficiencies with the electrical and mechanical systems. The renovation is to be largely funded with UMMS' funds; however, it is expected that the project will require \$20 million in general obligation bonds in fiscal 2009 and 2010.

## History of Revenues and Expenditures

Exhibit 2 provides a history of MEMSOF revenues and expenditures from fiscal 1993 through 2006. Revenues were much higher than expenditures during the first year of MEMSOF in fiscal 1993. MEMSOF received \$2.7 million from the Driver’s Education Fund and \$41.7 million in motor vehicle registration fees. The change to a biennial registration system created a one-time windfall.<sup>1</sup>

Exhibit 2  
MEMSOF Revenues vs. Expenditures  
Fiscal 1993-2006



MEMSOF: Maryland Emergency Medical System Operations Fund

Source: Department of Legislative Services

<sup>1</sup> Before fiscal 2003, car owners paid registration fees on an annual basis. The system was then changed to a biennial basis where car owners pay their registration fees one time to cover two years. In fiscal 2003, the Maryland Vehicle Administration required half of car owners to register biennially and the other half to register for one year (and then register the next year biennially). This provided revenue for three years worth of registrations (one half paid for two years and the other half paid for one year).

### *MEMSOF – Fiscal 2008 Budget Overview*

From fiscal 1994 through 1998, revenues stayed close to expenditures and were lower than expenditures in fiscal 1994 and 1996. From fiscal 1999 through 2001, expenditures were higher than revenues. The gap between expenditures and revenues increased during each of these years. By fiscal 2001, expenditures were \$9.5 million higher than revenues. Money provided to the Amoss Fund increased from \$5.0 million per year to \$7.5 million in fiscal 1999 and then from \$7.5 million to \$10.0 million in fiscal 2000. Fiscal 2001 saw the addition of \$500,000 for LIRLA and \$3.5 million for Shock Trauma Center facility and equipment renewal. In fiscal 2002, revenues exceeded expenditures with the \$3 increase from \$8 to \$11 in motor vehicle registration fees. Revenues jumped from \$35.2 million in fiscal 2001 to \$48.0 million in fiscal 2002.

Revenues and expenditures fluctuated from fiscal 2003 through 2006. Revenues exceed expenditures in three of the four years. However, in fiscal 2004, expenditures exceeded revenues, due largely to a one-time transfer of \$5 million to VCAF. This amount is being paid back at \$1 million per year from fiscal 2005 to 2009.

Exhibit 2 illustrates that, over time, growth in expenditures will outpace growth in revenues. From fiscal 1993 to 2006, revenues grew by 1.6%. During the same period, expenditures grew by 4.4%. **Appendix 2** provides detail on revenues and expenditures from fiscal 1993 to 2006.

**Exhibit 3** shows MEMSOF expenditures from fiscal 2006 to 2008. The fiscal 2008 allowance for all MEMSOF expenditures decreases by \$1.9 million from the fiscal 2007 working appropriation. This decrease is mainly due to one-time maintenance expenses for the MSP, Aviation Division in fiscal 2007.

*MEMSOF – Fiscal 2008 Budget Overview*

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**Exhibit 3**  
**MEMSOF Expenditures**  
**Fiscal 2006-2008**  
**(\$ in Thousands)**

	<u>2006</u> <u>Actual</u>	<u>2007</u> <u>Approp.</u>	<u>2008</u> <u>Allowance</u>	<u>2007-08</u> <u>Change</u>	<u>2007-08</u> <u>% Change</u>
MD Fire and Rescue Institute (MFRI) R75T00.01	\$6,108	\$6,437	\$6,751	\$314	4.9%
MD Inst. of Emer. Med. Serv. Sys. (MIEMSS) D53T00.01	10,392	11,346	10,878	-468	-4.1%
Shock Trauma Center (UMMS) R55Q00.01	3,117	3,200	3,264	64	2.0%
Shock Trauma Center Capital Equipment (UMMS) R55Q00.01	1,500	3,500	3,500	0	0.0%
Maryland Emergency Management Agency (MEMA) – Grants to Local Fire, Rescue, and Ambulance (Amoss Fund) D50H01.06	10,000	10,000	10,000	0	0.0%
MD State Police, Aviation Division W00A01.02	16,768	19,632	17,826	-1,806	-9.2%
MEMA – Volunteer Company Assistance Fund D50H01.06	1,404	1,400	1,400	0	0%
<b>Total</b>	<b>\$49,289</b>	<b>\$55,515</b>	<b>\$53,619</b>	<b>-\$1,896</b>	<b>-3.4%</b>

MEMSOF: Maryland Emergency Medical System Operations Fund

UMMS: University of Maryland Medical System

Source: Governor's Budget Books, Fiscal 2008

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## *Issues*

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### **1. MEMSOF Forecast**

**Appendix 1** provides a MEMSOF forecast from fiscal 2003 through 2020. The forecast rests on the following the Department of Legislative Services (DLS) assumptions:

- **MFRI:** For all but one year of MEMSOF’s history, MFRI has received an annual inflationary increase of anywhere from 3.1 to 13.8%. The attached forecast assumes a 5.5% annual increase through fiscal 2020.
- **MIEMSS:** The attached forecast assumes a 4.4% annual rate of inflation through fiscal 2020 to account for long-term growth in the agency.
- **Aid to UMMS:** Aid to UMMS contains two components: (1) Shock Trauma operating subsidy; and (2) short-term assistance for the replacement and modernization of aging medical equipment, technologies, and infrastructure at Shock Trauma.

The Shock Trauma Center operating subsidy was level funded for much of fiscal 1993 through 1998. Beginning in fiscal 1999 and continuing through fiscal 2004, Shock Trauma began to receive a 2.0 to 4.0% annual inflationary increase. There is no inflationary increase for fiscal 2005. Based on a 10-year average, the attached forecast assumes a 1.1% annual inflationary increase for the Shock Trauma subsidy through fiscal 2020.

Beginning in fiscal 2001, Shock Trauma began to receive \$3.5 million per year for the replacement and modernization of aging medical equipment. The \$3.5 million appropriation is expected to continue through fiscal 2011. The attached forecast assumes the end of this appropriation after fiscal 2011.

- **Amoss Fund:** From fiscal 1993 through 1999, the Amoss Fund received \$5.0 million per year. The amount was increased to \$7.5 million in fiscal 1999 and then \$10 million in fiscal 2000. These increases were non-statutory budget enhancements. There were discussions during the 1990s of providing a 3% annual adjustment, but this has never occurred. The amount has remained at \$10.0 million per year since fiscal 2000. The attached forecast assumes level funding of \$10.0 million per year through fiscal 2020.
- **Maryland State Police, Aviation Division:** MSP switched from a 70/30 to an 80/20 special fund/general fund split in fiscal 2003. The split has remained at 80/20 through the fiscal 2008 allowance. However, the attached forecast assumes a 75/25 split and a 6.8% annual rate of inflation through fiscal 2020.

Statute requires that MEMSOF support the medically oriented functions of the Aviation Division. The fund is not required to support the other missions of the division which include

### *MEMSOF – Fiscal 2008 Budget Overview*

law enforcement; search and rescue; and homeland security. In recent years, the proportion of medically oriented functions has fallen relative to the other functions. In fiscal 2006, 72.9% of the fleet's flight time resulted from Medevac operations. As such, an 80/20 split is no longer appropriate.

- **VCAF:** Beginning in fiscal 2001, through the Board of Public Works, the loan component of VCAF received a grant of \$500,000 for volunteer fire, rescue, and ambulance companies. The amount was increased to \$1 million in fiscal 2002 and continued through the fiscal 2008 allowance. There is a non-statutory agreement to continue providing funds until the State has contributed \$20 million to the fund. Chapter 416 of 2006 established an additional revenue source for VCAF. The legislation requires half of the revenue generated from a traffic citation surcharge be credited to the fund. The other half is credited to a new State Police Helicopter Replacement Fund. This revenue enhancement will significantly shorten the time it will take to reach the \$20 million cap. As such, this forecast assumes that the \$1 million contribution to VCAF will discontinue after fiscal 2011.

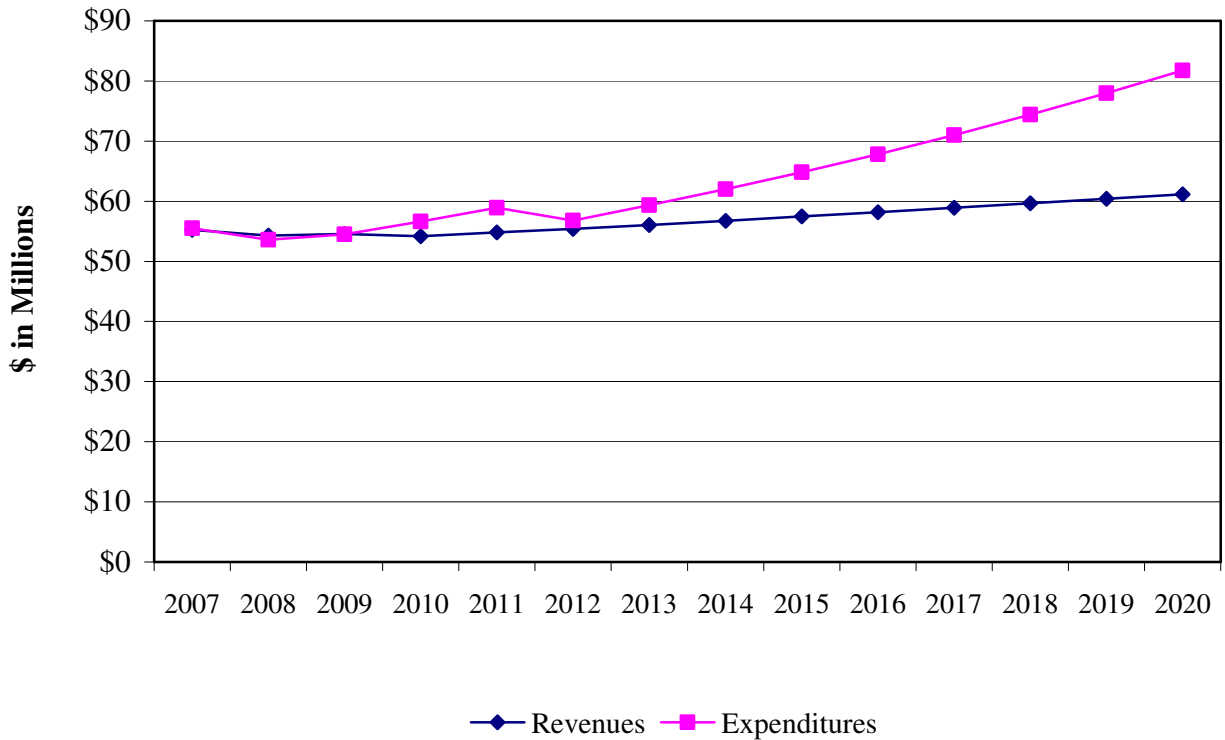
\$5,000,000 was transferred in fiscal 2004 from MEMSOF to the loan fund to be repaid from fiscal 2005 through 2009. No repayments are included in the forecast after fiscal 2009. The forecast also assumes the long-term continuation of \$400,000 annually to VCAF for its grant component.

The forecast shows that from fiscal 2008 through 2020, revenues grow by 1.25%. During the same period, expenditures grow by 3.6%. Over time, growth in expenditures will outpace growth in revenues. Based on current assumptions, MEMSOF is viable until fiscal 2013. This estimate is heavily reliant upon the reduction in MEMSOF's share of the Aviation Division expenditures and the discontinuation of the Shock Trauma capital funding. **Exhibit 4** shows the divergence between long-term revenue and expenditures.

On the revenue side, the motor vehicle registration fee revenues are not sensitive to inflation. This will require periodic revenue enhancements and/or alternative revenue sources to keep MEMSOF viable. For example, to serve as a one-time enhancement, a balance from the Maryland Trauma Physicians Fund could be transferred to the fund. That fund is similarly financed with a \$5 biennial surcharge on all Maryland vehicle registrations. It subsidizes physicians and hospitals that provide trauma care. The fund reimburses trauma physicians for uncompensated care losses, emergency on-call services, and undercompensated care. However, since its inception in fiscal 2004, the Trauma Fund has collected substantially more in revenues than it has disbursed. At the end of fiscal 2006, the fund balance was approximately \$16.6 million.

Finally, there is no provision made in the forecast for MSP helicopter replacement which will need to begin in fiscal 2009.

**Exhibit 4  
MEMSOF Forecast  
Fiscal 2007-2020**



MEMSOF: Maryland Emergency Medical System Operations Fund

Source: Department of Legislative Services

**DLS recommends that the Maryland General Assembly consider legislation that specifies that the MEMSOF's share of the costs of the Aviation Division be proportionate to the level of activities dedicated to medically oriented functions in the most recently completed fiscal year.**

**DLS further recommends that budget bill language be added expressing the intent of the Maryland General Assembly that the EMS fund provide funds to the Aviation Division in fiscal 2009 proportionate to the medically oriented functions in fiscal 2007.**

**Additionally, DLS recommends that budget bill language be added that expresses the intent of the Maryland General Assembly that fiscal 2011 be the final year of the Shock Trauma Center Capital Equipment grant.**

## **2. Helicopter Replacement and Revenue Enhancements**

The Maryland State Police Aviation Command (MSPAC) operates a fleet of 12 twin-engine Eurocopter Dauphin helicopters located at 8 operating bases throughout the State as part of the State's Medevac services. The current fleet is aging, and it is generally considered that replacement is now advisable.

The first of MSPAC's current fleet was purchased in 1989. In 1990, three helicopters were purchased through a gas tax increase and a lease/purchase agreement partially funded through the MEMSOF. Also, in 1994 and again in 1999, monies were borrowed from the fund to purchase a total of three more helicopters. Given MEMSOF's history with previous helicopter purchases and its obligation to partially fund the Aviation Division's operating expenses, the fund is an appropriate place to begin discussions to fund a fleet replacement.

According to current DLS assumptions, MEMSOF is viable until fiscal 2013. This does not include any assumptions for helicopter replacement.

**Appendix 3** provides a detailed DLS analysis of the replacement program. The analysis concludes that a four-year replacement schedule would ensure standardization of the fleet, an issue important for parts, maintenance, and emergency training uniformity. It further notes a number of revenue enhancements that would be appropriate for funding the fleet's replacement. It is estimated that it would require approximately \$109 million over four years for this task.

- **One-time Lump Sum:** Under this option, the State could provide a one-time lump sum of funds from general funds, the Transportation Trust Fund (TTF), or some other fund balances. Use of cash, either phased or in a lump sum, would represent the least expensive form of financing. In particular, a lump sum placed in a sinking fund would require less than the full amount needed as interest earnings would mitigate the funding needed. However, given the long-term forecast of the general fund and the magnitude of the cost, it is not likely that either the general fund or the TTF would be in a position to provide the needed funding.

Perhaps more appropriately, another lump sum option would be to designate a portion of funds for Medevac replacement in conjunction with the next transportation revenue increase. This was originally done with the 1987 gas tax increase. Roughly \$100 million would be needed to capitalize a sinking fund for this purpose, when combined with traffic violation surcharge revenue as discussed below.

- **Traffic Violation Surcharge Revenue:** Chapter 416 of 2006 established a State Police Helicopter Replacement Fund within the Public Safety Article. The fund receives a \$7.50 surcharge assessed for certain traffic convictions. An estimated \$1.0 million would be credited to the fund in fiscal 2007, based on its effective date, and \$1.5 million credited in fiscal 2008 and annually beyond. While these levels of funding would mitigate the overall revenue need, the direct revenue and accrued interest earnings would not approach the level of funding needed to finance the entire fleet over the short term.

### *MEMSOF – Fiscal 2008 Budget Overview*

- **Gas Tax Increase:** Similar to a cash lump sum, sufficient funds could be raised through a short-term increase in the gas tax for two years. A 1½-cent two-year increase, in conjunction with the Chapter 416 revenue, would provide funding sufficient for a four-year replacement option. It would raise approximately \$51.5 million each year.
- **Lease/Purchase:** Purchase of the replacement fleet could also occur under a lease/purchase arrangement with payment from the operating budget over multiple years. The exact cost would depend on the length of maturity of the lease/purchase agreement and the financing terms. Funds could come from MEMSOF with a general fund match. A lease/purchase agreement would likely require a large registration surcharge increase in order to keep MEMSOF viable since this fund also supports many other ongoing programs in the budget.
- **General Obligation Bonds:** Given that the fleet is expected to be in use in excess of 20 years, debt could be an appropriate financing option. Assuming general obligation bonds are issued over a four-year replacement cycle, the cost to finance the \$109.0 million needed for replacement could be as much as \$149.6 million (a difference of \$40.7 million). This assumes a 5% interest rate and that the only cash available to augment debt is what is available in the State Police Helicopter Replacement Fund from traffic citation surcharges.

The Department of Budget and Management has contracted with a consultant to review the State's use of helicopters. The study will conduct a mission analysis and will make recommendations on what it sees as the best use of the fleet. Their conclusions may alter the type and number of helicopters purchased. Further, the study will also make funding recommendations and will design parameters of the procurement process.

In order for a procurement to begin in fiscal 2009, the procurement documents and parameters must be developed as soon as possible.

**DLS recommends that the Administration discuss its intentions regarding the timing of the replacement of the fleet and plans for financing the replacement given the current financial constraints in the State budget.**

## ***Recommended Actions***

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1. Add the following section:

SECTION XX. AND BE IT FURTHER ENACTED, That it is the intent of the General Assembly that in fiscal 2009, appropriations from the Maryland Emergency Medical System Operations Fund to the Maryland State Police Aviation Division be proportioned based on the level of activity related only to medically oriented functions in fiscal 2007.

**Explanation:** Statute requires that the Maryland Emergency Medical System Operations Fund (MEMSOF) support the medically oriented functions of the Aviation Division. The fund is not required to support the other missions of the division which include law enforcement, search and rescue, and homeland security. In recent years, the proportion of medically oriented functions has fallen relative to the other functions; however, the level of funding from MEMSOF has not decreased commensurately.

2. Add the following section:

SECTION XX. AND BE IT FURTHER ENACTED, That it is the intent of the General Assembly that fiscal 2011 be the final year for appropriations from the Maryland Emergency Medical System Operations Funds for the R Adams Cowley Shock Trauma Center Capital Equipment grant.

**Explanation:** The grants from the Maryland Emergency Medical System Operations Fund for Shock Trauma Center Capital Equipment are outside the review of the Emergency Medical Services Board and have continued beyond what was expected. The long-term viability of the fund would be compromised if this grant is continued beyond fiscal 2011.

**EMS Operations Fund Statements  
Fiscal 2006-2013**

<u>Agency Name</u>	<u>2006 Actual</u>	<u>2007 Approp</u>	<u>2008 Allowance</u>	<u>2009 Estimate</u>	<u>2010 Estimate</u>	<u>2011 Estimate</u>	<u>2012 Estimate</u>	<u>2013 Estimate</u>
<b>Beginning Balance (7/1)</b>	<b>\$5,244,770</b>	<b>\$8,273,230</b>	<b>\$8,006,398</b>	<b>\$8,685,574</b>	<b>\$8,730,569</b>	<b>\$6,283,029</b>	<b>\$2,173,087</b>	<b>\$790,348</b>
MVA Registration Fees – EMS Ops. Fund	51,394,270	51,805,424	52,686,116	53,344,692	54,011,501	54,686,645	55,370,228	56,062,356
Interest Income	237,551	460,190	446,744	223,504	192,672	108,519	38,030	0
GF Loan Repayment and Other	1,292,904	2,982,891	1,165,884	1,000,000	0	0	0	0
<b>Current Year Revenues</b>	<b>52,924,725</b>	<b>55,248,505</b>	<b>54,298,744</b>	<b>54,568,197</b>	<b>54,204,173</b>	<b>\$54,795,164</b>	<b>\$55,408,258</b>	<b>\$56,062,356</b>
<b>Total Available Revenues</b>	<b>58,169,495</b>	<b>63,521,735</b>	<b>62,305,142</b>	<b>63,253,771</b>	<b>62,934,742</b>	<b>\$61,078,192</b>	<b>\$57,581,345</b>	<b>\$56,852,704</b>
MD Fire and Rescue Institute (UMCP)	6,108,283	6,437,055	6,751,376	7,119,744	7,508,210	7,917,872	8,349,885	8,805,470
MD Inst. of Emer. Med. Serv. Sys.	10,391,610	11,346,251	10,878,297	11,355,587	11,853,817	12,373,908	12,916,818	13,483,549
Shock Trauma Center (UMMS)	3,117,381	3,200,000	3,264,000	3,299,897	3,336,189	3,372,879	3,409,974	3,447,476
STC Replaced Equipment (UMMS)	1,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000		
Grants to Local Fire, Resc. and Amb.	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
MD State Police – Aviation Div.	16,768,251	19,632,031	17,825,895	17,847,975	19,053,498	20,340,446	21,714,320	23,180,991
Volunteer Company Assistance Fund	1,403,744	1,400,000	1,400,000	1,400,000	1,400,000	1,400,000	400,000	400,000
<b>Current Year Expenditures</b>	<b>49,289,269</b>	<b>55,515,337</b>	<b>53,619,568</b>	<b>54,523,202</b>	<b>56,651,713</b>	<b>\$58,905,105</b>	<b>\$56,790,997</b>	<b>\$59,317,486</b>
<b>Ending Balance (6/30)</b>	<b>8,880,226</b>	<b>8,006,398</b>	<b>8,685,574</b>	<b>8,730,569</b>	<b>6,283,029</b>	<b>\$2,173,087</b>	<b>\$790,348</b>	<b>-\$2,464,782</b>

EMS: Emergency Medical Services  
 GF: General Fund  
 MVA: Motor Vehicle Administration  
 UMCP: University of Maryland, College Park  
 UMMS: University of Maryland Medical System  
 STC: Shock Trauma Center

**EMS Operations Fund Statements  
Fiscal 2014-2020**

<u>Agency Name</u>	<u>2014 Estimate</u>	<u>2015 Estimate</u>	<u>2016 Estimate</u>	<u>2017 Estimate</u>	<u>2018 Estimate</u>	<u>2019 Estimate</u>	<u>2020 Estimate</u>
<b>Beginning Balance (7/1)</b>	<b>-\$2,464,782</b>	<b>-\$7,694,822</b>	<b>-\$15,049,354</b>	<b>-\$24,687,571</b>	<b>-\$36,778,878</b>	<b>-\$51,503,550</b>	<b>-\$69,053,412</b>
MVA Registration Fees – EMS Ops. Fund	56,763,135	57,472,674	58,191,083	58,918,471	59,654,952	60,400,639	61,155,647
Interest Income	0	0	0	0	0	0	0
GF Loan Repayment and Other	0	0	0	0	0	0	0
<b>Current Year Revenues</b>	<b>\$56,763,135</b>	<b>\$57,472,674</b>	<b>\$58,191,083</b>	<b>\$58,918,471</b>	<b>\$59,654,952</b>	<b>\$60,400,639</b>	<b>\$61,155,647</b>
<b>Total Available Revenues</b>	<b>\$54,298,353</b>	<b>\$49,777,853</b>	<b>\$43,141,729</b>	<b>\$34,230,901</b>	<b>\$22,876,074</b>	<b>\$8,897,089</b>	<b>-\$7,897,764</b>
MD Fire and Rescue Institute (UMCP)	9,285,913	9,792,570	10,326,870	10,890,323	11,484,519	12,111,136	12,771,942
MD Inst. of Emer. Med. Serv. Sys.	14,075,145	14,692,698	15,337,345	16,010,277	16,712,735	17,446,013	18,211,463
Shock Trauma Center (UMMS)	3,485,391	3,523,722	3,562,476	3,601,655	3,641,266	3,681,312	3,721,798
STC Replaced Equipment (UMMS)							
Grants to Local Fire, Resc. and Amb.	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
MD State Police – Aviation Div.	24,746,726	26,418,217	28,202,608	30,107,523	32,141,104	34,312,041	36,629,611
Volunteer Company Assistance Fund	400,000	400,000	400,000	400,000	400,000	400,000	400,000
<b>Current Year Expenditures</b>	<b>\$61,993,175</b>	<b>\$64,827,207</b>	<b>\$67,829,299</b>	<b>\$71,009,779</b>	<b>\$74,379,624</b>	<b>\$77,950,501</b>	<b>\$81,734,814</b>
<b>Ending Balance (6/30)</b>	<b>-\$7,694,822</b>	<b>-\$15,049,354</b>	<b>-\$24,687,571</b>	<b>-\$36,778,878</b>	<b>-\$51,503,550</b>	<b>-\$69,053,412</b>	<b>-\$89,632,579</b>

**MEMSOF History  
Fiscal 1994-1999**

<u>Agency Name</u>	<u>1994 Actual</u>	<u>1995 Actual</u>	<u>1996 Actual</u>	<u>1997 Actual</u>	<u>1998 Actual</u>	<u>1999 Actual</u>
<b>Beginning Balance (7/1)</b>	<b>16,288,582</b>	<b>12,800,866</b>	<b>14,257,831</b>	<b>12,983,584</b>	<b>14,867,223</b>	<b>16,028,484</b>
MVA Registration Fees – EMS Ops. Fund	28,549,707	31,404,789	29,426,000	31,946,633	31,246,058	34,240,399
Interest Income	0	705,100	817,582	506,626	661,778	608,995
GF Loan Repayment and Other	0	0	0	0	0	4,075,000
<b>Current Year Revenues</b>	<b>28,549,707</b>	<b>32,109,889</b>	<b>30,243,582</b>	<b>32,453,259</b>	<b>31,907,836</b>	<b>38,924,394</b>
<b>Total Available Revenues</b>	<b>44,838,289</b>	<b>44,910,755</b>	<b>44,501,413</b>	<b>45,436,843</b>	<b>46,775,059</b>	<b>54,952,878</b>
MD Fire and Rescue Institute (UMCP)	3,036,719	3,406,145	3,706,145	3,822,105	3,990,605	4,360,605
MD Inst. of Emer. Med. Serv. Sys.	7,000,000	7,311,459	7,519,955	7,324,181	7,709,291	8,501,799
Shock Trauma Center (UMMS)	2,350,000	2,900,000	2,900,000	2,900,000	2,900,000	3,017,160
STC Replaced Equipment (UMMS)					0	0
Grants to Local Fire, Resc. and Amb.	4,950,000	4,950,000	5,095,000	5,095,000	5,245,000	7,500,000
MD State Police – Aviation Div.	14,700,704	12,085,320	12,296,729	11,428,334	10,901,679	12,298,093
Volunteer Company Assistance Fund	0	0	0	0	0	3,953,110
<b>Current Year Expenditures</b>	<b>32,037,423</b>	<b>30,652,924</b>	<b>31,517,829</b>	<b>30,569,620</b>	<b>30,746,575</b>	<b>39,630,767</b>
<b>Ending Balance (6/30)</b>	<b>12,800,866</b>	<b>14,257,831</b>	<b>12,983,584</b>	<b>14,867,223</b>	<b>16,028,484</b>	<b>15,322,111</b>

**MEMSOF History  
Fiscal 2000-2005**

<u>Agency Name</u>	<u>2000 Actual</u>	<u>2001 Actual</u>	<u>2002 Actual</u>	<u>2003 Actual</u>	<u>2004 Actual</u>	<u>2005 Actual</u>
<b>Beginning Balance (7/1)</b>	<b>15,322,111</b>	<b>10,011,093</b>	<b>2,442,192</b>	<b>5,177,485</b>	<b>7,464,772</b>	<b>4,769,222</b>
MVA Registration Fees – EMS Ops. Fund	33,202,712	35,235,336	48,030,516	50,440,822	50,030,199	50,009,403
Interest Income	539,785	238,496	138,770	145,005	94,562	137,781
GF Loan Repayment and Other	853,224	1,976,566	532,156	68,377	754,933	1,000,000
<b>Current Year Revenues</b>	<b>34,595,721</b>	<b>37,450,398</b>	<b>48,701,442</b>	<b>50,654,204</b>	<b>50,879,694</b>	<b>51,147,184</b>
<b>Total Available Revenues</b>	<b>49,917,832</b>	<b>47,461,491</b>	<b>51,143,634</b>	<b>55,831,689</b>	<b>58,344,466</b>	<b>55,916,406</b>
MD Fire and Rescue Institute (UMCP)	4,640,000	4,880,000	5,515,000	6,278,500	5,862,680	6,010,967
MD Inst. of Emer. Med. Serv. Sys.	8,603,900	9,058,000	9,579,000	9,691,863	10,145,637	10,399,966
Shock Trauma Center (UMMS)	3,107,675	3,200,905	3,264,923	3,362,871	3,463,757	3,463,757
STC Replaced Equipment (UMMS)	0	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
Grants to Local Fire, Resc., and Amb.	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
MD State Police – Aviation Div.	13,555,164	13,880,394	13,107,226	14,533,683	14,199,426	15,893,202
Volunteer Company Assistance Fund	0	500,000	1,000,000	1,000,000	6,403,744	1,403,744
<b>Current Year Expenditures</b>	<b>39,906,739</b>	<b>45,019,299</b>	<b>45,966,149</b>	<b>48,366,917</b>	<b>53,575,244</b>	<b>50,671,636</b>
<b>Ending Balance (6/30)</b>	<b>10,011,093</b>	<b>2,442,192</b>	<b>5,177,485</b>	<b>7,464,772</b>	<b>4,769,222</b>	<b>5,244,770</b>

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# **Analysis of State Police Medevac Helicopter Fleet Replacement Issues**

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

**February 2007**

## Analysis of State Police Medevac Helicopter Fleet Replacement Issues

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### Introduction

Since 1970, the Maryland Department of State Police (DSP) has operated a system of aircraft to provide emergency medical evacuation (Medevac) services and other flight services to the State's citizens. The Maryland State Police Aviation Command (MSPAC) currently has a fleet of 12 helicopters and 2 fixed winged aircraft. Its mission has evolved to include medical evacuations, search and rescue, law enforcement, and most recently, homeland security.

Several reports have called for the replacement of the division's fleet of 12 twin-engine Eurocopter Dauphin helicopters. The helicopters were purchased over an 11-year period beginning in 1989. The life expectancy of the airframes was not certain when originally purchased; therefore, beginning in the late 1990s, a number of studies were requested to address the cost, timing, and financing for replacing the fleet. The most recent report was required by fiscal 2007 budget language.

The report submitted by the State Police makes a number of final recommendations relating both to the existing helicopter fleet as well as to its replacement. This includes the continued upgrade of the existing fleet for medical interiors, rotor blades, and sliding doors; a 9½-year replacement schedule starting in fiscal 2009; and consideration of a flight simulator to reduce use of actual airframe operating and maintenance costs.

The report did not, however, include a plan to finance the replacements as required by the budget language. Additionally, the report's suggested replacement schedule leaves questions about how to fulfill the stated goal of fleet standardization. The following analysis discusses the background of the State's Medevac helicopter fleet, reviews the recommendations of the State Police, explores related policy issues, and offers recommendations for consideration.

### Background

The Maryland State Police Aviation Command operates a fleet of 12 twin-engine Eurocopter Dauphin helicopters located at 8 operating bases throughout the State as part of the State's Medevac services. The operating bases are strategically located to best serve the geography and population of Maryland. **Exhibit 1** shows the location of each base.

**Exhibit 1**  
**List and Locations of State Police Helicopter Bases**

<u>Operating Base</u>	<u>Location</u>
Baltimore Section	Baltimore County
Washington Section	Prince George's County
Frederick Section	Frederick County
Salisbury Section	Wicomico County
Cumberland Section	Allegany County
Centreville Section	Queen Anne's County
Southern Maryland Section	St. Mary's County
Norwood Section	Montgomery County

Source: Department of State Police

Medevac operations began in Maryland in 1970 with a limited fleet of single engine Bell "Jet Ranger" helicopters. A crash involving one of these helicopters in 1986 prompted a review and ultimately the recommendation to upgrade and expand the fleet. The first of MSPAC's current fleet was purchased in 1989. The fleet consists of three models of aircraft, several of which have been modified to meet the latest models specifications. **Exhibit 2** shows when each model was purchased and, where appropriate, when the model was upgraded to new standards. Only three of the original models remain unmodified.

**Exhibit 2**  
**Medevac Helicopter Models**

<u>Year Purchased</u>	<u>Model</u>	<u>Retrofit Date</u>
1989	N-1	
1989	N-1	
1989	N-1	
1989	N-1M	February 2003
1989	N-1M	November 2000
1989	N-1M	October 2002
1990	N-1M	June 2001
1990	N-1M	May 2002
1990	N-1M	November 2001
1994	N-2	
1994	N-2	
1999	N-3	

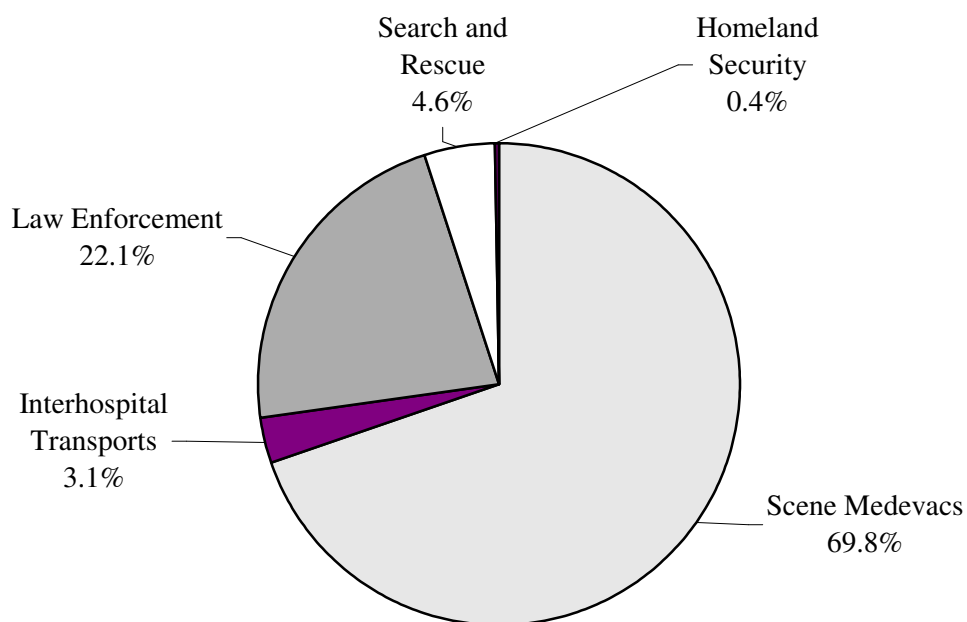
Source: Department of State Police

There is a rigorous maintenance schedule designed to maximize safety and to prolong the life of the aircraft. Regular inspections are required after every 25 hours and after every 100 hours of flight time. Routine maintenance is performed and any problems are corrected. After 600 hours of flight time, each aircraft undergoes a “T” inspection during which time the aircraft is disassembled down to the frame, and parts are inspected and replaced as needed. Finally, “G” inspections occur every 5,000 flight hours. This inspection involves a near complete dismantling of the aircraft in order for close inspection, repair, and maintenance.

The helicopters serve multiple missions in that they are also used for law enforcement, search and rescue operations, and homeland security. This structure is largely unique to Maryland. Most states do not operate on this scale nor provide a centralized dispatch system.

As shown in **Exhibit 3**, the vast majority of the fleet’s flight time is spent on medical evacuations, largely a result of traffic accidents. According to the division’s data, approximately 50.7% of its calendar 2006 missions were related to traffic incidents (1,869 of 3,685 of total patients transported). The remainder of the transports involves other medical emergencies, such as slip and falls, machinery accidents, and assaults.

**Exhibit 3**  
**MSPAC Mission Categories Flight Time**  
**Fiscal 2006**



Source: Department of State Police

## Funding History

As discussed, the helicopters were purchased over an 11-year period. **Exhibit 4** shows the combination of sources used to purchase the aircrafts.

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### Exhibit 4 Medevac Helicopter Purchase and Funding History (\$ in Millions)

<u>Year Purchased</u>	<u>Cost</u>	<u>Source of Funds</u>
1989	\$4.3	Gas tax increase <sup>(1)</sup>
1989	4.3	Gas tax increase <sup>(1)</sup>
1989	4.3	Gas tax increase <sup>(1)</sup>
1989	4.3	Gas tax increase <sup>(1)</sup>
1989	4.3	Gas tax increase <sup>(1)</sup>
1989	4.3	Gas tax increase <sup>(1)</sup>
1990	5.4	Gas tax increase/lease purchase GF/MEMSOF <sup>(2)</sup>
1990	5.4	Gas tax increase/lease purchase GF/MEMSOF <sup>(2)</sup>
1990	5.4	Gas tax increase/lease purchase GF/MEMSOF <sup>(2)</sup>
1994	5.3	TTF/general funds <sup>(3)</sup>
1994	5.3	TTF/general funds <sup>(3)</sup>
1999	6.3	General funds <sup>(4)</sup>
	<b>\$58.8</b>	

<sup>(1)</sup> \$31 million fund established in conjunction with a 5-cent gas tax increase enacted in 1987.

<sup>(2)</sup> Lease purchase payments in State Police budget at 70% MEMSOF/30% general funds. Cost includes lease payment totaling \$2.4 million. Purchase price of each helicopter was \$4.6 million

<sup>(3)</sup> Combination Transportation Trust Fund and funds borrowed from MEMSOF and repaid from general funds.

<sup>(4)</sup> Funds borrowed from MEMSOF and later repaid from general funds.

MEMSOF: Maryland Emergency Medical System Operations Fund

TTF: Transportation Trust Fund

Source: Department of Legislative Services

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- \$30.3 million from special funds set aside as part of the 1987 gas tax increase paid for the full cost of the first six helicopters and provided a portion of the funding for three others. A portion of funds were also used for the training of pilots, mechanics, and purchase of equipment;

- \$15.4 million from general funds;
- \$6.6 million in special funds from the Maryland Emergency Medical System Operations Fund (MEMSOF); and
- \$6.5 million in special funds from the Transportation Trust Fund.

The reliance on the gas tax increase is reflective of the significant impact of traffic accidents on the workload of the fleet.

## **Replacement of Fleet**

The department's rigorous maintenance schedule and the retrofits of many of the original models have contributed to a longer than expected lifespan for the fleet. However, to address safety concerns and to maximize potential trade-in values, a timely replacement schedule is required.

Several priorities have emerged as critical to a new fleet of helicopters. Firstly, the 2006 DSP report emphasizes the importance of standardized airframes. Because of the extended time frame for procuring the 12 helicopters, Maryland currently has three different versions of the Dauphin. Having different airframe versions raises a number of operational issues related to:

- **Safety:** DSP notes that in the event of a critical engine malfunction a pilot would have to use different emergency procedures for each model. The agency is also currently retrofitting some of the helicopters because the door to the helicopter service area on the earlier versions opens out and causes the crews and field care providers to work closer to the ends of the rotor blade system causing a safety issue. Later versions have a sliding door, which is what will be used for the retrofit.
- **Maintenance:** Multiple versions of the airframe require a larger parts inventory and do not permit efficiencies that would be gained by parts pooling and interoperability.
- **Training:** Having one airframe reduces hours for training pilots and mechanics.

Standardization would result in lower costs for parts inventory and for training. It would allow the department more flexibility in flight and mechanic crews. Additionally, a standard helicopter will reduce confusion for other emergency management individuals, such as hospital staff or scene providers.

The department has recommended a 9½-year replacement schedule. However, based on the past procurement pattern, a new helicopter model is designed and released about every four years, leaving prior models outdated and unavailable for purchase. To repeat this procurement period would likely be antithetical to a standardized fleet.

To ameliorate the problems associated with a disparate fleet, the procurement time must be minimized so as to ensure uniformity. Additionally, acquisition at one time can cause maintenance overlap problems, such as were experienced with the “G” inspections during the 1990s. However, too long of a procurement period will result in an inconsistent fleet. Accordingly, four years would be an optimal time frame to procure a replacement fleet.

Secondly, the inclusion of updated equipment is also a priority. Since the purchase of the first helicopter in MSPAC’s current fleet, its mission has expanded to include a critical homeland security role. Additionally, aircraft technology and equipment has evolved beyond the point which currently owned helicopters can accommodate. **Exhibit 5** shows the equipment needs as recommended by the department’s report, detailed by mission type.

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**Exhibit 5**  
**Department of State Police Assessment of  
Replacement Helicopter Equipment Needs**

Medevac	<ul style="list-style-type: none"> <li>Wire Strike Protection</li> <li>Night Vision Imaging Systems</li> <li>Terrain Avoidance Warning Systems</li> <li>Weather Avoidance (Enhanced or Synthetic Vision)</li> <li>Helicopter Service Area Equipment</li> <li>Helicopter Service Area Ergonomics</li> <li>Reduce Threat of Body Hazards within the Aircraft</li> <li>Need for Interior Modular Components for Quick Replacement</li> </ul>
Law Enforcement	<ul style="list-style-type: none"> <li>Thermal Imaging Device</li> <li>Searchlights</li> <li>800 MHz Radio Communication</li> <li>Airborne Navigation</li> <li>Fenestron (Tail Rotor) Redesign</li> </ul>
Search and Rescue	<ul style="list-style-type: none"> <li>Hoist Equipment</li> <li>Hoist Mounted Video</li> <li>Added Safety Features (Flotation Equipment, etc.)</li> </ul>
Homeland Security	<ul style="list-style-type: none"> <li>Surveillance</li> <li>Reconnaissance Recording and Geocoding</li> <li>Video/Data Downlink</li> <li>Assisting Federal Authorities (“Plug and Play” Avionics)</li> <li>Utility Transport Capability</li> </ul>

Source: Department of State Police, Maryland State Police Aviation Command, Strategic Plan for Helicopter Replacement Program

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The scope of this report does not include an analysis of the equipment needs of the MSPAC. It should be noted, however, that while it is important to have advanced equipment that will expand to meet future needs, it is equally important to be mindful of limited resources. The procurement of a new fleet must balance new technology with reasonable expenditure expectations. It is assumed, for the purposes of this report, that the assessment of needs as provided by MSPAC is appropriate.

## **Financing**

Accommodating the dual priorities of a standardized fleet and updated equipment will impact the costs of the aircraft replacement. Although not as onerous as a one-time purchase of 12 helicopters, a four-year replacement schedule will require concentrated funding causing a fairly significant impact on the budget in the short term.

Estimates of the purchase price of new aircraft are much higher than the original cost of the current fleet. In addition to inflation, the higher costs are due to:

- additional technologies to improve safety that are not present in the current fleet, such as night vision imaging systems and terrain avoidance equipment;
- upgrades of existing technology, such as to the radio system which should be 800 MHz, or thermal imaging systems which was a first generation system when acquired but is now obsolete; and
- homeland security-related technologies that are needed due to the addition of this new aspect to the existing Medevac, law enforcement, and search and rescue missions. For example, DSP notes that the helicopters should have the ability to download video and data and also be able to record, geocode, and mark specific points for reconnaissance purposes.

The best estimate of the costs of replacement, considering a four-year purchase period, updated equipment and estimated trade-in values is shown in **Exhibit 6**.

**Exhibit 6**  
**Cost of Replacement**  
**(\$ in Thousands)**

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>Total</u>
3 Helicopters Per Year	\$32,076	\$33,039	\$34,029	\$35,049	\$134,193
Estimated Trade-in Value	3,555	7,181	7,051	7,501	25,288
<b>Total</b>	<b>\$28,521</b>	<b>\$25,858</b>	<b>\$26,978</b>	<b>\$27,548</b>	<b>\$108,905</b>

Source: Department of State Police; HeliValue\$, Inc.

Given an expedited purchase period and higher priced aircraft, options for financing the replacements become limited. In short, either an identified revenue source or general funds (cash) could be allocated within the operating budget, or based on the extended lifespan of the aircraft, general obligation bonds could be issued (debt).

### Cash Option

To finance a project with general funds or a dedicated revenue source is generally the least expensive form of financing in that it requires no payments of interest. However, it necessitates a choice to fund specific projects over others with limited current resources, or it requires an increase in fees or taxes to create a dedicated funding stream. The following cash financing options (or combination of the following options) are the most appropriate means to replace the fleet.

- **One-time Lump Sum:** Under this option, the State could provide a one-time lump sum of funds from general funds, the Transportation Trust Fund (TTF), or some other fund balances. Use of cash, either phased or in a lump sum, would represent the least expensive form of financing. In particular, a lump sum placed in a sinking fund would require less than the full amount needed as interest earnings would mitigate the funding needed. However, given the long-term forecast of the general fund and the magnitude of the cost, it is not likely that either the general fund or the TTF would be in a position to provide the needed funding.

Another lump sum option would be to designate a portion of funds for Medevac replacement in conjunction with the next transportation revenue increase. This was originally done with the 1987 gas tax increase. Roughly \$100 million would be needed to capitalize a sinking fund for this purpose, when combined with the traffic violation surcharge revenue.

- **Traffic Violation Surcharge Revenue:** Chapter 416 of 2006 established a State Police Helicopter Replacement Fund within the Public Safety Article. The fund receives a \$7.50 surcharge assessed for certain traffic convictions. An estimated \$1.0 million would be credited to the fund in fiscal 2007, based on its effective date, and \$1.5 million credited in fiscal 2008 and annually beyond. While these levels of funding would mitigate the overall revenue need, the direct revenue and accrued interest earnings would not approach the level of funding needed to finance the entire fleet over the short term.
- **Gas Tax Increase:** Similar to a cash lump sum, sufficient funds could be raised through a short-term increase in the gas tax for two years. A 1½-cent two-year increase, in conjunction with the Chapter 416 revenue, would provide funding sufficient for a four-year replacement option. It would raise approximately \$51.5 million each year.
- **Lease/Purchase:** Purchase of the replacement fleet could also occur under a lease/purchase arrangement with payment from the operating budget over multiple years. The exact cost would depend on the length of maturity of the lease/purchase agreement and the financing terms. Funds could come from MEMSOF with a general fund match, which is currently based on a ratio of 80% MEMSOF/20% general funds. A lease/purchase agreement would likely require a large registration surcharge increase in order to keep MEMSOF viable since this fund also supports many other ongoing programs in the budget.

## Debt Option

Debt is the most manageable form of financing in terms of annual fiscal obligations. However, in the long run, it becomes the most expensive financing option.

The Joint Legislative Committee to Study and Make Recommendations about the State's Emergency Medical Response System (established in Chapter 385 of 2003) recommended issuing 15-year general obligation debt to replace the Medevac fleet. Given that the fleet is expected to be in use in excess of 20 years, debt could be an appropriate financing option. There are many demands, including additional school construction, on the general obligation capital program. However, the Capital Debt Affordability Committee has authorized an additional \$100 million for fiscal 2008.

Assuming general obligation bonds are issued over a four-year replacement cycle, the cost to finance the \$108.9 million needed for replacement could be as much as \$149.6 million (a difference of \$40.7 million). This assumes a 5% interest rate and that the only cash available to augment debt is what is available in the State Police Helicopter Replacement Fund from traffic citation surcharges. Also, annual debt service rises significantly from the first year of issuance to the fifth year.

To flatten annual payments, additional cash would be required in the first four years. This would also result in lower long-term costs due to lower interest expenses. If, over the first four years, an additional \$15 million in cash could be generated through one of the above options (or by any other means), annual debt service would be close to \$9.0 million. The total cost to finance the replacements would be \$143.3 million, a savings of \$6.3 million over the life of the bonds if there were no additional cash provided in the first four years. However, financing a replacement fleet in this manner would still add \$34.4 million to the original costs.

### **Additional Administrative Study Is Ongoing**

The Department of Budget and Management has contracted with a consultant to review the State's use of helicopters. The study will conduct a mission analysis and will make recommendations on what it sees as the best use of the fleet. Their conclusions may alter the type and number of helicopters purchased. Further, the study will also make funding recommendations. Specifically, the task order for the study, which is being overseen by a multi-agency project team, has four deliverables in the form of final reports or finished documents:

- an analysis of the mission of the helicopter fleet;
- a cost-benefit analysis;
- a financing plan; and
- the development of final procurement documents.

This analysis assumed a continuation of the mission and responsibilities of the MSPAC. The consultant's study may recommend changes to that mission and thereby alter the fundamentals on which this analysis was based.

### **Conclusion**

The Maryland State Police Aviation Division serves as a vital component of the State's emergency medical system. Its current fleet has proved to be a safe and effective mode of transportation for critically injured patients across the State. However, as the fleet ages, the likelihood of mechanical malfunctions and related mishaps increase. This fact, combined with increasing maintenance costs and problems associated with lack of standardization, makes it an optimal time for the replacement of the fleet.

*Analysis of State Police Medevac Helicopter Fleet Replacement Issues*

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To ensure standardization of a new fleet, a compressed replacement schedule is recommended, placing a strain on the State's financial resources in the short term. A number of revenue sources were utilized during the last procurement period. A further consideration of those sources, as well as other revenue options as mentioned in this report, are warranted. Finally, as policy decisions are made regarding a specific financing option or combination of options, the Department of Legislative Services will be able to provide detailed fiscal estimates.