

WA01A
Department of State Police

State Police Helicopter Replacement (Statewide)

General Obligation Bonds **\$38,674,000**

Summary of Recommended Bond Actions

1. State Police Helicopter Replacement

Approve.

2. Section 12 Helicopter Replacement

Increase general obligation bond funding to allow for the purchase of an eleventh helicopter.

3. Section 13 Helicopter Replacement

Increase general obligation bond funding to allow for the purchase of an eleventh helicopter.

Bill Text: Provide funds to acquire new helicopters to upgrade the quality of the State helicopter fleet.

Project Description: The State is in the process of acquiring a fleet of at least 10 Augusta Westland AW 139 helicopters that will replace the current fleet of 11 Eurocopter Dauphin helicopters operated by the Maryland State Police Aviation Command (MSPAC). MSPAC's primary mission involves conducting medical evacuation (Medevac) operations. Although it primarily provides Medevac services, MSPAC also conducts search and rescue, law enforcement, and homeland security missions. MSPAC's responsibilities were recently expanded to require the agency to provide support to the Department of Natural Resources (DNR) for its law enforcement and search and rescue missions, as well as aerial surveillance.

Project Analysis

Aviation Command Provides Medevac and Police Missions

MSPAC primary mission involves conducting Medevac operations; in particular, MSPAC specializes in “scene transports” whereby the agency provides air ambulance services from the scene of an accident that involves serious bodily injury. The agency also occasionally provides hospital transports whereby a patient is transported by helicopter from one hospital to another, referred to as inter-hospital transfers.

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 of Dauphin helicopters was purchased in 1989. For almost 10 years, MSPAC operated with a fleet of 12 Dauphin helicopters and 2 fixed winged aircraft. As a result of a September 2008 helicopter accident, MSPAC now operates with 11 helicopters.

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Helicopter Replacement Was Set Back Due to Budget Crunch

The General Assembly’s intent to replace the existing fleet dates back to 2007. Chapter 6 of the 2007 special session provided that a portion (\$110 million) of the revenues from the increased sales and use tax in fiscal 2008 be directed to the State Police Helicopter Replacement Fund (SPHRF). Chapter 6 also expressed the intent of the General Assembly that the Governor include sufficient expenditures from the fund to purchase three helicopters per year from fiscal 2009 to 2012. However, the Spending Mandate and Revenue Dedication Relief Act of 2008 (Chapter 414 of 2008) modified Chapter 6 to dedicate \$50 million, rather than \$110 million, to the SPHRF. To replace this funding, Chapter 414 also required the Governor to include a total of \$70 million for the purchase of Medevac helicopters in the fiscal 2010, 2011, and 2012 State budgets. Chapter 414 specified that these funds may be from any budgetary fund that receives sales and use tax, and appropriations may be reduced by the amount of capital debt that may be authorized for helicopters or by any contribution, transfer, or financing acquired from the Maryland Automobile Insurance Fund as authorized by an act of the General Assembly.

During the 2008 legislative session, the General Assembly approved \$33.6 million pay-as-you-go special funds to procure the first installment of three Medevac helicopters. However, due to budget constraints, the appropriation was cancelled because Chapter 487 of 2009 (the Budget Reconciliation and Financing Act of 2009) authorized the transfer of the remaining \$52.7 million balance from the SPHRF to the general fund. In lieu of these funds, the Maryland Consolidated

Capital Bond Loan (MCCBL) of 2009 included \$52.5 million in general obligation bonds to begin the initial purchase of Medevac helicopters.

Expert Panel Review of Maryland’s Medevac System

In November 2008, a panel of national experts convened to review and make recommendations regarding Maryland’s emergency transport protocol in light of the September crash. Specifically, the panel noted that there are a number of unique characteristics in Maryland’s Helicopter Emergency Medical Service (HEMS) as compared with other areas of the country, including the organization, coverage, tasking, staffing, and funding of air medical services. MSPAC’s model is unique to the country as the only statewide and State-provided HEMS system. As shown in **Exhibit 1**, MSPAC operates 11 helicopters out of seven bases located throughout the State.

Exhibit 1 Locations of State Police Helicopter Bases

<u>Operating Base</u>	<u>Location</u>
1. Baltimore Section	Baltimore County
2. Washington Section	Prince George’s County
3. Frederick Section	Frederick County
4. Salisbury Section	Wicomico County
5. Cumberland Section	Mineral County, West Virginia
6. Easton Section	Talbot County
7. Southern Maryland Section	St. Mary’s County

Note: An eighth base, the Norwood section in Montgomery County was operated until the helicopter accident in September 2008.

Source: Department of Legislative Services; Department of State Police

Base Alignment Study Recommends 10 Helicopters and 7 Bases

The 2009 *Joint Chairmen’s Report* included committee narrative requiring the submission of an updated helicopter deployment study. In January 2011, an updated helicopter base assessment study was submitted to the legislature. The report recommends 10 helicopters located at 7 bases, with the relocation of Trooper 1 to Aberdeen.

Geographic Coverage

A key component of the assessment was the helicopter coverage radius that would provide the best opportunity to meet MSPAC’s response time to patient goal of 25 minutes from the receipt of a Medevac request by the Systems Communications Center, commonly referred to as SYSCOM. Statewide system protocols are designed to ensure that trauma patients are reached in less than 25 minutes from the time of receipt of the call for the helicopter. Utilizing both the 25-minute response time and a projected helicopter speed of 130 knots, Integrity Consulting (Integrity) developed multiple base coverage scenarios as shown in **Exhibit 2**. According to Integrity, the optimal base alignment option comprises Scenarios 4 and 5. The report noted that Scenarios 4 and 5 project higher call density and geographic coverage with only a slight reduction in the State’s population coverage (see **Exhibit 3**). The only projected distinction between Scenarios 4 and 5 is the response time to patient. Integrity estimated that it would cost an additional \$1.4 million annually to operate an additional helicopter during peak demand as outlined in Scenario 5. Based on this analysis, Integrity recommended Scenario 4.

Exhibit 2 Geographic Coverage Options

<u>Scenario</u>	<u>Bases</u>	<u>Helicopters</u>	<u>Description</u>
1	8	12	Operate all eight sections
2	8	11	Operate all eight sections and remove one helicopter
3	7	10	Discontinue Norwood section
4	7	10	Move Baltimore section to Aberdeen
5	7	10	Move Baltimore section to Aberdeen and operate an additional helicopter four days a week for 12 hours during peak demand (peak hours or seasons)
6	6	9	Discontinue Washington and Norwood sections
7	6	9	Discontinue Washington section and move Baltimore section to Aberdeen while also operating an additional helicopter four days a week for 12 hours during peak demand (peak hours or seasons)

Source: *Maryland State Police Aviation Command Helicopter Trooper Base Assessment Update*, December 1, 2010

Exhibit 3
Key Performance Indicators

<u>Scenario</u>	Geographic Coverage			<u>Population Covered</u>	<u>Call Density Coverage</u>	Response Time to a Patient (Within 25 Minutes)
	<u>Single</u>	<u>Double Overlap</u>	<u>Triple Overlap</u>			
1	97.3%	46.7%	10.8%	98.9%	97.9%	88.8%
2	97.3%	46.7%	10.8%	98.9%	97.9%	88.8%
3	97.1%	35.0%	4.4%	98.9%	97.8%	88.5%
4	98.1%	31.7%	2.5%	98.6%	98.6%	89.9%
5	98.1%	31.7%	2.5%	98.6%	98.6%	91.0%
6	94.2%	17.5%	0.8%	91.6%	93.5%	83.7%
7	95.4%	12.9%	0.8%	92.0%	94.5%	86.4%

Source: *Maryland State Police Aviation Command Helicopter Trooper Base Assessment Update*, December 1, 2010

Issues

1. The First Two Helicopters Will Likely Be Delivered by the End of 2012

Delivery of the first two Augusta Westland AW 139 helicopters was expected in May 2012. However, MSPAC recently requested that adjustments be made to the design of the aircraft’s exterior equipment and medical interior. The department advises that the altered specifications are not major design changes; the cost of each helicopter, which was originally about \$11.7 million, is expected to increase by about \$1.1 million per ship due to the adjusted specifications. The first two helicopters are now expected to be delivered in December 2012. **Exhibit 4** shows the most recent estimated delivery schedule for the helicopters and the flight training device.

Exhibit 4
Medevac Delivery Schedule
Fiscal 2012-2014

<u>Helicopters</u>	<u>Delivery Date</u>	<u>Fiscal Year</u>
2	December 1, 2012	2013
2	March 1, 2013	2013
2	June 1, 2013	2013
2	November 15, 2013	2014
1	February 15, 2014	2014
1	May 15, 2014	2014
FTD	February 1, 2015	2015

FTD: Flight Training Device

Source: Department of State Police

Funding to Purchase the New Fleet Continues through Fiscal 2015

In addition to the \$75.2 million previously authorized, the MCCBL of 2012 includes \$38.7 million for fiscal 2013; in addition, \$24.3 million has been pre-authorized for fiscal 2014 and \$8.0 million has been pre-authorized in fiscal 2015. The current cash flow will provide for the purchase of 10 helicopters and the flight training device. The *Capital Improvement Program* (CIP) also programs funds for the design and construction of a training facility to house the flight training device so that MSPAC helicopter pilots may conduct initial and recurrent flight training. The plan includes \$350,000 in fiscal 2014 to design a facility for the flight training device; and \$4.2 million in fiscal 2015 to construct the facility. **Exhibit 5** shows the total amount of funding included in the CIP for the purchase of 10 helicopters, the flight training device, and for design and construction costs for a facility to house the device.

Exhibit 5
Medevac Funding Schedule
10 Helicopters, Flight Training Device, and Facility
Fiscal 2013-2015
(\$ in Millions)

	<u>Prior</u> <u>Authorizations</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>Total</u>
10 Helicopters and FTD	\$75.2	\$38.7	\$24.3	\$8.0	\$146.2
FTD Facility			0.4	4.2	4.6
Total	\$75.2	\$38.7	\$24.7	\$12.2	\$150.8

FTD: Flight Training Device

Source: Department of Budget and Management

A Decision to Purchase Only 10 Helicopters May Have Significant Implications

The Maryland Institute for Emergency Medical Services Systems and MSPAC have accepted the base realignment report's findings with the proviso that a recommendation on whether an eleventh helicopter is warranted should be made following the integration of the new helicopters into the Aviation Command. Department of Legislative Services (DLS) agrees that a decision to forgo the purchase of an eleventh helicopter would be premature at this time for a number of reasons:

- The National Capital Region (NCR), one of the most congested areas in the country, has a high rate of vehicle accidents and, thus, Medevac scene transports are a common occurrence in the NCR. However, the Norwood section – MSPAC's base in the NCR – has been inactive since the 2008 helicopter accident. As the economy rebounds and more vehicles are driven, particularly in the NCR, there may again be a need to reestablish a presence in this area, which could result in the need for an additional helicopter.
- Over time the new helicopters will more frequently be out of service due to required, complex inspections that will limit Medevac availability. In a 2008 performance audit, the Office of Legislative Audits commented on the significant amount of time helicopters in the current fleet were offline due to routine and unexpected maintenance and the implications on MSPAC operations.

- Following the 2008 helicopter accident, new protocols were implemented to determine whether an injured patient is airlifted to a trauma center. The guidelines require a medical consultation with a trauma center prior to dispatching a helicopter for trauma patients with seemingly noncritical injuries. Previously, that decision was made by paramedics without doctor input. There has been a notable decline in the number of Medevac transports since the protocol was established, but it is unclear how long the trend will continue.
- MSPAC currently operates a mixed fleet of helicopters because the State did not anticipate the number of future year helicopter missions that would occur. As a result, the State acquired its current fleet over a number of years and, as a result, the fleet is comprised of three different models of the Dauphin helicopter. The lack of standardization results in more complex training for pilots and mechanics who must understand slight differences between the ships – potentially in an emergency situation.

In the short term, MSPAC will likely need only 10 helicopters to provide the high level of Medevac and law enforcement services expected of the agency. However, DLS notes – based on prior experience – that the number of future helicopter missions may increase in future years due to increased travel on the State’s highways. At the same time, the aging fleet will require greater routine and unexpected maintenance that results in more down time and lower Medevac availability. If the State decides to purchase only 10 helicopters and it is later determined that an additional helicopter is needed, the State will find itself in the same predicament as it is in with the existing fleet: multiple versions of the same helicopter.

Purchase of an Eleventh Helicopter Requires Additional Out-year Funding

Exhibit 6 compares the costs associated with buying 10 and 11 helicopters. If all other factors are unchanged, the purchase of 1 additional helicopter requires an additional \$14.3 million between fiscal 2014 and 2015. This reflects (1) the \$11.7 million base costs per helicopter; (2) additional costs of approximately \$1.1 million due to altered specifications; and (3) the effect of the 3% inflation factor. **Exhibit 7** shows the anticipated delivery schedule for the 11 helicopter option. **For the reasons cited above, DLS recommends that the legislature authorize the purchase of an eleventh helicopter.**

Exhibit 6
Changes in Cash Flow Due to Purchase of an Eleventh Helicopter
Fiscal 2013-2015
(\$ in Millions)

	<u>Prior</u> <u>Authorizations</u>	<u>2013</u>	<u>2014*</u>	<u>2015*</u>	<u>Total*</u>
10 Helicopters	\$75.2	\$38.7	\$24.7	\$12.2	\$150.8
11 Helicopters	75.2	38.7	33.1	18.1	165.1

* Includes cost programmed for the Flight Training Device and a facility to house the device.

Source: Department of Budget and Management

Exhibit 7
Medevac Delivery Schedule for 11 Helicopters
Fiscal 2012-2014

<u>Helicopters</u>	<u>Delivery Date</u>	<u>Fiscal Year</u>
2	December 1, 2012	2013
2	March 1, 2013	2013
2	June 1, 2013	2013
2	November 15, 2013	2014
1	February 15, 2014	2014
1	May 15, 2014	2014
FTD	February 1, 2015	2015
1	February 1, 2015	2015

FTD: Flight Training Device

Source: Department of Budget and Management

DLS Recommendations

In summary, DLS recommends that the budget committees:

- **authorize funding to purchase an eleventh helicopter. The MCCBL of 2012 is an ideal vehicle for pre-authorizing the funding required in fiscal 2014 and 2015 for the purchase of an eleventh helicopter.**

Prior Authorization and Capital Improvement Program

**Authorization Uses
(\$ in Millions)**

<i>Fund Uses</i>	<i>Prior Authorization</i>	<i>2013 Request</i>	<i>2014 Estimate</i>	<i>2015 Estimate</i>	<i>2016 Estimate</i>	<i>2017 Estimate</i>
Acquisition	\$75.150	\$38.674	\$24.250	\$8.000	\$0.000	\$0.000
Planning	0.000	0.000	0.000	0.000	0.000	0.000
Construction	0.000	0.000	0.000	0.000	0.000	0.000
Equipment	0.000	0.000	0.000	0.000	0.000	0.000
Total	\$75.150	\$38.674	\$24.250	\$8.000	\$0.000	\$0.000

**Authorization Sources
(\$ in Millions)**

<i>Fund Sources</i>	<i>Prior Authorization</i>	<i>2013 Request</i>	<i>2014 Estimate</i>	<i>2015 Estimate</i>	<i>2016 Estimate</i>	<i>2017 Estimate</i>
GO Bond	\$75.150	\$38.674	\$24.250	\$8.000	\$0.000	\$0.000
Total	\$75.150	\$38.674	\$24.250	\$8.000	\$0.000	\$0.000

