

D53T00
Maryland Institute for Emergency Medical Services Systems

Operating Budget Data

(\$ in Thousands)

	<u>FY 05</u> <u>Actual</u>	<u>FY 06</u> <u>Working</u>	<u>FY 07</u> <u>Allowance</u>	<u>FY 06-07</u> <u>Change</u>	<u>% Change</u> <u>Prior Year</u>
Special Fund	\$12,579	\$10,724	\$11,168	\$444	4.1%
Federal Fund	<u>1,140</u>	<u>350</u>	<u>140</u>	<u>-210</u>	<u>-60.0%</u>
Total Funds	\$13,719	\$11,074	\$11,308	\$234	2.1%

- The fiscal 2007 allowance for Maryland Institute for Emergency Medical Services System (MIEMSS) shows modest growth over fiscal 2006. Increases in personnel costs are offset by a decline in funding for core operations and grants.

Personnel Data

	<u>FY 05</u> <u>Actual</u>	<u>FY 06</u> <u>Working</u>	<u>FY 07</u> <u>Allowance</u>	<u>FY 06-07</u> <u>Change</u>
Regular Positions	91.60	92.60	92.60	0.00
Contractual FTEs	<u>11.60</u>	<u>8.65</u>	<u>7.05</u>	<u>-1.60</u>
Total Personnel	103.20	101.25	99.65	-1.60

Vacancy Data: Regular Positions

Turnover, Excluding New Positions	3.23	3.49%
Positions Vacant as of 12/31/05	2.00	2.20%

- There is no change in the regular personnel complement for MIEMSS in fiscal 2007. However, the fiscal 2006 position count has been increased since the 2005 session. Specifically, the Board of Public Works approved a contractual conversion for support to the Electronic Maryland Ambulance Information System. Consequently, fiscal 2007 contractual support falls.

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

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Analysis in Brief

Major Trends

Emergency Medical Services (EMS) Outcomes: As measured by MIEMSS outcomes, Maryland’s EMS system appears to be functioning well.

The EMS System Is Sound but Strains Exist: A recent review of emergency medical systems by the American College of Emergency Physicians rated Maryland’s EMS system favorably. However, long-term trends in ambulance diversion data indicate that the system is also under some strain.

Recommended Actions

	<u>Funds</u>
1. Reduce funding for motor vehicle maintenance and repairs.	\$ 13,000
2. Delete funding for software upgrades to the Electronic Maryland Ambulance Information System.	25,000
3. Reduce funding for various supplies and materials.	25,000
Total Reductions	\$ 63,000

Updates

Final Expansion of Centralized EMS Communications System: Fiscal 2007 funding is provided for the final expansion of the centralized EMS Communications System to the lower Eastern Shore (Somerset, Wicomico, and Worcester counties).

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Operating Budget Analysis

Program Description

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 the University of Maryland Baltimore.

Under the 1993 law, MIEMSS became a State agency under the direction of an Emergency Medical Services (EMS) Board appointed by and directly responsible to the Governor. The EMS Board is tasked with developing, adopting, and monitoring a statewide plan to ensure effective coordination and evaluation of emergency medical services. As structured, the EMS law established a system that encourages statewide participation and feedback through membership on the EMS Board and its advisory body, the State EMS Advisory Council. The EMS Board appoints the Executive Director of MIEMSS, who serves as the administrative head of the State's emergency medical services and of the operations of MIEMSS. Funding for MIEMSS comes primarily from the Maryland Emergency Medical System Operations Fund, created by the 1992 General Assembly. Support for the fund is from a surcharge on motor vehicle registrations, which was increased from \$8 to \$11 by Chapter 33, Acts of 2001.

The MIEMSS mission is to provide the resources, leadership, and oversight necessary for Maryland's EMS system to function optimally and to provide effective care to patients by reducing preventable deaths, disability, and discomfort. MIEMSS develops a Maryland EMS Plan that is periodically updated and that is designed to enable MIEMSS to fulfill this mission. The latest update to this plan is to be approved by the EMS Board in March 2006.

The MIEMSS mission addresses the need to:

- provide high quality medical care to individuals receiving emergency medical services; and
- maintain a well-functioning EMS system.

Performance Analysis: Managing for Results

MIEMSS collects a wide array of data concerning the State's EMS system. The key outcome measures provided through Managing for Results (MFR) are shown in **Exhibit 1**.

Exhibit 1
Program Measurement Data
Maryland Institute for Emergency Medical Services Systems
Fiscal 2003 – 2005

	<u>Actual 2003</u>	<u>Actual 2004</u>	<u>Actual 2005</u>
Greater than or equal to a 95% statistical level of confidence that Maryland performs above the national norm in trauma patient care	Yes	Yes	Yes
Survivability rate for trauma center admissions	n/a	94.7%	94.3%
Statewide trauma center complication rate	n/a	n/a	14.8%

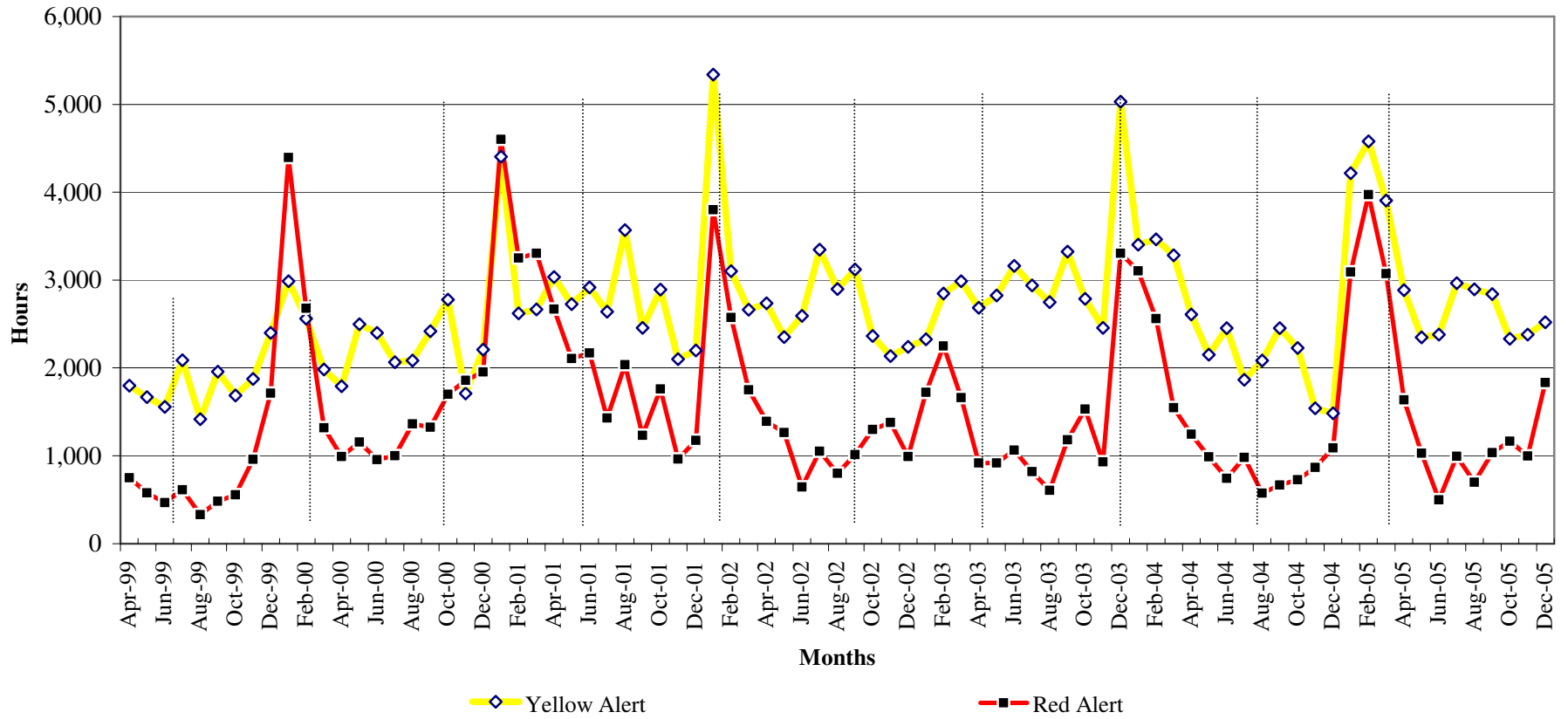
Source: Maryland Institute for Emergency Medical Services Systems

Two points can be made from the exhibit:

- MIEMSS manages the Maryland Trauma Registry (MTR), which details prehospital, emergency department care, inpatient care, and discharge information on all patients taken to a designated Maryland trauma center. Performance from the MTR is compared against the national norm for trauma patient care performance through a series of standardized Trauma and Injury Severity Scores analyses. Statistically, MIEMSS continues to exceed the national norm in trauma patient care.
- The statewide trauma center complication rate measure is not new. However, the fiscal 2005 figure represents the establishment of a new baseline for this measure. It should be noted that the 14.8% complication rate is higher than levels previous shown under the prior data definition and collection methodology (12.3% in fiscal 2003). However, according to MIEMSS the fiscal 2003 number was based on an incomplete reporting methodology and a disparate set of reportable complications.

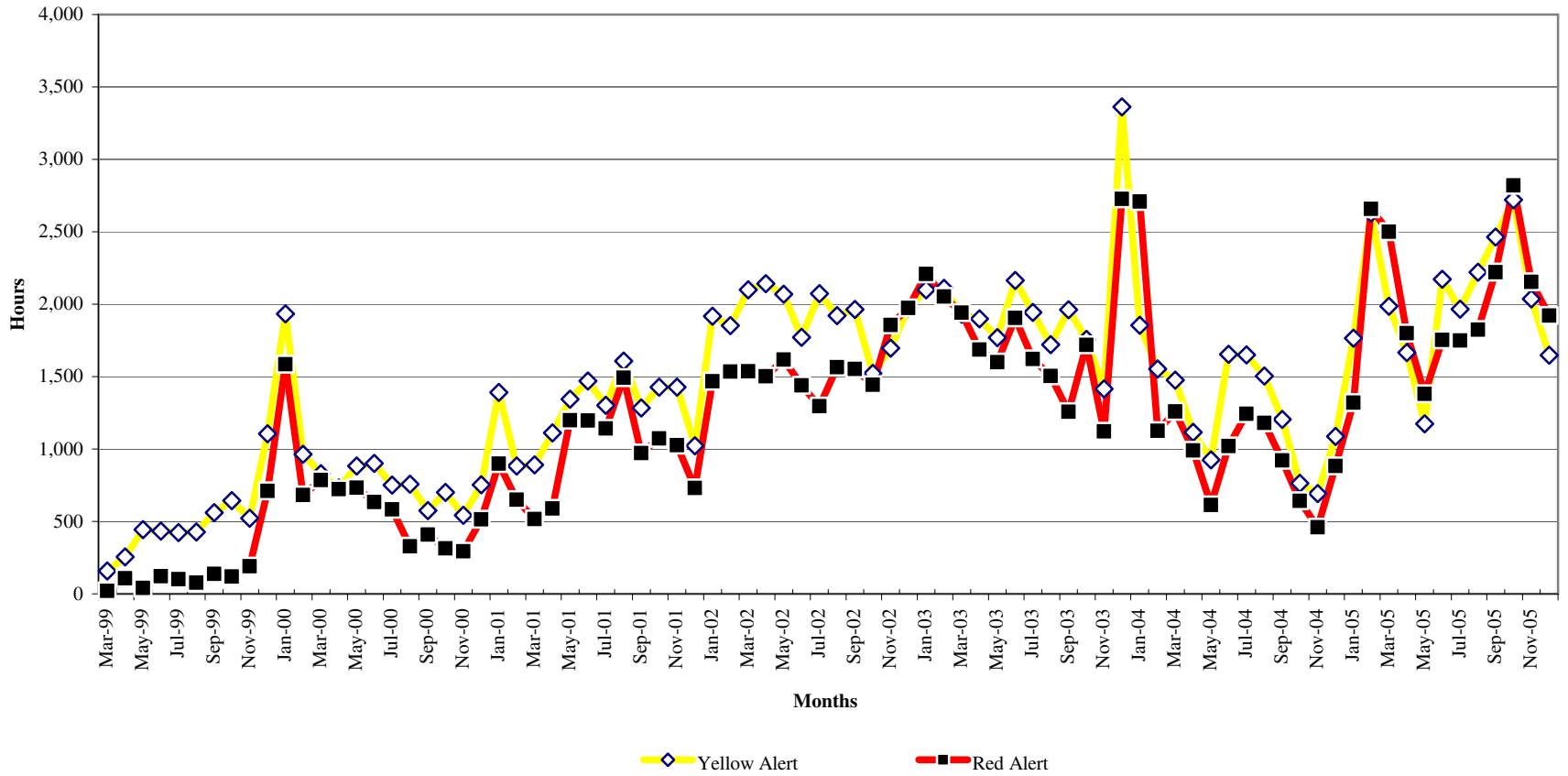
While MIEMSS' MFR data is positive about Maryland's EMS system, that is not to say that there are not strains on the system. Consider, for example, MIEMSS' own data on the extent of ambulance diversions as a result of emergency room overcrowding. Specifically, MIEMSS tracks "yellow" alerts when an emergency room receives absolutely no patients in need of urgent medical care by ambulance, and "red" alerts when a hospital has no inpatient electrocardiogram defibrillator monitored beds available. **Exhibits 2** and **3** show long-term trends in yellow and red alerts for Region III (metropolitan Baltimore) and Region V (metropolitan Washington). Both indicate a rising long-term trend in the number of hours that hospitals request diversion.

Exhibit 2
Region III Red/Yellow Alert Comparison
Metropolitan Baltimore
April 1999 – November 2005



Source: Maryland Institute for Emergency Medical Services Systems

Exhibit 3
Region V Red/Yellow Alert Comparison
Metropolitan Washington
March 1999 – December 2005



Source: Maryland Institute for Emergency Medical Services Systems

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A 2002 Maryland Health Care Commission and Health Services Cost Review Commission study of emergency room utilization which noted the same trends in yellow and red alerts pointed to a combination of factors driving this trend:

- Increased demand for emergency room services. This demand has been generated by such things as eased restrictions on the use of these services by managed care organizations, lack of access to other care because of insurance status, and difficulty in getting appointments during working hours.
- Changes in the management of emergency room patients. These changes include problems with the availability of on-call specialists and treating and releasing patients from the emergency rooms who would previously have resulted in an inpatient admission.
- Hospital and community health system capacity. Issues here relate to delays in transferring patients to inpatient units because of lack of capacity in those units, lack of capacity caused by nursing shortages, and the capacity of the community health care system to handle discharged patients (especially for certain patients such as psychiatric patients).

Interestingly, at the beginning of the year, a national review of the state of emergency medicine was issued by the American College of Emergency Physicians (ACEP) in its first ever National Report Card on the State of Emergency Medicine. ACEP developed its report around four measures:

- Access to Emergency Care (including such variables as the number of emergency departments per 1 million population, the extent of board certified emergency physicians, the number of trauma centers per 1 million population, and various measures relating to health insurance coverage).
- Quality and Patient Safety (including such variables as the number of emergency medicine residents and residency programs, access to advanced life support ambulance services, access to enhanced 911 services, and statewide offerings of training for disaster response).
- Public Health and Injury Prevention (including such variables as primary seat belt laws, traffic fatalities, and injury prevention programs).
- Medical liability environment (including such variables as caps on non-economic damages, emergency care liability protection, and liability insurance rates).

Within each measure, each variable was assigned a certain weight, and each measure was also weighted: access to emergency care counted for 40% of the overall score, quality and patient safety 25%, public health and injury prevention 10%, and the medical liability environment 25%. These scores were then compiled within each measure collectively and graded using a modified curve scoring system based on a comparison to the state with the best score in each particular category.

These kinds of surveys clearly have their limitations. Indeed, it is ironic that in this survey Maryland gets very high marks in the Public Health and Injury Prevention measures when other surveys, for example, the *America's Health: State Health Rankings* that uses different measures, paint a not so positive picture about Maryland's overall health outcomes and factors influencing those outcomes. Nevertheless, as shown in **Exhibit 4**, Maryland performed well, and the report was generally complimentary about Maryland's EMS system.

Exhibit 4
National Report Card on the State of Emergency Medicine
Maryland Data

<u>Measure</u>	<u>Maryland Grade</u>	<u>National Ranking</u>
Overall	B-	10 th
Access to Emergency Care	B+	12 th
Quality and Patient Safety	B+	10 th
Public Health and Injury Prevention	A+	2 nd
Medical Liability Environment	F	44 th

Source: *The National Report Card on the State of Emergency Medicine*, American College of Emergency Physicians, 2006.

The report did identify three major areas of concern:

- the relatively low number of emergency departments per 1 million people;
- the relatively low number of hospital-staffed beds per 1,000 people; and
- the State's medical liability environment, primarily driven by a failure to enact a strict cap on non-economic damages in medical liability lawsuits.

An external assessment of the State EMS system was conducted by the federal National Highway Traffic Safety Administration (NHTSA) Technical Assistance Team in June 2004. The NHTSA noted the excellent progress being made by Maryland towards meeting NHTSA's "gold standards" for an EMS system. These standards are noted in **Exhibit 5**.

Exhibit 5
NHTSA “Gold Standards” for an EMS System

<u>Area</u>	<u>Specific Standard</u>
Regulation and Policy	Each EMS system must have in place comprehensive enabling legislation with provision for a lead EMS agency.
Resource Management	Central coordination, identification and categorization of system resources are essential for a coordinated response and appropriate resource utilization.
Human Resources and Training	EMS personnel need to be adequately trained and available in sufficient numbers.
Transportation	Safe, reliable ambulance transportation is critical for an effective EMS system.
Facilities	Patients need to be delivered in a timely manner to the closest appropriate facility.
Communications	A reliable communications system is an essential component of an EMS system.
Public Information, Education, and Prevention	To effectively serve the public, each State must develop and implement an EMS public information, education and prevention program to enhance public knowledge of the EMS system, encourage appropriate access, understand essential self-help and bystander actions, and encourage injury prevention.
Medical Direction	Although EMS is a medical care system that involves delegation of medical practice to non-physician providers to manage care outside of traditional health environments, physicians must be involved in all aspects of the patient care system.
Trauma Systems	Trauma care components of an EMS system must be fully integrated into a fully functional system.
Evaluation	A comprehensive evaluation program is needed to effectively plan, implement and monitor a statewide EMS system.

Source: State of Maryland: A Reassessment of Emergency Medical Services. NHTSA. June 2004

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This extensive report concluded that the State was “well-served by the accomplishments that MIEMSS has achieved” although it did note several key ongoing challenges for MIEMSS:

- the need to capture data and use that data to provide a scientific basis for system planning and operations;
- maintaining financial support;
- assuring a sufficient EMS workforce, including volunteers;
- disaster preparation; and
- balancing the need for preserving Maryland State Police’s role in serving the air medical needs of trauma patients while assuring that other patients in need of inter facility air transfer are equally well-served.

Governor’s Proposed Budget

As shown in **Exhibit 6**, the fiscal 2007 allowance for MIEMSS is just over \$11.3 million, a \$234,000 (2.1%) increase over the fiscal 2006 working appropriation.

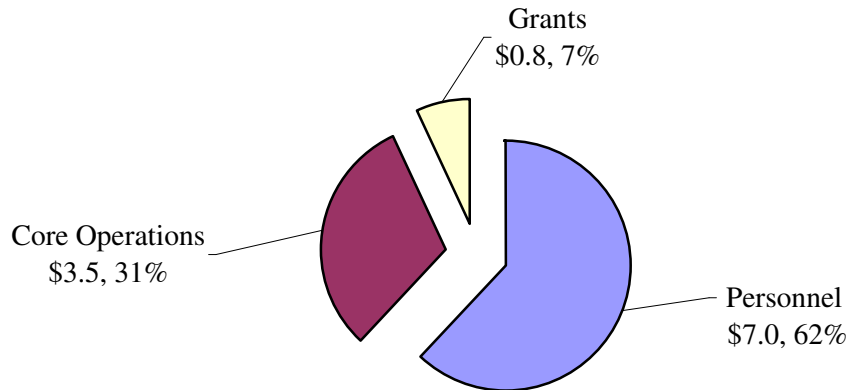
Exhibit 6
Governor's Proposed Budget
Maryland Institute for Emergency Medical Services Systems
(\$ in Thousands)

How Much It Grows:	Special Fund	Federal Fund	Total
2006 Working Appropriation	\$10,724	\$350	\$11,074
2007 Governor's Allowance	<u>11,168</u>	<u>140</u>	<u>11,308</u>
Amount Change	\$444	-\$210	\$234
Percent Change	4.1%	-60.0%	2.1%
 Where It Goes:			
Personnel Expenses			\$520
Fiscal 2007 employee and retiree health insurance			\$153
Understatement of fiscal 2006 health insurance expenditures.....			143
Regular employee increments.....			136
Retirement contributions			52
Other fringe benefit adjustments			23
Fiscal 2006 BPW approved contractual conversion to work on Electronic Maryland Ambulance Information System (net cost)			13
Operations			-\$86
Increase over fiscal 2006 budget required to finish EMS centralized communications system expansion and maintain current system.....			50
Software upgrades to Electronic Maryland Ambulance Information System			25
Other operational expenses.....			-9
Travel.....			-13
Equipment rental and repair.....			-16
Management studies			-54
Various supplies for in-house needs and training/education activities.....			-69
Grants			-\$200
Federal grant to supply automated external defibrillators to rural jurisdictions			-200
Total			\$234

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

Proposed spending for MIEMSS is shown in **Exhibit 7**:

Exhibit 7
Proposed Expenditures
MIEMSS
Fiscal 2007 Allowance
(\$ in Millions)



Source: MIEMSS Analysis Data

- \$7 million (62%) of MIEMSS budget is for regular personnel. This reflects a 9.2% increase over fiscal 2006, primarily because of health insurance costs and the fact that the fiscal 2006 budget does not yet include in the regular personnel object detail the expenses associated with a BPW approved contractual conversion for a person to oversee the Electronic Maryland Ambulance Information System (EMAIS). EMAIS is a web-based system designed to capture ambulance run data. The system was implemented at the beginning of fiscal 2005 and replaces the previous paper-driven system.
- \$3.5 million is for core operational expenses, primarily the costs associated with running the EMS centralized communications system and a variety of contractual expenses. The fiscal 2007 budget for these expenses is 4.3% lower than fiscal 2006.
- \$0.8 million is for grants. These include matching grants for local jurisdictions to buy EMS radios and Automated External Defibrillators (AEDs), training grants for EMS providers for Advanced Life Support Training, as well as a grant for Emergency Medical Dispatcher training. Grant funding is lower in fiscal 2007 than fiscal 2006 (20.2%) due to the ending of a federal grant for the distribution of AEDs to rural jurisdictions. Indeed, grant activity has fallen significantly from fiscal 2005, primarily due to the expiration of federal bioterrorism preparation grants. However, MIEMSS notes that it is not atypical for grants to be received throughout the year and the proposed fiscal 2007 funding may well increase.

Recommended Actions

	<u>Amount Reduction</u>	
1. Reduce funding for motor vehicle maintenance and repairs. This reduction still provides for a 10% increase over the most recent actual.	\$ 13,000	SF
2. Delete funding for software upgrades to the Electronic Maryland Ambulance Information System (EMAIS). This funding was requested to make appropriate changes to EMAIS (a system that is less than two years old) as more jurisdictions come on line. At the same time, a full-time regular position was recently created (a contractual conversion approved by the Board of Public Works) to oversee EMAIS. However, the individual recently left the position. When a replacement is hired, there may be a better sense of what software upgrades are required. At that time, a budget amendment may be processed to bring in the appropriate amount of funding.	25,000	SF
3. Reduce funding for various supplies and materials. This reduction still provides for a 20% increase in overall funding for supplies and materials over the most recent actual expenditure level.	25,000	SF
Total Special Fund Reductions	\$ 63,000	

Updates

1. Final Expansion of Centralized EMS Communications System

MIEMSS is in the process of expanding its centralized EMS communications system. Centralized EMS communication speeds responsiveness, improves triaging and treatment on the scene, and ensures that the patient(s) go to a facility with bed space available that is appropriate for the injuries sustained. In jurisdictions without dedicated, centralized EMS communications, communications operators are responsible for fire and police dispatch in addition to EMS. Fire and police often assume a higher response priority, leaving EMS communications stations unstaffed. Additionally, centralized communications bring new equipment to rural jurisdictions with older equipment.

Before the expansion of the centralized communications system, only the Baltimore and Washington metropolitan areas and Southern Maryland had centralized systems. Since MIEMSS began to expand the communications capabilities throughout the State in fiscal 2002, three regions have been completed. The upper Eastern Shore area, Frederick County, and St. Mary's County are finished. Expansion to Western Maryland will be completed with funding included in the fiscal 2006 budget. The fiscal 2007 allowance includes funding for the final expansion of the system to the lower Eastern Shore (Somerset, Wicomico, and Worcester counties).

Current and Prior Year Budgets

Current and Prior Year Budgets Maryland Institute for Emergency Medical Services Systems (\$ in Thousands)

	<u>General Fund</u>	<u>Special Fund</u>	<u>Federal Fund</u>	<u>Reimb. Fund</u>	<u>Total</u>
Fiscal 2005					
Legislative Appropriation	\$0	\$10,628	\$300	\$0	\$10,928
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	0	1,951	840	0	2,791
Reversions and Cancellations	0	0	0	0	0
Actual Expenditures	\$0	\$12,579	\$1,140	\$0	\$13,719
Fiscal 2006					
Legislative Appropriation	\$0	\$10,724	\$350	\$0	\$11,074
Budget Amendments	0	0	0	0	0
Working Appropriation	\$0	\$10,724	\$350	\$0	\$11,074

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

Fiscal 2005

Fiscal 2005 expenditures at MIEMSS totaled just over \$13.7 million, an increase of just under \$2.8 million over the legislative appropriation. The increase was derived from two separate budget amendments as follows:

- Special funds increased by \$1,950,956 for emergency preparedness training and equipment (\$940,000), to cover the cost for the Maryland Health and Emergency Preparedness Response Program (\$880,000), salary increases (\$75,956) and the Commercial Ambulance Program (\$55,000).
- Federal funds increased by \$840,000. Of this \$800,000 was for a homeland security grant to address equipment, training, planning, and exercise needs of first responders and to assist them in enhancing the capacity to respond to threats or acts of terrorism and \$40,000 was to enable MIEMSS to administer the Trauma – EMS Systems Program to audit head injured patients treated at adult trauma centers in Maryland.

Fiscal 2006

To date, there has been no change to the fiscal 2006 legislative appropriation.

Audit Findings

Audit Period for Last Audit:	March 25, 1999 – April 15, 2002
Issue Date:	September 2002
Number of Findings:	6
Number of Repeat Findings:	3
% of Repeat Findings:	50%
Rating: (if applicable)	n/a

Finding 1: **Proper internal controls were not established over purchasing and disbursement transactions.**

Finding 2: **Ambulance licensing fee collections were not sufficiently controlled.**

Finding 3: The institute did not review and approve purchases made with corporate purchasing cards.

Finding 4: **Equipment records were not adequately maintained and certain sensitive items had not been inventoried as required.**

Finding 5: The institute lacked documentation that transfers made between special funds complied with State law.

Finding 6: Controls over the institute's payroll processing were inadequate.

* Bold denotes item repeated in full or part from preceding audit report.

**Object/Fund Difference Report
MD Institute Emergency Medical Services Systems**

<u>Object/Fund</u>	<u>FY05 Actual</u>	<u>FY06 Working Appropriation</u>	<u>FY07 Allowance</u>	<u>FY06 - FY07 Amount Change</u>	<u>Percent Change</u>
Positions					
01 Regular	91.60	92.60	92.60	0	0%
02 Contractual	11.60	8.65	7.05	-1.60	-18.5%
Total Positions	103.20	101.25	99.65	-1.60	-1.6%
Objects					
01 Salaries and Wages	\$ 6,246,868	\$ 6,426,184	\$ 7,017,177	\$ 590,993	9.2%
02 Technical & Spec Fees	499,135	405,478	334,672	-70,806	-17.5%
03 Communication	2,599,658	1,327,656	1,379,909	52,253	3.9%
04 Travel	129,304	108,000	95,500	-12,500	-11.6%
06 Fuel & Utilities	51,282	43,000	43,000	0	0%
07 Motor Vehicles	191,760	193,428	198,577	5,149	2.7%
08 Contractual Services	1,640,768	1,085,383	1,023,212	-62,171	-5.7%
09 Supplies & Materials	160,249	269,979	201,100	-68,879	-25.5%
10 Equip - Replacement	74,339	46,500	43,500	-3,000	-6.5%
11 Equip - Additional	184,227	109,250	103,000	-6,250	-5.7%
12 Grants, Subsidies, and Contributions	1,855,618	990,186	790,000	-200,186	-20.2%
13 Fixed Charges	85,729	69,117	78,778	9,661	14.0%
Total Objects	\$ 13,718,937	\$ 11,074,161	\$ 11,308,425	\$ 234,264	2.1%
Funds					
03 Special Fund	\$ 12,578,751	\$ 10,724,161	\$ 11,168,425	\$ 444,264	4.1%
05 Federal Fund	1,140,186	350,000	140,000	-210,000	-60.0%
Total Funds	\$ 13,718,937	\$ 11,074,161	\$ 11,308,425	\$ 234,264	2.1%

