

# Final Draft

**Washington County, Maryland**

## **Emergency Medical Services: Plan for the Future**

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*A Master Plan for ensuring adequate cost effective emergency medical services*



**Emergency Services Advisory Council  
Division of Fire and Emergency Services  
January 29, 2007**



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## **Executive Summary**

The purpose of the Washington County, Maryland “Emergency Medical Services Plan for the Future” is to create a strategic plan, phased for implementation in such a way that the volunteer component of the emergency medical services system will be preserved and the customarily high level of emergency medical services will be provided to the citizens in the most efficient and cost effective manner possible. The primary objectives remain to:

- *Preserve the volunteer component of the emergency medical services system, and*
- *Enhance the level of emergency medical services provided to the citizens of Washington County.*

In April 2002, the Board of County Commissioners (BoCC) established the Emergency Services Advisory Council (ESAC) to provide recommendations regarding the provision of emergency services in Washington County. The ESAC created a taskforce on March 29, 2004 to study the current emergency medical services program and create a strategic plan to address both current and future challenges at a system-level.

The mission of this Task Force is to effect a cultural change within the fire and emergency services community. It is time to recognize that change is necessary and to educate elected officials and the public on the needs of an enhanced and improved system. Having a clear and concise vision for the future is essential to guide the system.

This document is the culmination of several years of work by many people representing diverse segments of government, the public safety community and our



citizens. All recommendations are based on national trends and standards, state and federal regulations and best practices in pre-hospital emergency medical care.

In its entirety, the taskforce report designs the transition from the volunteer corporation-based service with supplemental career staff to a centralized countywide combination system, which has the depth to weather the growth and demographic changes facing Washington County. The plan calls for the transition to occur in two phases and includes cost estimates and the creation of a revenue stream to fund the program.

A synopsis of the phases follows:

**Phase I**

- Comprehensive review of policies, procedures and the education program;
- Revision of current service areas to insure the closest unit is responding to the emergency;
- Acquisition of scheduling software package to track the utilization of personnel (career and volunteer) and resources;
- Transport unit maintenance and fuel reimbursements for volunteer corporations;
- Due diligence and planning for centralized billing occurring in phase two;
- Establishment of four geographic battalions in the County with advance life support personnel and equipment assigned to each area as a redundancy in the current system;



- Creation of an Assistant Chief of EMS Operations for personnel management, field support to comply with FLSA requirements and coordination the transition.

## **Phase II**

- Consolidation of staffing to address system depth, quality assurance and equity within the system as determined by the monitoring of an established set of benchmarks or at the request of an individual corporation for assistance;
- Implementation of a centralized billing program as the corporations require individual staffing assistance;
- Supplemental funding for volunteer corporations to help cover physical plant cost based on the level of operational activity;
- Creation of a volunteer corporation reimbursement program as a financial incentive for volunteer recruitment and retention.

Many reports and studies have been produced since the inception of EMS in Washington County containing recommendations for how to improve the system. Few of the recommendations made were implemented. The time has come to address the long-acknowledged but unmet need to strengthen this vital service.



## **1.0 Introduction:**

Planning occurs at both a strategic (or corporate) level and at an operational level. It is the first step in managing an organization and the emergency medical services (EMS) leader’s fundamental responsibility.

Emergency Services delivery is changing nationwide in many unexpected ways. The challenges facing the industry are occurring for a number of reasons, not the least of which are the changing complexities of the communities being served and the economic growth over the past 20 – 30 years. Since the publishing of the final report titled, “Comprehensive Study of Emergency Fire and Medical Services Delivery in Washington County, Maryland,” in May 1998, the Washington County system has evolved tremendously. This in itself is a testimony to the rapidly changing industry. In the midst of these rapidly changing conditions, the Washington County Volunteer Fire and Rescue Association of Maryland, Inc. (WCVFRA) and its member companies have done a stellar job in managing and coordinating the county’s fire and EMS activities.

The purpose of this EMS Master Plan is to create a document that can serve as a road map of recommendations that will lead to a cost effective and appropriately sized organization that meets the emergency medical services needs of Washington County for the next ten years.

Our objectives remain to:

- Preserve the volunteer component of the emergency medical services system, and
- Enhance the level of emergency medical services provided to the citizens of Washington County.



## 2.0 Vision, mission, values:

Overall, the mission of the Task Force and the plan itself is to effect a cultural change within the fire and emergency services community. It is time to recognize that change is necessary and to educate elected officials and the public on the needs of an enhanced and improved EMS system.

Having a clear, concise vision for the future is essential to guide the system. On January 16, 2001, the Board of County Commissioners of Washington County adopted a mission statement, which stated:

*The Mission of Washington County Government is to provide exemplary public services by:*

- *Supporting and strengthening individual and community self reliance and responsibility;*
- *Promoting education, economic opportunities, public health, safety, and welfare;*
- *Planning for future urbanization and a culturally diverse population.*

The Washington County Volunteer Fire and Rescue Association (WCVFRA)

EMS section created a mission statement back in 1991, which reads:

*“As partners in Washington County Emergency Services, we will be a unified, organized group of emergency care providers. Our goal is to provide excellent emergency care in a patient oriented, consumer driven approach; exceeding all local, state, and national standards. Our commitment is to be progressive and proactive in our approach to fulfilling the emergency care needs of our community, and to be efficient in the utilization of our resources.”*

In addition, the Division of Fire and Emergency Services (DFES) of Washington County, Maryland, also has developed a mission statement which simply stated is, “to provide safe, efficient and quality emergency services to those in need.”



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Partnership among agencies such as WCVFRA, DFES and Local Government can support the overall vision and mission to be a model emergency services system. Core values are fundamental to saving lives. These core values that need to be maintained within the system are; Professionalism, Volunteerism, Integrity, Honesty and Ethics. Cooperatively working with citizens and other agencies, the WCVFRA and DFES can improve the overall quality of services and act as a catalyst for positive change.



### 3.0 Goals and objectives:

The organizational goals and objectives of the EMS Operational Program are centralized around patient care and the level of service offered to the citizens of Washington County. Emergency medical services (EMS) have experienced significant growth. In 1996, a multi-disciplinary group, under the leadership of the National Highway Traffic Safety Administration, developed the “*EMS Agenda for the Future*”, which identified 15 components of an EMS system. To realize the future vision of EMS, the “*EMS Agenda for the Future*” proposed continued development of 14 EMS attributes.

The 14 EMS attributes are:

- Integration of Health Systems
- EMS Research
- Legislation and Regulation
- System Finance
- Human Resources
- Medical Direction
- Education Systems
- Public Education
- Prevention
- Public Access
- Communications Systems
- Clinical Care
- Information Systems
- Evaluation

The overall system objectives below represent global objectives to ensure a cohesive medically oriented, tiered-response countywide system.

System objectives:

1. Maintain the EMS system as an integrated countywide system of basic and advanced life support services provided by DFES, WCVFA and the local fire and emergency companies/departments.



2. Make countywide delivery and funding decisions cooperatively and balance the needs of Advanced Life Support (ALS), Basic Life Support (BLS), and countywide programs from a system wide perspective.
3. Develop and implement strategic initiatives to provide greater efficiencies within the system. The function of strategic initiatives are to:
  - Maintain or improve current standards of patient care,
    - Enhancing existing programs
    - Add new programs
  - Improve the operational effectiveness of the system to help contain costs and use existing resources more efficiently.
  - Manage the rate of growth in the demand for EMS services.

The EMS system ultimately creates a coordinated response to the immediate needs of the emergency patient. The EMS system requires strong, continuous medical leadership and supervision. If the system is to be lifesaving quality, standards for personnel training, vehicles, manpower, facilities, communications, and continuous quality improvement must be adopted and maintained.



#### **4.0 Background and History:**

Fire services in Washington County evolved from community based volunteer organizations located near populated areas. The EMS system evolved from the funeral home industry and eventually transitioned into the local fire department. The fire services throughout the County (see appendix A) organized for united representation in 1934. This organization was known as the Washington County Volunteer Fireman’s Association (WCVFA).

During the early years of EMS, estimated to be the 1940’s, Washington County responders had little or no training unless they had military experience. The initial services here started just like the major metropolitan areas mentioned earlier, as transport units. The calls for service were infrequent.

Funding in the early stages was obtained by local community efforts. Bake sales, bingo games and special fund drive requests provided the capital needed to construct fire stations and purchase the equipment.

Just as the WCVFA represented the fire service, EMS companies felt compelled to have united representation. The EMS companies formed the Tri-State Ambulance Association to represent the best interest of the EMS Company’s. At that time, the County Government recognized both organizations with regards to lobbying issues. Other associations and organizations were also developing such as the Washington County Chief Officers’ Association.

The growing developments in high-speed highway construction forced the evolution of the modern EMS system. In 1966 the National Highway Safety Act charged the United States Department of Transportation (DOT) with developing EMS standards



and assisting the states to upgrade the quality of their pre-hospital emergency care. Most EMT courses today are based on models developed by the DOT.

In 1970, the National Registry of Emergency Medical Technicians was founded to establish professional standards. In 1973, Congress passed the National Emergency Medical Services Systems Act as the cornerstone of a federal effort to implement improved EMS systems across the United States. This effort was the catalyst that caused the creation of the Maryland Institute for Emergency Medical Services Systems (MIEMSS). MIEMSS initiated a provider certification and licensing program.

In 1975, Washington County Government, working collaboratively with the WCVFA, created a central location for dispatching and coordinating the response by all fire and EMS units. This organization was known as Washington County Central Alarm (WCCA).

Prior to the 70's the level of care was limited to basic skills. The beginning of the advanced life support (ALS) system started in 1976, when the DOT and MIEMSS published standards for Cardiac Rescue Technicians (CRT's). Many volunteer EMS personnel in Washington County dedicated many hours training to obtain the new ALS designation. Among the volunteer organizations who had CRT's were Clear Spring EMS, Community Rescue Service, Hancock EMS, Sharpsburg EMS, and Williamsport EMS. Boonsboro EMS obtained ALS designation in 1989.

The first career EMS personnel in Washington County worked for the Community Rescue Service (CRS) to provide inter-hospital transports. To offset the cost for these personnel, CRS started third party billing for these transport services.



The Washington County Hospital increased its support of the pre-hospital system during this period. The hospital provided a stocking program for EMS supplies and allowed EMS companies to restock their ambulances from a cache of supplies that would ultimately be charged to the patient requiring the service.

As the system became more complex and provided enhanced service in an increasingly litigious society, reporting and documentation became a necessity. EMS personnel were not only required to convey information to the hospital staff relating to the patients treatment and condition, but they were now also required to fully document the activities and situation they were presented with in writing to protect themselves and complete the patient’s medical record.

In the 1970’s, Dr. R. Adams Cowley of the University of Maryland helped convince the state to launch a statewide EMS system, which by the 1980’s featured statewide coverage by helicopters that would quickly get to injured people throughout the state and transport them to the nearest approved trauma facility. Washington County Hospital has been an approved trauma center from nearly the beginning of this concept. Today, Maryland has the most advanced EMS system in the country, with a communications center in Baltimore that coordinates responses by ambulances and helicopters in five regions throughout the state. Washington County is joined with Frederick County to form region II. The helicopters are outfitted with the same lifesaving equipment found in ambulances. Patients are continuously treated and evaluated onboard by a paramedic certified by MIEMSS.

The Washington County Commissioners recognized the importance of the fire and EMS system and started providing special funding allocations to support the



operations. Initially, contributions were made payable to the organization to purchase equipment and facilities. To better coordinate communications between fire and EMS companies, the County Commissioners encouraged a merger of the Washington County Fireman’s Association and the Tri-State Ambulance Association into one organization. This organization became known as the Washington County Volunteer Fire & Rescue Association (WCVFRA).

In the 1980’s the ALS program was expanded to include the Emergency Medical Technician – Paramedic Program. The EMT-P program added several advanced level skills to the pre-hospital environment. These included pre-hospital intubation, cardio-version, pacing, expanded medicine base, and an overall expanded scope of practice.

EMS call volume and workload started to increase at a very rapid pace in the 1980’s. To help with rapid aid to patients, local community fire companies started to enhance the equipment placed on apparatus and expand EMS training for their personnel. Select companies chose to respond and provide assistance such as patient assessment and life-threatening care prior to the arrival of the ambulance. This service is known today as the “*fire department first responder service.*” MIEMSS provides a certification level for these basic emergency responders.

Throughout the decades, EMS gradually became more and more formalized with even greater governmental control and guidance. In the 1980’s, MIEMSS initiated a program of inspections to ensure that ambulances across the state were equipped with a minimum type and quantity of equipment necessary to perform all the authorized skills. The inspection program, known as the “Seal of Excellence” program, was a voluntary



program to demonstrate to the public that the ambulance service in that particular community met minimum state requirements.

In the 1980’s the overall emergency services workload seemed to rapidly increase and expand. The communities throughout the County were growing, placing more and more pressure on the volunteer organizations to meet the growing demand for service.

During this period a noticeable increase in operational costs were being experienced by fire and EMS organizations. Inflation was impacting the cost of emergency vehicles and supplies used by responders, so much so that additional funding was sought from and later granted by the County Government.

The 1990’s represented a major turning point for EMS in Washington County. The increased workload and demand on volunteers started to outpace their ability to continue around-the-clock coverage. Hiring of personnel to staff the EMS unit in every EMS station was implemented before the end of the decade. Each local EMS Company recognized the system deficiencies and stepped forward to continue the level of service by supplementing the volunteer staff with career personnel.

Technological changes and advancements enhanced patient care. Studies proved that early defibrillation significantly increased patient survivability and Washington County’s EMS program was quick to implement this technology. Life-pack defibrillators, automatic external defibrillators and the current 12-lead technology are all in use today.

With new technology came new ideas and research to improve patient survivability. One of the most successful programs in this category has been the Emergency Medical Dispatch (EMD) system, initiated in Washington County’s



Communication Center in 1993. Prior to EMD, the practices of dispatch were based on traditional methods. Although these methods probably had a sound origin, their application to modern EMS was flawed. The philosophy of EMD is built around the fact that when a person calls 911 for medical assistance, they need help now, not three to seven minutes later when the ambulance arrives. The fact that dispatchers can have a positive impact on patient survivability was proven in 1974 when a paramedic, assigned to light duty, working in the communications center in Phoenix, Arizona, came online to speak with a mother of a child who was found drowning in a swimming pool. The paramedic instructed the mother how to perform cardiopulmonary resuscitation (CPR). The child was revived and lived a successful life because the paramedic intervened.

Toward the end of the decade, WCVFRA created a full-time position to handle the day-to-day operations of the EMS operational program. This position, entitled EMS Management Specialist, reported to the President of the Volunteer Fire & Rescue Association. Typical duties of the EMS Management Specialist included: processing of certification/re-certifications, credentialing of providers, oversight of quality assurance and quality improvement programs, coordination of EMS training, coordination of supplies and equipment and other agencies that interact with the EMS operational program.

Prior to the hiring of the EMS Management Specialist, the Washington County Hospital had developed an EMS support program, through which, the hospital provided support for education, recertification, quality assurance, and acted as the liaison between the EMS system and hospital staff.



By the 1990’s every EMS Company in Washington County (see appendix B) was billing for transport services. The billing program remains segmented today, with each company contracting with separate organizations to handle the administrative aspect of the billing program. At least one organization handles their entire billing program from within.

MIEMSS, under the authority granted in the Code of Maryland Regulations, Title 30, formalized the local government EMS system in 1996 by requiring every political jurisdiction in the state to create a local EMS operational program. The system allows for state oversight, while granting authority to the local governments to manage the system, and to enact and enforce policies and procedures that fit into the state’s overall plan. Since no entity within the Washington County Government existed to coordinate and guide the EMS program, the County granted authority over the program to the EMS Committee Chairperson of the Volunteer Fire & Rescue Association on October 21, 1996.

In 1996, the Board of County Commissioners (BoCC) working collaboratively with the WCVFRA commissioned a comprehensive study of fire and emergency services. The study listed more than 120 recommendations to improve the level of service and procedures used in our fire and emergency services system. The Emergency Services Council (ESC) reviewed each recommendation and developed a priority listing that was provided to the BoCC on February 13, 2001. One of the recommendations was to develop a system to centralize the overall management and enforcement of the emergency services system, in order to better plan for long-term growth and demand.



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In 2000, the BoCC established an advisory committee known as the Emergency ESC. This committee was initially charged with the responsibility to plan for the future of our fire and emergency services system. The committee consisted of members from the fire and emergency services community, citizens-at-large, and elected officials.

In the fall of 2000, the BoCC directed that all emergency services in Washington County be organized into one central authority, as recommended by several studies and task force recommendations. The organization was developed in conceptual form throughout the spring of 2001, presented for comment to the WCVFRA in June 2001, and formerly approved by the Commissioners in August 2001.

In April of 2002, the BoCC established the Emergency Services Advisory Council (ESAC) to provide recommendations regarding the provision of emergency services in Washington County. The ESAC continues to provide recommendations on various emergency services issues to this day, as requested by the BoCC.



## **5.0 Current System Analysis**

In Washington County, EMS is provided by a multi-agency delivery system. The State, County, City, and private corporations partner to deliver the most comprehensive system in the United States and possibly the world.

EMS is a complex system of agencies working collaboratively to provide medical care to those in need. There are eight primary emergency service stations from which ambulances are deployed throughout Washington County. These stations are privately owned corporations authorized to operate under the authority of the BoCC, found in Title 10-401 and 10-402 of the Code of Local Public Laws of Washington County and the State of Maryland, Maryland Institute for Emergency Medical Services Systems (MIEMSS) found in Title 30 of the Code of Maryland Regulations.

Each individual company within Washington County was organized and operated initially by local people who then established their own funding, standards, rules and regulations. It is important to remember that the reason for this type of structure was due to the fact that fire and EMS were viewed as local problems requiring local solutions. The local jurisdictions have historically established the form of the organization and the level of service considered adequate for the area.

Currently, every ambulance transport unit and ALS chase unit is mandated by the WCVFRA to be annually inspected and certified by MIEMSS. Continued operation is dependant upon meeting the “Seal of Excellence” standard as part of the Maryland State Fireman’s Association Voluntary Ambulance Inspection Program, which looks at vehicle maintenance, equipment and personnel. In order to obtain and maintain such State



approval, a company must have documented at least ten active Basic Life Support (BLS) providers and six Advanced Life Support (ALS) providers.

Due to budget constraints, increased demand for service and increased training and certification requirements by state and federal agencies, every EMS Company within Washington County has found it necessary to hire emergency services personnel. In order to offset the costs of salaries and benefits, the individual corporations have implemented EMS transport reimbursement through various billing methods in an attempt to perform cost recovery. With the need for career personnel, companies have also had to develop their own hiring and human resource practices.

As system workloads have increased, agency agreements and cooperation have enabled WCVFRA and DFES to maintain an active role in quality assurance and quality improvement. In 2004, a position within DFES was identified as being needed for the purpose of EMS coordination and education, monitoring the quality assurance program / quality improvement program, establishing organizational goals, developing and managing operational budget, and serving as the liaison for various EMS and State agencies.

It was not until 2006, that the position of EMS Coordinator was created within the DFES. Having the position of EMS Coordinator under DFES allows for direct EMS system accountability to the “authority having jurisdiction,” which is the BoCC and (by the BoCC’s delegation) DFES.

The quality assurance process continues to be retrospective in nature, whereby each individual department provides a person to complete Maryland Ambulance Information System (MAIS) forms review and provide documentation to the EMS



Coordinator for the county. Ultimately, DFES through the EMS Coordinator remains the sole agency responsible for QA/QI oversight.

EMS Companies are required to review ten percent of their monthly responses. The level of compliance varies monthly by company with full compliance countywide seldom seen. The issue of incomplete quality assurance is of significant concern because it eliminates the opportunity for improvement through reviews of specific incidents and trend analysis. Moving forward, much of the justification for both phases’ centers around a need for better quality assurance, which equals system accountability at a provider level.

Year to date, the Medical Review Committee has completed 24 case reviews, three of which were referred for a full inquiry. Twenty-three of the reviews were generated by the EMS Coordinator and one originated at the company level. In October 2006, a total of 76 reports have been identified as non-compliant, based upon the jurisdictional requirements for complete documentation. In 2006, external customers have also generated 18 documented complaints.

Currently, the EMS operational program has an approved ALS educational program through MIEMSS. The program was originally certified by MIEMSS in October 2005, for interim status. The program is currently undergoing program review for a five-year recertification. The program, since its inception, has trained over 30 EMT-Is and is currently offering an EMT-P bridge program for 15 of those 30 students. In addition, the jurisdiction offers courses in advanced cardiac life support, pediatric education for prehospital providers, basic trauma life support, and many other programs necessary for continuing education and recertification for all levels of certification.



Currently, ten transport units on the average handle daytime, evening and midnight coverage for emergency medical responses. Statistical information for our EMS system indicates that responses have increased eight percent per year over the last three years alone. Based upon unit hour utilization, further increases in call volumes during 2007 will necessitate at least 12 transport units during the daytime and evening hours. By 2010, current estimates predict that EMS responses will be more than 27,283 per year (see appendix C).

In addition to response rate increases, it is also important to look at both population and housing unit projections for the County. In 2002, the Planning Department for Washington County presented the “Comprehensive Plan for Washington County.” Between 1940 and 1990, the population of Washington County grew by 52,555 people, which equated to an approximate increase of 0.76% per year. By the year 2000, the population grew to 131,923 persons, or 0.86% per year, for the 1990’s. Currently, the County estimates the population to increase to 149,835 by the year 2020 and 176,868 by 2050 (see appendix D).

1990 Census data determined that Washington County had 47,448 dwelling units. Estimates indicate that number rose to approximately 52,972 units by the year 2000 and will rise to 62,800 by 2020 (see appendix E). Housing units will increase approximately 19% over a 20-year period or 32% in a 30-year period. It is also estimated that persons per unit will drop from 2.53 in 1990 to 2.34 in 2020. The trend toward smaller household size is attributed to fewer children per family, more single parent families, the rise in elderly population and more non-traditional households.



With the increasing number of responses and the changing demographics of the County, EMS companies are forced to look outside of the County for prospective providers. As responses increased throughout the County, our communications center found that there were times in which stations were not maintaining ALS personnel. A copy of the ALS log (see appendix F) has been included to demonstrate the number of times that companies within the County have not been staffed with ALS personnel. Because it is assumed that the current ALS log does not accurately document all staffing deficiencies, a policy is in development by DFES to address the need for complete and accurate record keeping.

Statistical data for 2005, relative to EMS responses and the number of calls occurring during various daily time frames, can be found in appendix G. In addition to the number of overall responses by call type, the data also displays the number of responses coded as light crew (LC), late (L) and failed (F). The same statistical data for October 2006, the most recent month for which data is available, can be found in appendix H.



## **6.0 Plans for Improvement – Phase I (FY 08)**

The task force recommends the adoption of a strategic plan, phased for implementation in such a way that the volunteer component of the emergency medical services system will be preserved and the customarily high level of emergency medical services will be provided to the citizens in the most efficient and cost effective manner possible.

### **6.1 Policies, Procedures and Education**

The EMS Operational Program (WCVFRA and DFES) needs to review current policies and procedures, with a focus on standardization countywide to ensure coordination, emergency incident management, and safety. A countywide procedure can be developed that defines the minimum requirements for all qualified EMS responders and establishes a training course for new providers entering the system.

The EMS Operational Program will establish a policy whereby providers within our system will only be allowed to work 48 hours consecutively, at which time a 10-hour non-work period within the jurisdictional EMS system must be observed.

With ever changing protocols and advancements in pre-hospital care, the EMS system needs to develop standardized guidelines for vehicles, equipment, and personal protective clothing in such a manner that cost savings could be realized through the bulk competitive bidding process.

Using the existing operational education program, DFES and WCVFRA training programs will begin to offer academy style classes, to address the entry-level providers for all levels of certification. These programs will be developed in multiple formats of delivery, to meet the needs of the providers.



## 6.2 Improved Service Delivery Areas

As the County begins the construction of a new emergency services communication center and alternate public safety answering point (PSAP), the County’s level of EMS risk needs to be continually identified and evaluated. Response data can then be evaluated further, to determine the need for additional EMS units throughout the County. In addition to evaluating EMS risk profiles within the County, DFES can also review response criteria and call processing criteria to better define the various levels of response.

Realignment of EMS box areas will occur after full implementation of geographic information system (GIS) in first / second quarter of CY07. As an initial improvement of the County’s response times, this software purchase will allow the County to evaluate service protection boundaries, in order to ensure that the closest emergency service unit is providing response to all areas of the County.

In the FY08 capital improvement budget, DFES will pursue the purchase of computer aided dispatch (CAD) software to better define service protection boundaries, evaluate current station locations, and ensure that the location of future stations – new or relocated – are scientifically determined using a current system analysis and future growth projections. The package consists of the two modules; ADAM (Apparatus Deployment Analysis Module) and BARB (box-area run card builder). The estimated cost is \$140,000.

In addition, the EMS Operational Program will have the authority to establish new EMS transport units, as needed, based upon unit utilization and call probability models (see appendix I).



It is the recommendation of this task force that the County utilize the call probability/queuing model that maintains a 95% confidence level (see appendix J) for the purposes of determining EMS system needs and number of units that each company should maintain in service. The model shows the number of transport vehicles required, based upon the projections from the past three fiscal years of statistical data. This meets the current Region II state accepted model for ALS competency.

### **6.3 Automated Scheduling Software**

To better assist the EMS companies with their day-to-day operations, an automated scheduling software program should be reviewed and evaluated. Such a program would allow the individual companies and the EMS Operational Program to better monitor personnel resource allocation. Each company would have administrative access to maintain their individual schedule. Personnel availability within specific companies would be better defined and allow for the scheduling of both career and volunteer personnel. This would allow the units to respond within specific dispatch criteria and allow for alternative policies for dispatching the next due unit, based upon unit availability. The initial cost of scheduling software would be approximately \$50,000.

### **6.4 EMS Service Billing Program Analysis**

During the first phase of implementation, the EMS Operational Program would begin to evaluate and determine the most economical approach to provide EMS billing. By implementing a billing service as necessary in Phase II, the county could create a subscription club (program); this will prevent the citizens from being balanced billed for charges not covered through insurance. Through this program, EMS services within the



County would be marketed and a brochure delivered to every residence. This would alleviate the need for individual companies to solicit a subscription club program that often crosses over into different response areas, leading to public confusion.

At such time when DFES is required to provide supplemental staffing to the EMS companies, the EMS companies through DFES would negotiate a single contract to provide a EMS billing service for that corporation.

### **6.5 Maintenance / Fuel Reimbursement Cost**

Financial data for 2005 indicates that a total of \$327,515 was spent on maintenance and fuel cost by the eight EMS companies. The projected cost for CY2006 is \$360,000 (2005 plus 10%).

In calculating the number of recognized transport units for maintenance and fuel reimbursement, Appendix J was utilized. The task force recommends that in addition to the base number of transport vehicles, that an additional transport unit be included throughout each time frame per station for reserve purposes. Then 19 recognized transport vehicles would be reimbursed to a maximum of \$13,500 per unit, provided that the county policies and procedures outlined by the purchasing department were met along with the necessary documentation.

The County would provide reimbursement for diesel fuel (only) for the recognized number of transport vehicles within each Company.

### **6.6 Advanced Life Support (ALS) Providers**

#### **Job Description in Development**

ALS delivery should continue to model the system already in place, but with some additional service delivery enhancements. ALS positions in a chase car concept



within four geographical battalions should be determined based upon call volumes, ALS coverage and staffing issues, geographic considerations, and population density. The benefits of having the chase position operating within the system include an immediate monitor for the quality assurance program and the quality improvement of the entire system. The chase person(s) can assist with the development and implementation of EMS policies and procedures, and establish a liaison between all the EMS companies in the county. In addition, this position is a vital resource in meeting the training requirements necessary for ALS re-licensure and recertification. As EMS systems initiate new skill sets for ALS care, such as rapid sequence intubations (RSI) and continuous airway positive pressure (CPAP) in the county, a mechanism to both evaluate and educate the ALS providers will be of even greater necessity.

To fund the positions would require the hiring of 12 nationally registered emergency medical technician paramedics, at an individual salary cost would be \$58,500 per year (salary cost of \$45,000 and benefit cost of \$13,500). The total system cost would therefore be \$702,000 per year (\$175,500 times 4 units).

#### **6.7 Advanced Life Support Chase Unit**

The cost of procuring and equipping five ALS paramedic chase units is estimated to total \$290,185.

Vehicle Cost	29,000
LP12 w/ all options	19,924
Hardware	2,713
ALS Medications	600
BLS Supplies	800
SCBA (1)	<u>5,000</u>
Estimated Cost per unit	<b>\$58,037</b>



## **6.8 Assistant Chief of EMS Operations**

### **Job Description in Development**

This position would be responsible for assisting with the hiring; training, supervising, and directing paid emergency services providers for Washington County DFES. DFES would monitor the daily activities of staff and assist with development of organizational standard operating guidelines, policies and procedures. This position would be responsible for assisting with evaluation of personnel performance and perform other duties as assigned.

To address span of control concerns, it is recommended to budget for an Assistant Chief of EMS Operations at an estimated cost of \$71,500 per year (salary cost of \$55,000 and benefit cost of \$16,500).

## **6.9 Uniforms and Personal Protective Equipment**

Uniforms will cost \$200.00 per person per year, for a total of \$2,600 (13 employees).

Personal protective equipment will cost \$1,600 per employee, for a total of \$20,800. The County will budget \$4,160 or 20% annually for replacement costs.



## **7.0 Plans for Enhancement – Phase II**

As the system evolves, the EMS Operational Program will continue to monitor system resources and requests for services. The need for additional services will directly impact the model for EMS service delivery within Washington County. This task force’s findings include the realization that delivery of EMS services in Washington County, with strong and ever increasing pressures on existing operational, financial and administrative resources, cannot be expected to maintain its current state. Without additional resources, the system will weaken and the standard of care will diminish. It is therefore logical to conclude that the deployment of additional resources, coupled with increased operational efficiencies and the elimination of duplicative operating costs, provides the best path forward...for the future viability of the EMS system and most importantly for the future benefit of all citizens served by the system.

In monitoring our systems resources, the task force recommends that the following benchmarks be established for evaluating each individual corporation and their need for future resources:

- They will maintain staffing for the number of transport units as outlined by the call probability / queuing model at a 95 percent confidence level;
- They will maintain less than a five percent rate of combined Late, Failed or Light Crew responses based upon the total number of responses per 8-hour period;
- They will be required to maintain 100 percent compliance with all jurisdictional and state EMS operational requirements.



The systems benchmarks will be monitored over a 60-day period beginning 90 days after the authorization to hire personnel in Phase I. Should an individual corporation fall below any of the required benchmarks, they will be placed on a 60-day probationary period. Should the corporation be unsuccessful in improving the level of service during this probationary period, they will permanently relinquish their current EMS operational level of responsibility and DFES will initiate Phase II of the plan for that corporation. A corporation will not be allowed to enter a probationary period more than once in a calendar year.

If a corporation determines the need for Phase II support, a written request should be made to DFES. The implementation process will begin immediately after the request is made and the need is validated. Regardless of how Phase II support is initiated, all components of the plan will begin concurrently for the affected corporation.

## **7.1 Supplemental Career Staffing**

### **Job Descriptions in Development**

As there is a need for additional services based upon the above benchmarking or at the request of a corporation, the task force recommends the consolidation of supplemental career staffing under DFES as the corporations relinquish its level of responsibility, as noted in Section 7.0. Along with addressing the overall viability issues for the system and the standard of care issue for the community, this consolidation would allow full time and/or part time personnel to be hired, scheduled, and utilized throughout the entire County. It would require the development of a Memorandum of Understanding (MOU) to govern the relationship between the county and the host companies. This



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would provide equity in the system with standardized competitive salary and benefit packages.

In consolidating career staffing, various considerations would be required. Provisions for the Fair Labor Standards Act (FLSA) would have to be reviewed to determine the appropriate work schedules. In addition, a salary structure would be developed, taking into consideration the level of training and experience required for the position. This would have to be collectively compared to other positions within county government.

To provide financial equity for personnel employed at a corporate level whom are offered an opportunity with DFES, it is necessary to develop a mechanism to recognize their length of service at the primary employer. While it is impossible to estimate the impact on final project costs, the task force recommends consideration of the following service recognition model. The concept addresses valid concerns expressed by providers currently working at a corporate level whom support the system approach but cannot absorb the standard of living adjustment with returning to an entry-level salary.

Entry-level Field Provider	0-3 years	0 % increase to base
Field Provider	4-8 years	10 % increase to base
Senior Field Provider	Greater than 8 years	20 % increase to base

In determining approximate cost, the following salaries were utilized, whereby personnel would be working an average of 48 hours per week (40 hours plus eight hours in overtime).

Emergency Medical Technician – Basic	Wages	28,000
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	Benefits	<u>8,400</u>
	Total	36,400
Emergency Medical Technician – Paramedic	Wages	36,000
	Benefits	<u>10,800</u>
	Total	46,800

To fund a fully paid crew of both ALS and BLS providers for the required 12 transport units, including the cost associated with Kelly relief coverage, would require an anticipated salary and benefit cost of \$318,000 per transport unit, or a total of \$3,816,000 to fully fund 12 transport units.

## **7.2 EMS Service Billing Program Implementation**

As described in Section 6.4, the billing program will be implemented during this phase.

## **7.3 Uniforms and Personal Protective Equipment**

Uniforms will cost \$200.00 per person per year for a total of \$16,800.

Personal protective equipment will cost \$1,600 per employee for a total of \$134,400. The County will budget \$30,240 or 20% annually for replacement costs.

## **7.4 Vehicle / Equipment Replacement Cost**

At an estimated replacement cost of \$196,856 per unit, it is recommended that the County budget the replacement of two ALS transport units per year. The useful life expectancy of a vehicle is estimated at five years. As the County is required to purchase and assume responsibility for EMS transport vehicles, the reimbursement for maintenance and fuel cost by the individual EMS companies will be reduced proportionately.



As the County replaces those units designated as first line transport units, a policy and procedure will be developed whereby the outward appearance of the unit can be kept similar to its permanent company location.

#### **7.5 Volunteer Corporation Reimbursement Program**

A policy should be considered for EMS reimbursement whereby the County supports the volunteer system by providing funds for a volunteer BLS transport unit (two Maryland EMT-B's) that maintains an attended status. A company's attended status would be tracked and a mechanism provided for partial reimbursement to individual companies, at a rate of \$8.00 per hour per person that a BLS crew was maintained for a minimum of an eight-hour shift. If the company maintains a volunteer ALS transport unit (one MD EMT-B and one MD ALS) according to the above model, the compensation rate would be \$8.00 per EMT-B per hour and \$10.00 per ALS provider per hour.

It is the recommendation of the task force that the County allocate an additional funding allotment / reimbursement program of \$22,500 per approved unit to each EMS Company based upon the number of units identified as needed by the County. The reimbursement program is not contingent upon ambulance ownership, rather an equitable approach to assisting with operational costs. Allowable reimbursements may include the following: existing ambulance and building debt, equipment repair/replacement, personal protective equipment or other expenses approved by the EMS Operational Program.



**8.0 Financial**

It has to be considered that over the past decade the ability to fund EMS has been supplemented by the ability of transport providers to recover their costs from the insurance industry – both government and private payers. When healthcare providers reduced payment, transporters became aggressive with auto insurance carriers; resulting in state limitations on reimbursements. That has resulted in state imposed limitations on reimbursements. Consequently, most EMS companies now charge the individual, who is frequently a taxpayer and believes he/she is already paying for the service through his/her tax collections.

For purposes of financial review, the task force acquired both direct and indirect sources of income from public funding for EMS in fiscal year 2006. Table below shows the distribution of \$1,149,486 in public funds.

<b>Direct:</b>	19	26	29	49	59	69	75	79
Allocation	45,000	67,500	45,000	45,000	45,000	45,000	67,500	45,000
Utilities	7,207	39,215	7,433	5,461	6,277	14,405	21,007	6,193
EMS Supplies	2,950	8,155	6,036	2,408	2,872	7,738	37,459	7,807
Gaming	43,483	43,483	43,483	43,483	43,483	43,483	43,483	43,483
Sub-Total	98,640	158,353	101,952	96,352	97,632	110,626	169,449	102,483
<b>Indirect:</b>								
LOSAP								
Worker's Comp	6,896	6,896	6,896	6,896	6,896	6,896	6,896	6,896
Property / Liability	2,043	15,379	4,065	2,847	4,124	5,695	5,049	3,143
Vehicle Policy	3,074	15,923	10,674	7,516	8,581	7,879	25,287	9,909
Umbrella Liability	659	2,805	2,418	1,925	1,982	2,136	4,323	2,075
Accident Policy	1,165	1,165	1,165	1,165	1,165	1,165	1,165	1,165
Sub-Total	13,837	42,168	25,218	20,349	22,748	23,771	42,720	23,188
<b>Total</b>	<b>112,477</b>	<b>200,521</b>	<b>127,170</b>	<b>116,701</b>	<b>120,380</b>	<b>134,397</b>	<b>212,169</b>	<b>125,671</b>

Currently, Smithsburg EMS and Boonsboro Ambulance Service both have signed agreements with the Division of Fire and Emergency Services in Frederick County, Maryland, as compensation for EMS services provided by these Washington County



companies in Frederick County which result in insurance reimbursement to Frederick County. By doing billing on a countywide basis, Frederick County has determined that (a) transport volumes are more accurately reported and (b) a higher collections rate can be achieved. In addition, consolidated billing enables Frederick County to negotiate a more favorable commission/fee for the collection service, as opposed to billing/collections on a single company basis.

In reviewing data from fiscal year 2005, the eight EMS companies reported a combined total of \$2,771,484.00 in Insurance / Service reimbursements. A total of \$120,207.00 was reported in billing service costs.

By implementing a countywide billing service, it is estimated that total revenue of \$2,824,123.50 could be generated based upon a total of 11,548 EMS transports. The estimates are based on averages from Washington County companies and recommended adjustments in ambulance fee schedules. We used an average collection ratio of 70% on all calls, factoring in the mandated Medicare and insurance write-offs. Medicare estimates are calculated at 50% Medicare age patients. Insurance estimates are based on local averages. These revenue estimates are based on insurance and self pay portions and are generally conservative.

**TOTAL CALL VOLUME – 11,548**

**ALS – 6582 Calls**

50% Medicare	704,638.32
30% Commercial insurance (primary and secondary)	695,666.20
10% Medicaid	71,354.07
10% Self pay and co-payments	<u>133,790.61</u>

**TOTAL ESTIMATED ALS REVENUE** **\$ 1,605,449.20**



**BLS – 4966 Calls**

50% Medicare	501,916.36
30% Commercial insurance (primary and secondary)	572,814.01
10% Medicaid	53,835.31
10% Self pay and co-payments	<u>90,108.62</u>

**TOTAL ESTIMATED BLS REVENUE** **\$ 1,218,674.30**

**TOTAL REVENUE** **\$ 2,824,123.50**

Based upon response data from 2004 – 2006, EMS responses increased on the average of over eight percent per year. Considering that the County experiences a minimum of a 4% annual increase in call volume, the total revenue from third party billing can be estimated to increase as follows.

2007	\$3,050,053
2008	\$3,294,058
2009	\$3,557,582
2010	\$3,842,189
2011	\$4,149,564
2012	\$4,481,529
2013	\$4,840,051
2014	\$5,227,255
2015	\$5,645,436
2016	\$6,097,071
2017	\$6,548,836



## 9.0 Conclusions

EMS and our communities are changing rapidly. We fully appreciate the challenges facing the EMS community. We also understand that the ever-increasing demand by taxpayers and consumers for quality services and effective service delivery will focus more and more attention on:

- Certification and standards of personnel;
- EMS company field operations and financial/administrative stability;
- The elimination of duplicate costs for facilities, personnel and equipment;
- The consistency and standard of care delivered by the system as a whole.

Balancing these needs with the cost of protection will be difficult for the companies and County government alike. The communities need to support and complement our economic and demographic growth with a coordinated and responsible commitment to our fire and emergency medical response system.

Phase I of the implementation will cost approximately \$1,398,265. This task force recommends that in Phase I of “Emergency Medical Services: Plan for the Future,” that the following action should be taken:

1. Review of Policies, Procedures and Education	\$ -----
2. Improve Service Delivery Areas	\$ -----
3. Purchase Enhanced Scheduling Software	\$ 50,000
4. County Wide EMS Service Billing Program Analysis	\$ -----



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5. Maintenance / Fuel Reimbursement	\$ 256,500
6. Advanced Life Support Providers (12)	\$ 702,000
7. Paramedic Chase Unit (4)	\$ 290,185
8. Assistant Chief of EMS Operations	\$ 71,500
9. Uniforms and Personal Protective Equipment	<u>\$ 28,080</u>
	<b>\$1,398,265</b>

If Phase II were fully implemented countywide, the approximate cost using current estimates would be \$4,564,555. The following actions are included in Phase II:

1. Supplemental Career Staffing (84)	\$3,494,403
2. Countywide EMS Service Billing Program Implementation	\$-----
3. Uniforms and Personal Protective Equipment	\$ 181,440
4. Maintenance / Equipment Reimbursement	\$ 393,712
5. Volunteer Corporation Reimbursement Program	<u>\$ 495,000</u>
	<b>\$4,564,555</b>

**\* As with any strategic plan, all costs are estimates and subject to normal levels of fluctuation. An annual review in preparation for the county budget process will be required in ensure the program funding levels meet the financial obligations of the County and volunteer EMS corporations.**

Additional funding would have to be explored to cover Phase II, the sources of which could include either a General Fund tax increase or a new Emergency Services Fee.



This approach is necessary and justified, in order for the County to maintain the volunteer component in the system, thereby mitigating at least a portion of the substantially higher cost of an all career EMS system. Continued volunteer opportunities will allow volunteer personnel the satisfaction of supporting their EMS Company and their community, while at the same time supplementing public funding. This will enable their company to (a) provide the same level of service to their community at a reduced cost, or (b) maintain a high standard of care as the volume and type of service increase in the future. In the process, the existing EMS companies (separate corporations) will be able to spend more time focusing on their volunteer component, by providing guidance and mentoring to their personnel. Cooperative measures between the volunteer and career personnel, within a given company’s operation and among various companies in a countywide system, would relieve some of the operational and administrative pressures on available resources.

The bottom line, in this case, is not purely a financial consideration. While it is true that the foregoing recommendations involve significant funding by county government, this task force sees clear and present justification for the implementation of these recommendations. By acting now, Washington County has an opportunity to establish and develop a countywide combination system that continues to depend upon and benefit from the tremendous dedication, skill and experience of volunteers who have served this county so well for so many years. Any substantial delay in implementation increases the risk that our EMS delivery system will have far fewer volunteer resources from which to draw and that the community’s demand for increased services... without and compromise in the quality of those services... will have out stripped the resources



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and manpower of the individual EMS companies. The solution lies in the ultimate strength and capacity of the entire system, not in an uncoordinated approach to the different operating models and varying financial profiles of the individual companies.