

Consultant Report

Kansas City Emergency Medical Services System Design

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Executive Summary

The City of Kansas City Missouri seeks to provide Emergency Medical Services (EMS) that are clinically excellent, operationally efficient and fully sustainable within a predefined cost envelope.

The City initiated a review and option development process following disclosure of a series of adverse events. These events included: a failed procurement (early 2003); MAST's assumption of contractor responsibilities (July 2003); the City Auditor's report to Council that MAST was not financially viable without additional funding (July 2003); and, MAST's request for an increased annual subsidy of almost \$6 million (FY-03-04).

In light of these and other events, significant concerns were expressed that MAST's operation under the Public Utility Model (PUM) was not viable. In November, 2003, the City engaged the consulting team of Fitch & Associates, LLC to determine the MAST/PUM model viability in Kansas City and to describe the advantages and disadvantages of multiple other system design options. The firm worked with City and MAST officials and other system stakeholders to complete the project.

Just prior to the initiation of the engagement, MAST's Executive Director resigned. During the process consultation, the Unified Government of Wyandotte County/Kansas City Kansas notified the system of its intent to withdraw from the MAST system.

Key information outcomes of the study include:

MAST's Financial Crisis Not a Result of System Design

The public utility model design was not the cause of MAST's financial deterioration. It was the culmination of poor operational and financial decisions by MAST administration and the inability of the MAST Board of Directors to maintain financial accountability or controls. The City did not ensure adequate financial oversight. The following factors contributed to MAST's long-term financial problems.

- ◆ In more than a decade, MAST has not conducted a successful procurement for ambulance operations. Competitive procurements are an important component of the public utility model and are designed to control costs.
- ◆ MAST allowed contractor costs to increase at an average annual rate of 9% for more than ten years.
- ◆ MAST's own expenditures increase at a 10% annual rate over the same 10-year period.
- ◆ Collections from ambulance billings increased on average 8% over ten years but have declined over the last two years.
- ◆ MAST underbid the Kansas City, Kansas contract and the gap between collections and expenditures increased by \$1 million annually.

The result of these events caused the growth in expenditures to exceed the growth in revenue. MAST closed this revenue gap by tapping cash reserves and borrowing money. This left the organization with no recourse other than to request emergency funding from the City when additional negative financial events occurred. These events were:

- ◆ MAST taking over contractor operations and incurring \$1 million in transition costs.
- ◆ A \$1.2 million reduction in Medicare reimbursement during the first year of the federal fee schedule's implementation.
- ◆ Execution of a collective bargaining agreement that included first year wage increases in excess of 20% and at a first year additional cost of \$3.1 million.
- ◆ A \$1 million increase in insurance premiums.
- ◆ The number of ambulance transports decreased by 5,000 during the past three year period reducing revenue by approximately \$1 million per year.

These factors converged and culminated in the financial crisis. Each of the issues described could have been avoided or mitigated by sound financial management and oversight during the last decade.

Multiple EMS Delivery Options Are Available

Four viable but distinctly different system design options are presented in this report. They are:

- ◆ **Exclusive Contract.** The City conducts a competitive procurement to select an ambulance contractor to provide all emergency and non-emergency ambulance services.
- ◆ **Restructured Public Utility Model.** This option reinstates the essential components of the public utility model that have been neglected or eliminated from the current system. The key components are a competitive procurement, effective financial administration, and appropriate financial oversight.
- ◆ **Fire-Based EMS Service.** In this option, KCFD would respond to all emergency medical calls with dual-trained firefighter paramedics and EMTs. The non-emergency calls would be handled by a private contractor selected by bid.
- ◆ **City EMS Department.** EMS operations are provided directly by the City and the department handles all emergency and non-emergency ambulance services.

Each of the options described can be implemented and each was designed to match the clinical quality and response time requirements of the current system. The clinical oversight components of the current system will be retained including direct oversight by the EMS Medical Director, Emergency Physicians Advisory Board, and the Health Department.

The time required to achieve full implement and the cost varies between each option. Option costs are described as transitional and on-going.

Efficiency Enhancements Required Regardless of Option Selected

Opportunities for improving the financial position of the EMS system are provided throughout this report. These can be implemented regardless of the system design option selected. Highlights include:

- ◆ Modifying to the deployment plans to increase efficiency.

- ◆ Reestablishing the response time requirements in place prior to MAST's assumption of operations.
- ◆ Improving the revenue recovery processes to enhance the collection from insurance companies, federal health plans, and patients.
- ◆ Development of cost neutral service relationships with other jurisdictions.

Objective and Deliberate Option Selection Required

The selection of a system design option will have a long lasting impact for the citizens of Kansas City. The current system design has been in place for more than 20 years. Changes made at this point will influence the system for at least that long. The options should be considered carefully and evaluated to ensure the continuation of the exemplary clinical care and response times that have been achieved in the current system. The options should be objectively measured and the following areas should be addressed in the evaluation.

- ◆ The option must be able to continue providing clinical care at the level currently being delivered. The design must have the mechanisms in place to ensure that this care continues to improve and evolve and that it is externally monitored on a continual basis.
- ◆ The option selected must deliver value to the taxpayers of the City. It should represent a cost-effective system that is designed to be efficient. The option should ensure that the system continues to be largely supported by health care dollars in the form of insurance and federal health program (Medicare and Medicaid) reimbursement. The costs of providing the service must remain appropriate and cost increases should be controlled.
- ◆ The option and its participants must be held accountable for their performance. This accountability must be achieved in the operational delivery of the services, the clinical care provided, and the financial performance of the system.
- ◆ Finally, the option selected should provide the citizens of Kansas City with the security of knowing that their emergency medical needs will be met on a consistent and reliable basis and that City's leadership fully understands the importance of this service on the lives of the City's residents.

I. Introduction

Overview

A number of recent events precipitated the City's decision to undertake this project. In recent years MAST's financial condition declined and its relationships with contractors and key customers deteriorated.

In the spring of 2002, it was uncertain whether MAST's contractor could obtain required insurance coverage. At that time MAST executives advocated a direct service assumption. The consultant's report indicated that it was ill advised for MAST to directly operate the system. Insurance was subsequently obtained and the imminent decision to operate the system was abrogated.

In early 2003 the Metropolitan Ambulance Service Trust (MAST) conducted a national procurement process to select an ambulance operations contractor. MAST received one bid from its incumbent contractor that was subsequently rejected as too expensive. In July, 2003 MAST assumed responsibilities of the previous contractor and began directly operating the EMS system.

The City Auditor's Office conducted a performance audit that was released in July, 2003. A follow up report was issued in March, 2004. This performance audit revealed that the organization was in serious financial jeopardy and "is not financially viable."

In FY 2003-2004, MAST requested and the City provided additional funds to maintain ambulance services. City funding increased from approximately \$4.4 million in FY 02-03 to an estimated \$10.3 million in FY 03-04. This 134% increase in City funding elicited questions regarding the viability of MAST, the Public Utility Model, and the City's emergency medical service system as a whole. The dramatic increase in the City's financial support to MAST occurred during a period when the City was struggling to address its own budget shortfall.

These factors compelled the City to further examine the structure of the EMS system and to look at mechanisms to improve financial performance of the service. Fundamentally, the City desires to ensure that the system design is the most appropriate for the community in terms of service, quality, and cost. To that end, the City engaged Fitch & Associates, LLC in November 2003 to evaluate the system and to develop system design options for consideration.

Ultimately, the City seeks to achieve and assure that resources expended for emergency medical services represent good value for the citizens of Kansas City, Missouri.

Project Description

The City of Kansas City, Missouri charged the consultant to review the current EMS system design, examine the performance of the public utility model (MAST), identify potential areas for improving financial performance, and develop system design options for implementation.

Project Goals and Objectives

The project's goal is to develop system design options for the Kansas City pre-hospital emergency medical services (EMS) system. Each system is unique and requires specific solutions to the challenge of providing emergency medical services with appropriate levels of service, clinical quality, and fiscal stability.

The goal is to be met through achieving the following objectives:

- ◆ Preserve a high level of emergency medical response throughout the community;
- ◆ Ensure that the ambulance system meets the needs of patients and stakeholders at a reasonable cost;
- ◆ Ensure that the ambulance system complies with state and local standards; and,
- ◆ Provide a mechanism to continually monitor the performance of the ambulance services and make improvements.

In order to achieve the goal of providing viable, efficient, and high quality system options, it is necessary to analyze the current EMS system design, its operations, and performance. The Metropolitan Ambulance Service Trust (MAST) is experiencing a financial crisis. The City has had to provide emergency funding to maintain the service. A number of questions were to be asked and answered during the analysis and development of system design options. These included:

- ◆ Is the current financial situation the result of poor management or external factors beyond the organization's control?
- ◆ Are there operational or organizational inefficiencies that have unnecessarily increased the cost of providing emergency medical services in the community?
- ◆ Are contractual relationships with other communities financially sound and do these communities provide equitable funding for the system?
- ◆ Has MAST optimized revenue recovery from the users of the service and third party payers? Are the policies, procedures, and systems in place to maximize reimbursement?
- ◆ Are there adequate safeguards within the system to assure accountability and performance for clinical, operational, and financial activities?
- ◆ Is there something inherently wrong with the Public Utility Model for the Kansas City system or have the current problems been caused by internal or external factors that were not responded to in a timely and effective manner?
- ◆ What other system design options should be considered for Kansas City that will maintain appropriate clinical quality, service, and performance levels?

The project activities were designed to answer these questions. The answers form the framework of recommendations to improve financial and operational performance and allow the development of viable system design options.

In order to achieve the desired results, a number of concurrent sub-projects were undertaken. These projects are described in the following sections. A total of seven projects were undertaken. They were:

1. Gather input and provide information to system stakeholders
2. Conduct an assessment of the Public Utility Model
3. Complete an ambulance deployment study
4. Complete an analysis of staffing levels and expenditures
5. Undertake a financial services review of billing and collections and revenue recovery processes
6. Evaluate and develop a minimum of three system design options for consideration
7. Present options to decision-makers and facilitate an options appraisal process to select the system design

Stakeholder Input

The performance of an EMS system is dependent upon the activities and participation of multiple agencies and individuals. It is not solely confined to the ambulance service. In order to understand the system and to clearly document expectations and performance, it is necessary to gather input from system stakeholders, decision-makers, and participants. This is accomplished through individual interviews, group meetings, and workshops. The goal of this collaborative process is to identify issues and opportunities within the EMS system and be able to develop recommendations for system design changes that are acceptable to the community and achieve the performance goals identified by the system stakeholders.

Specifically, the consulting team met with:

- ◆ City Council Members
- ◆ Mayor
- ◆ City Manager
- ◆ City Auditor
- ◆ MAST Board Members
- ◆ MAST Management
- ◆ MAST Labor Representatives
- ◆ Health Department Director
- ◆ Health Department Staff
- ◆ EMS Medical Director
- ◆ EMS Advisory Committee Members
- ◆ Emergency Physicians Advisory Board Members
- ◆ Fire Department Representatives
- ◆ Fire Labor Representatives
- ◆ Others

Public Utility Model Assessment

Questions have arisen regarding whether the Public Utility Model is the most appropriate system design for Kansas City. In order to examine the Kansas City Public Utility Model (PUM) and determine why it is struggling financially, we enlisted two Executive Directors from long-term and successful Public Utility Models.

This team reviewed MAST's operations and finances to determine why MAST is having financial problems while other Public Utility Models continue to function well while facing the same external reimbursement issues and similar internal operational challenges.

This team also provided information on intergovernmental agreements to determine if the arrangements that MAST utilizes to provide ambulance services for other communities are operationally sound, fiscally responsible and consistent with other public utility models.

The results of this project were used to determine if the Public Utility Model is a viable system design option and what changes may be required to improve the system's financial performance. The results of this project are presented in Section II.

Ambulance Deployment Study

The number of ambulances deployed and their locations determine an ambulance service's ability to meet response time performance levels. The level of deployment of staffed ambulances is the greatest factor in defining the cost of an emergency ambulance service.

In order to determine whether the MAST system has the right number of staffed ambulances deployed and whether the service is doing so in the most efficient manner, a deployment study was completed.

The goal of the study was to determine if response time performance can be maintained with fewer resources by more accurately matching demand with the staffed ambulances. The outcome of this project is described in Section III.

Billing and Collections Review

MAST depends on reimbursement from ambulance fees as its primary source of revenue. The amount of revenue collected from fees-for-service has been declining and this reduction has been blamed for much of MAST's financial problems. Medicare has implemented a fee schedule that will result in reduced reimbursement

for Medicare patients, but this may not account for the full reduction in reimbursement.

This project analyzed the processes and procedures used by MAST's billing and collection department. A step-by-step review was completed from the compilation of source documentation from the field to the closing of accounts through payment or write-off.

The objective of this project is to identify changes that can be made to the billing and collection processes to increase collections and to improve cash flow. A summary of the important findings and recommendations are included in Section IV.

Review of Financial Issues

This portion of the system analysis examined expenditures, revenue and trends over the last twelve years. Initially, the review was to cover the last three years, but during the project, it was discovered that financial issues that led to the current situation were a result of long-term financial performance problems.

Separately, the consulting team examined revenue sources in order to identify opportunities to expand revenue to support the MAST system. These may include modification of user fees, additional support from other communities, direct tax support, etc.

The goal of this project is to determine if MAST's expenditures are consistent with other PUMs and whether there are opportunities for savings. Potential options for increasing revenue are also identified. The results are quantified and presented in Section V. Information derived from the evaluation of MAST's revenue and expenditures are also used in the development of the costs associated with the various system design options.

System Design Options Development

The major goal of the engagement is to identify system design options that best fit the unique characteristics of the Kansas City EMS system. The results of all the projects were used to identify four system design options for consideration.

Developing design options required consideration of the current model of EMS system delivery and awareness of potential options. Any design considered must reflect the public mandate and the performance demanded for the delivery of services.

Each option is described in detail in Sections VII through X, clearly identifying the rationale for the selection of the option. In addition, the following characteristics for each option are addressed.

- ◆ Description of the option's governance, operational, and accountability components
- ◆ The option's advantages and disadvantages
- ◆ A comparison of the options with the current system
- ◆ Financial performance characteristics and estimated annual costs of the option
- ◆ The option's impact on quality of care
- ◆ Estimated implementation timeline
- ◆ Potential impact on the current labor work force

Decision-Maker Education and Options Appraisal Process

Ultimately, Kansas City's elected officials will select the system design changes to be implemented. The outcome will likely determine the manner that emergency medical services are provided to the community for the future. The long-term obligation of service to the community requires that this decision be reached with full knowledge of the options and potential consequences.

Our recommendations regarding the evaluation of the options are included in Section VI. System Design Options Summary.

II. Assessment of Public Utility Model Viability in Kansas City

The purpose of this project is to determine what unique circumstances, if any, impacted the Kansas City public utility model (MAST) that led to the system's financial problems. In order to accomplish this review Fitch & Associates involved two of the nation's leading Public Utility Model Executive Directors. Stephen Williamson is the Executive Director of the Emergency Medical Services Authority (EMSA) that serves both Tulsa and Oklahoma City, Oklahoma. Jerry Overton is the Executive Director of the Richmond Ambulance Authority (RAA), Richmond, Virginia.¹ Both represent systems known for clinical, operational and fiscal soundness.

The consultants reviewed MAST Board documents, financial documents, and minutes from the Emergency Physicians Advisory Board (EPAB). An on-site visit was completed where the consultants met with MAST administration. The focus of this assessment was to identify financial trends and compare them with both their own experiences and those of other PUM systems with which they are familiar to determine what factors led to MAST's financial crisis.

Overview of the Public Utility Model

The origins of the PUM can be traced back to the University of Oklahoma's Center for Economic and Management Research where researchers and scientists met in 1972 to study emergency medical services.² The University researchers established the following priorities to guide them in the system design construct:

- ◆ Patient care
- ◆ Financial stability
- ◆ Professional environment
- ◆ Competition
- ◆ Value

¹ Mr. Williamson is the President of the Coalition of Advanced Emergency Medical Systems. Mr. Overton is the President of the American Ambulance Association and a member of the National Academy of Science – Institute of Medicine, EMS Committee.

² Dean, S. Public Utility Model EMS. *Emergency Medical Services* 33(3):87-91,2004

Patient care was the researchers' highest priority and resulted in emphasizing an all ALS system with all ambulances capable of provided advanced life support. Other clinical characteristics included the provision of full service which ensured that patients would receive appropriate care whether they entered the system through the 9-1-1 system or called for non-emergency ambulance service through other means. Screening of calls was also precluded in order to guarantee that any patient requesting service would receive it, regardless of ability to pay or presumed medical condition.³

Guaranteed response time performance is another key element of the Public Utility Model. Response times impact patient outcomes and are important component of meeting of public expectations.

PUM Characteristics

The Public Utility Model encompasses common characteristics found in high quality, high performance EMS systems and incorporates unique components that differentiate the model from other system designs. The common characteristics include the focus on clinical care and emphasis on response time performance. While other systems also adopt efficiency techniques that match the resources to demand, the PUM is known for its aggressive deployment strategies designed to achieve the highest level of productivity possible with consideration to maintaining manageable workload levels for the work force.

The Public Utility Model is designed to provide stability, cost effectiveness, and quality. This is accomplished through defined accountability with checks and balances for oversight of clinical care, operations, and finance. The structure also utilizes and its success is partially dependent upon a performance-based contract for ambulance operations.

Financial accountability lies with the publicly controlled authority which functions as the contract manager. The authority also procures and owns the communications system, dispatch center, and vehicles. Authority personnel provide billing and collection services, membership program, and system financing.

The essential infrastructure and assets of the EMS system remain under public ownership. These include the ambulances, medical equipment, facilities,

³ Ibid

communications systems, and the billing and collection services. The retention of these assets under public ownership provides the system with security in the event that the operations contractor fails to perform or remain a viable concern.

The model is designed to maintain cost effectiveness through periodic competitive procurements where qualified national ambulance organizations vie for the opportunity to provide the personnel and management of the ambulance services. The operations contractor provides field, training, quality improvement, dispatch, and management personnel to deliver emergency medical services.

Clinical oversight is provided through an Emergency Physicians Advisory Board (EPAB) and the system's Medical Director. The EPAB and system Medical Director usually provide regular clinical inputs to the Board of Directors and Regulatory bodies.

Governance is provided by a Board of Directors representing a balance of competencies required to maintain the system's viability. Competencies typically represented include senior healthcare administration, finance, law and senior local business executives with a demonstrable track record in the private sector. The Board of Directors is appointed by the jurisdiction and is accountable to the governmental entity.

The structure of the Public Utility Model was specifically established to provide safeguards to the community and to ensure accountability. The operations contractor is held accountable for response time performance and clinical care by the authority. The authority is responsible for the system's financial performance and is accountable to the Board of Directors which is in turn accountable to the local unit of government.

MAST Deviation from the Public Utility Model

MAST incorporates the fundamental structure and components of a Public Utility Model. Yet, over the years it deviated from the model. As a result, many of the inherent operational and financial safeguards were put aside. The viability of a Public Utility Model in the Kansas City system has been questioned and others have blamed "the model" for the system's financial crisis. This review tracks events over the last ten to fifteen years to identify why the MAST system has neither functioned nor performed as did similar systems and why the financial position of the organization became so critical.

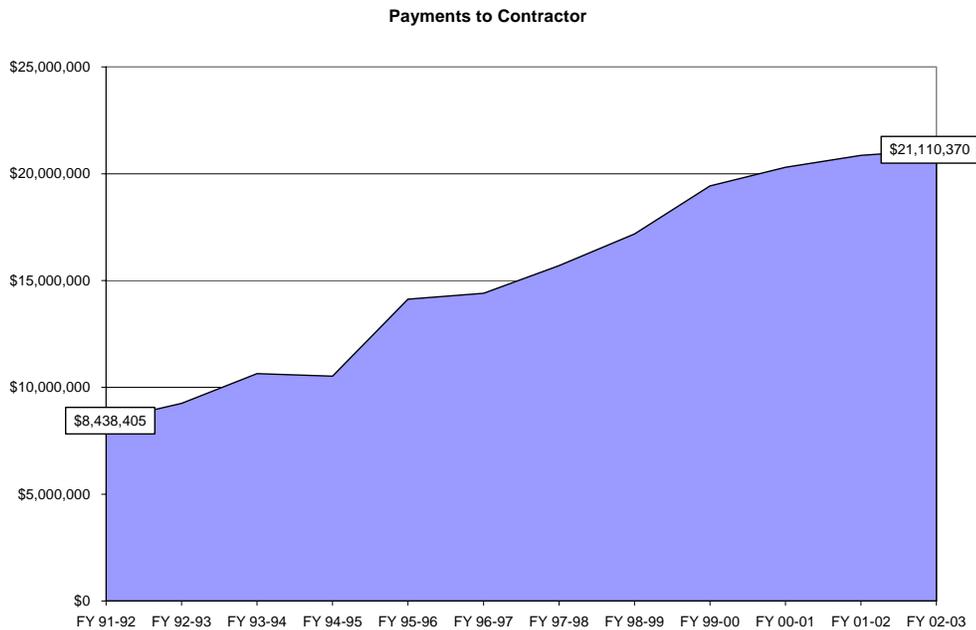
Escalating Contractor Costs

Last year, MAST conducted an unsuccessful procurement process. During that process the existing contractor was the only entity to submit a proposal. This proposal represented a significant fiscal increase over the previous contract. Most of the increase can be attributed to the recently signed collective bargaining agreement with labor that included a first year wage increase averaging over 20% and annual increases for the next two years of 3 to 4%.

Prior to the recent unsuccessful procurement, MAST had not conducted a competitive bid process since prior to 1990. This earlier procurement process resulted in the contract being awarded to the employee-owned company (EPI). One of the foundations of the Public Utility Model is that in order to ensure economic value, the Authority should facilitate competition for the opportunity to provide operational services through periodic competitive procurements. In lieu of periodic bids, other authorities with long-term contractors have been effective in constraining cost increases through diligent negotiations with their contractors. Without periodic competition or diligent negotiations, the Authority cannot ensure that it is getting the best value from its contractor.

From FY 91-92 through FY 02-03, the payments to EPI increased from \$8.5 million to more than \$21 million. The *average annual increase* in contractor payments has been 9.1% per year during the 11-year period. See Figure 1.

Figure 1: Payments to MAST Contractor



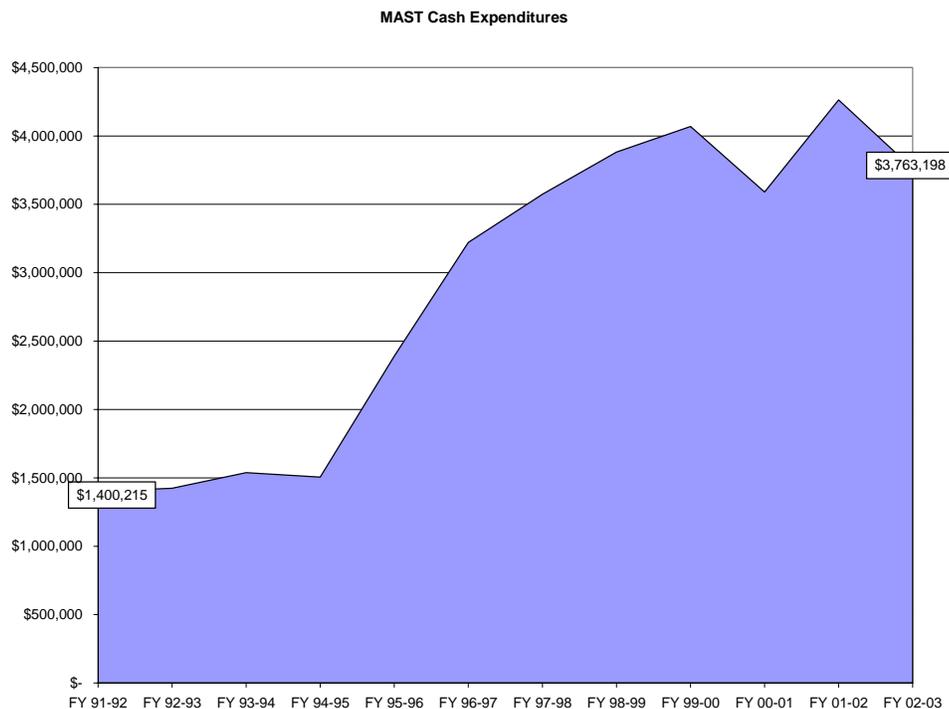
The EMSA system in Tulsa and Oklahoma City experienced *annual contractor payment* increases ranging between a 5% decrease (change of contractor for EMSA in 1999) and 4.1%. The Richmond public utility model system’s annual contractor payment increased an average 2% for the same period. The PUMs increases were during the same period that MAST experienced an annual average increase of 9.1%.

A Public Utility Model Authority has two options for controlling the rate of increase for contractor costs—negotiation with the contractor and/or periodic procurements. MAST did not conduct a successful procurement and was not able to contain contractor costs through negotiations.

Increasing MAST Expenditures

During the 11-year period from FY 91-92 through FY 02-03, MAST’s non-contractor expenditures (excluding depreciation and bad debt) increased from \$1.4 million to \$3.8 million (Figure 2). This represents an average annual increase of 11%. This compares to an average annual (non-contractor) increase at EMSA and RAA of 3.5% and 4%, respectively. The clinical and operational outcomes of each of these systems are comparable to MAST.

Figure 2: MAST Expenditures

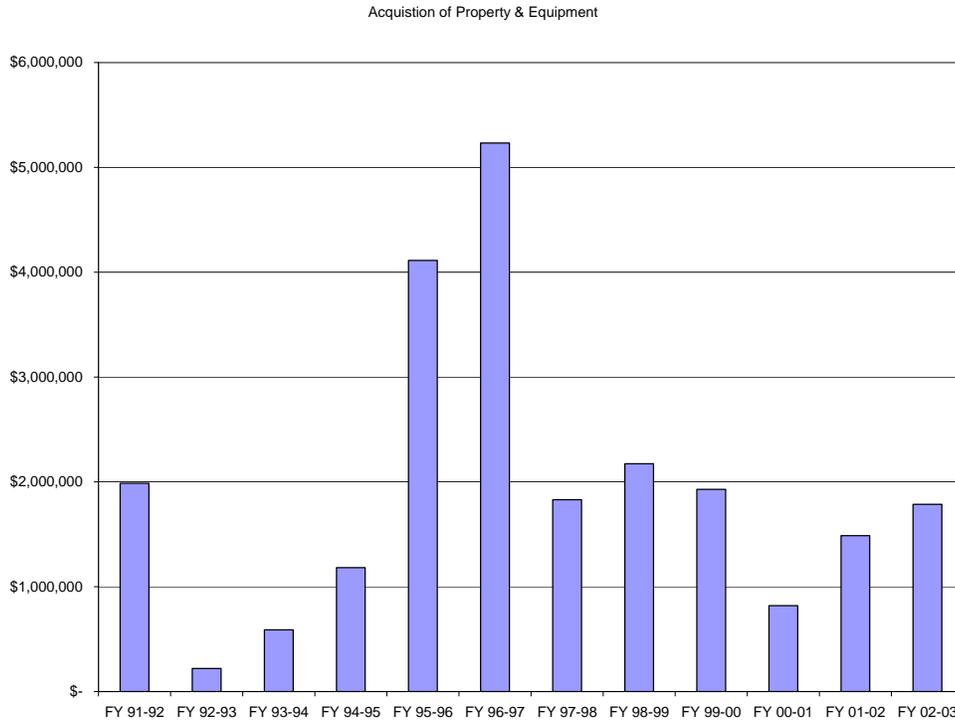


A portion of the increases for both the Contractor and the Authority can be attributed to the expansion of MAST’s service area into Kansas City, Kansas and Wyandotte County during FY 95-96 but this cannot explain the continued spending increases in subsequent years.

Acquisition of Capital Equipment and Facilities

The expansion into Kansas is clearly demonstrated by analyzing MAST’s capital expenditures. During FY 95-96 and FY 96-97 more than \$9 million was spent on capital purchases. Capital expenditures are delineated in Figure 3.

Figure 3: MAST Capital Expenditures



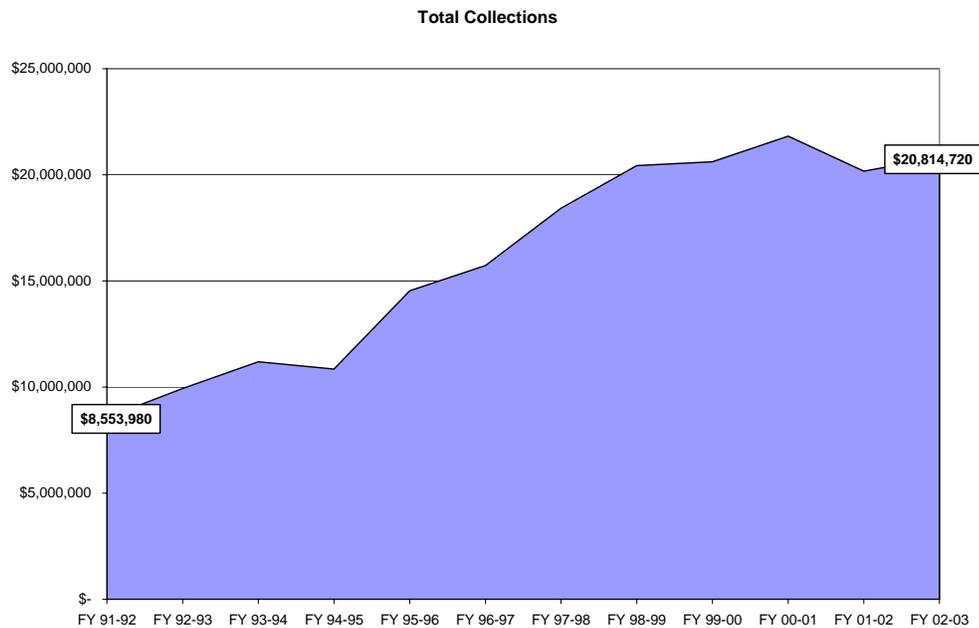
In summary, the expenses of the MAST system increased substantially over the last eleven years. The purchase of capital equipment was more sporadic but averaged \$1.9 million per year and is consistent with the industry.

System Revenue

Reducing required subsidy levels by taking full advantage of all available patient reimbursement inputs is a hallmark of successful PUM systems. MAST has consistently relied upon patient fees and reimbursement for ambulance services to fund its operations. Revenue recovery is dependent upon the actual charges for the services provided and the reimbursement levels from major payers. MAST administration and its Board of Directors have attributed much of MAST's financial problems to the decrease in Medicare reimbursement.

The revenue recovered from MAST’s billing and collection efforts has increased from \$8.5 to \$20.8 million over the last eleven years. This represents an *average annual increase* of 8.9%. See Figure 4.

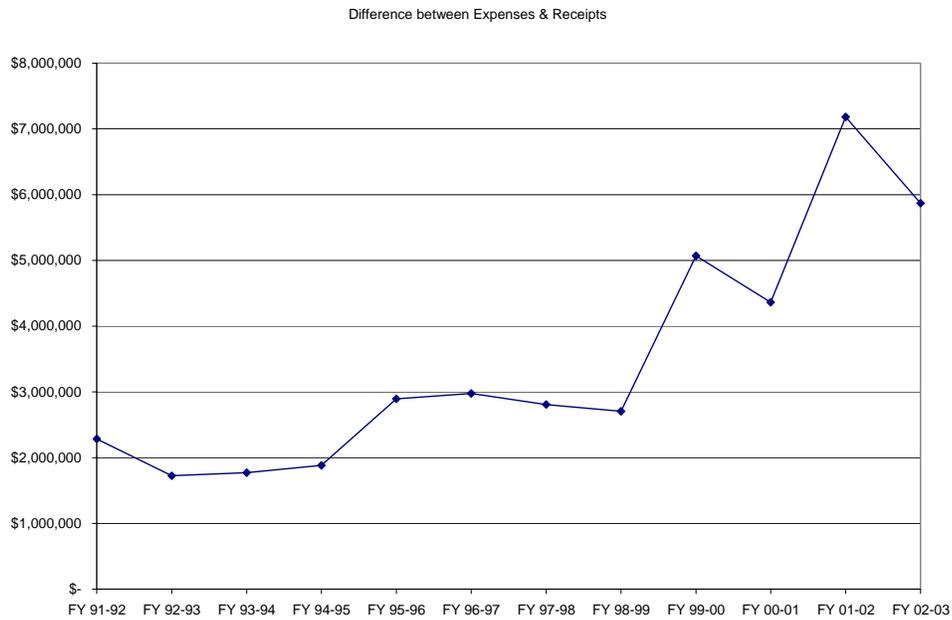
Figure 4: Total Collection from Ambulance Billings



The revenue increase has not kept up with the increases in expenses. This has caused a widening gap between the cost of providing the ambulance service and the revenue generated from fees-for-service. This can best be demonstrated by examining the difference between expenses and billing revenue collections over the 12-year period. During the first four years FY 91-92 through FY 94-95, the average amount that expenditures exceeded collections is \$1.9 million. The second four-year period (FY 95-96 through FY 98-99) the difference is more than \$2.8 million. The final four years has an average shortfall of more than \$5.6 million. These variances are demonstrated in Figure 5.

MAST’s financial crisis did not occur overnight. These events could have been predicted and mitigated had MAST administration and the Board reviewed trend information routinely used in the EMS industry.

Figure 5: Variance Between Expenditures and Collections

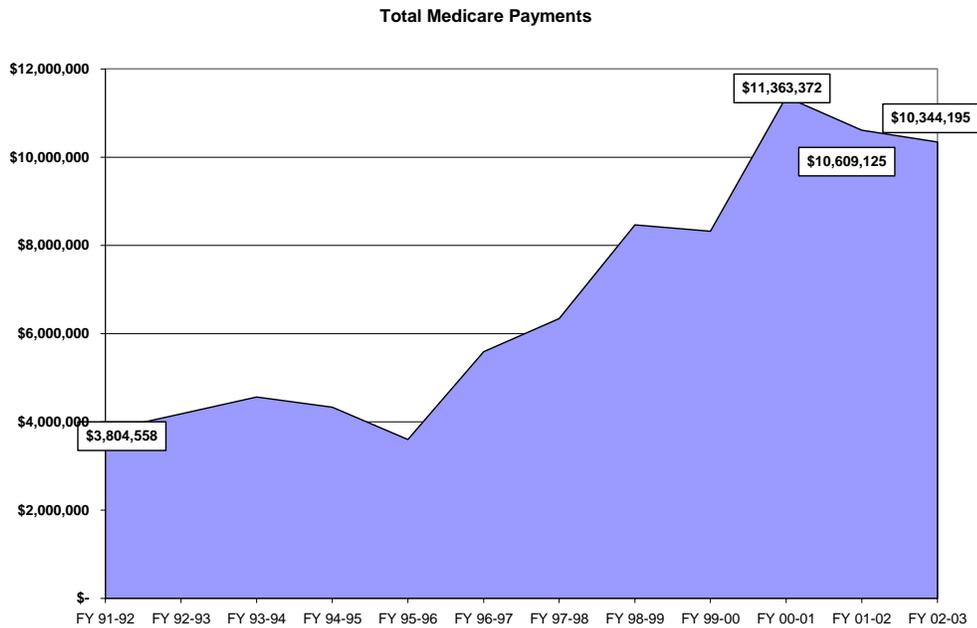


Medicare Fee Schedule Impact

The Medicare Fee Schedule took effect in April 2002. The decrease in Medicare receipts that can be attributed to the Medicare fee schedule was approximately \$1.2 million from FY 01-02 to FY 02-03. The implementation of the fee schedule was initially known in 1997 with a projected effective date of January 1, 2000.

Negotiations and rule-making delays extended the effective date until April 2002. Similar systems pro-actively mitigated the fee schedule's effects by trimming costs, tuning collections, and adjusting rates prior to the start of the fee schedule phase-in. MAST's total Medicare collections are presented in Figure 6.

Figure 6: MAST's Medicare Collections



Transport Volume

MAST annual transport volume increased from 40,000 to 72,000 transports over the last twelve years (See Figure 7). The Kansas operations account for most of that increase (approximately 20,000). Some increases in MAST's expenditures can be attributed to the expansion into Kansas, but other expense increases were not directly related to increases in call volume. A comparison of the ambulance transport volume and expenditures are presented graphically in Figure 8.

Figure 7: Ambulance Transport Volume

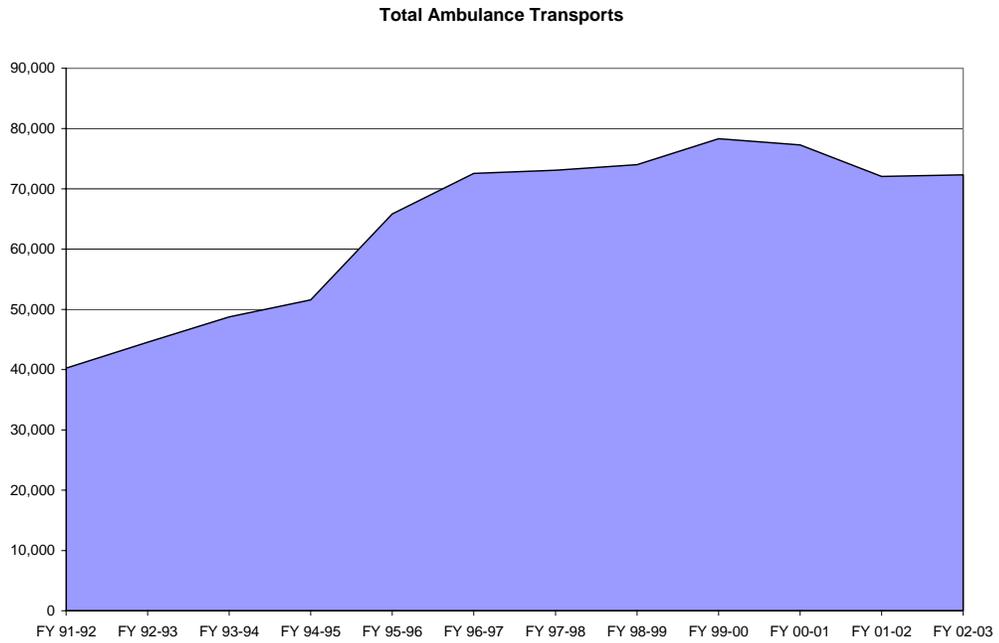
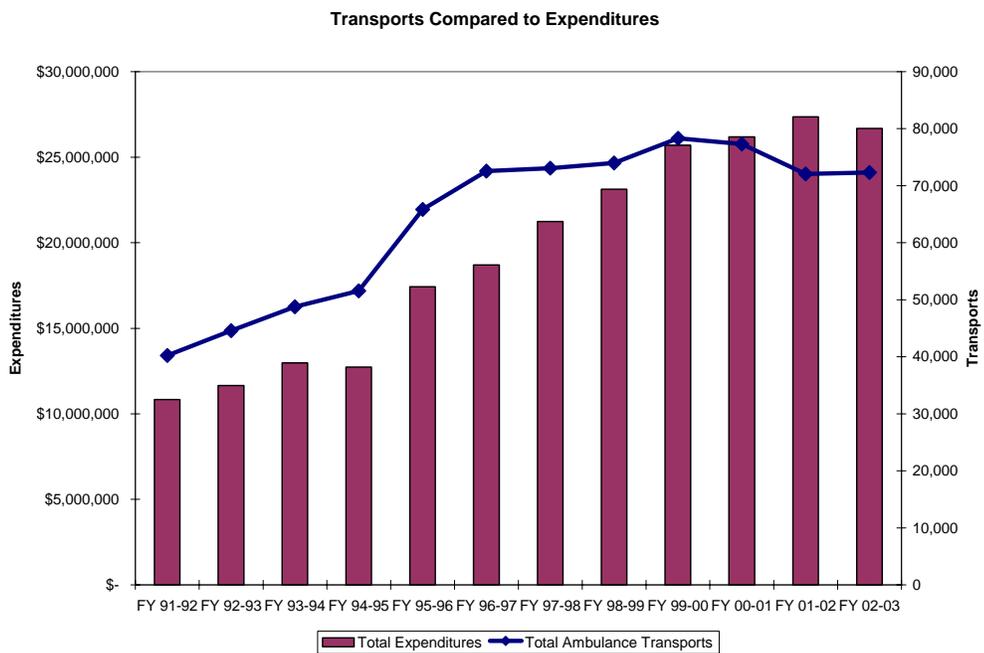
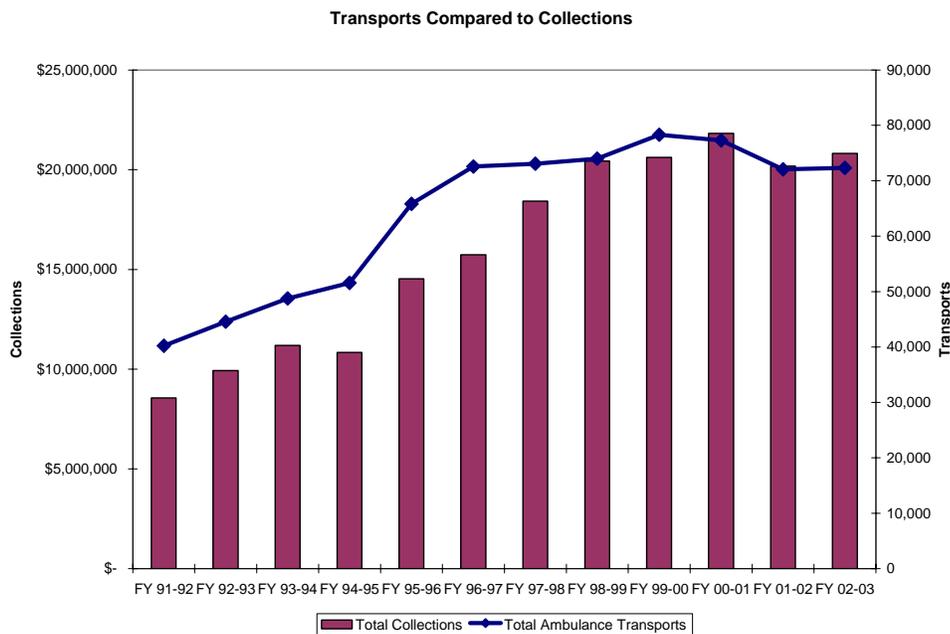


Figure 8: Transport Volume Compared to Total Expenditures



As expected, collections from fees-for-service are closely aligned with changes in call volume. Collections showed a significant increase when the number of transports increased after expanding into Kansas and there was a corresponding decline with the decrease in total transports experienced over the last three years, as illustrated at Figure 9.

Figure 9: Transport Volume Compared To Collections



Impact on MAST’s Cash Position

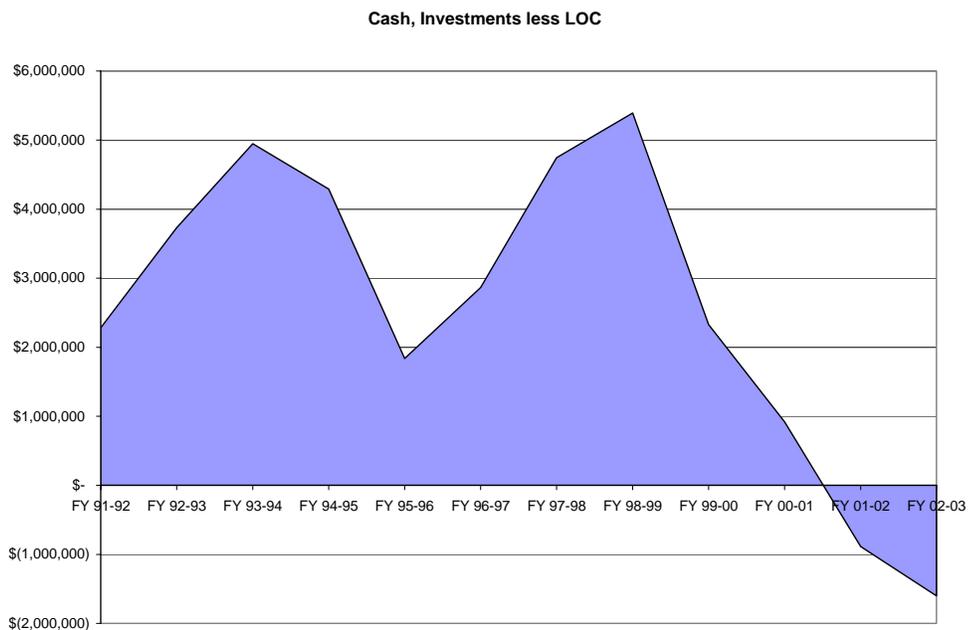
Escalating costs and the unaddressed widening gap between expenditures and billing revenue allowed the financial situation to develop into the current financial crisis. The financial problems began with the expansion of service into Kansas. At that point, expenditures increased significantly and the gap between billing revenue and expenditures widened. MAST was able to avoid the current crisis by relying on its cash reserves.

Typically, governing bodies review cash on hand at the end of the years as a financial benchmark by comparing it to previous years. Cash reserves were used to finance the expansion into Kansas. Between FY 94-95 and FY 95-96, MAST’s cash at the end of the year dropped by \$3 million. MAST was able to rebuild its cash reserves and

by FY 98-99 it was above \$5 million. Events in FY 99-00 precipitated the current financial crisis. MAST used its cash reserves to make up for the increasing shortfall between expenditures and collections. Over the next two and one-half years, MAST consumed its available cash in its entirety and used its line of credit to make up the difference. The change in MAST's cash position at year-end is demonstrated in Figure 10.

Once the cash and line of credit was consumed, MAST went to the City for increased subsidies. This is the reason why there was such a dramatic increase in FY 03-04 in City support for the system.

Figure 10: Cash & Investment at Year End



Findings

MAST's current financial position cannot be attributed solely to the reduction in Medicare reimbursement, nor the recent collective bargaining agreement which instituted large wage increases.

The expansion into Kansas was not a sound financial decision

The origins of the current financial situation can be traced back to MAST's bid to operate the Kansas City, Kansas EMS system and its other service expansion into Kansas. At that point in time, expenditures increased dramatically, large amounts of funds were expended in capital purchases, and the revenue generated by Kansas transports did not cover the costs of providing those services. In essence, MAST underbid the contract or did not fully analyze the cost of providing the proposed levels of service and/or did not accurately estimate the revenue that would be collected for the Kansas transports.

The contractor's costs were not controlled

EPI's fees increased at an annual rate of 9.1%. MAST did not conduct a competitive procurement for an operations contractor until its unsuccessful attempt in 2003. This is an integral component of a public utility model, where the operational costs are controlled through competition and aggressive negotiation.

MAST did not contain its expenditures

MAST was also unable to control its own expenditures. MAST's expenditures increased at a 10.1% annual rate over the last 11 years. The majority of MAST's increases are attributable to salary and wages for personnel, the execution of capital leases for major expenditures such as communications equipment and vehicle chasses, and the costs associated with its occupying of a new headquarters facility. These purchases have added more than \$0.5 million in interest expense per year to the MAST budget.

Recent events and decisions have exacerbated the underlying financial problems.

MAST operating the system

MAST's decision to take over operations from EPI incurred one-time transition costs of approximately \$1 million. While arguably MAST's direct operation of the system may result in limited savings, these savings are inadequate to cover the system's shortfall.

The impact of the collective bargaining agreement

Prior to submission of its bid to MAST, EPI reached agreement with labor that resulted in first year wage increases averaging 21%. This Agreement change represented a single year increase in costs to the system of \$3.1 million.

Fewer transports resulting in less revenue

MAST has experienced a decrease in annual transports over the last three years of nearly 5,000 annually. This corresponds to an annual reduction in patient collections of approximately \$1 million.

Impact of Medicare Fee Schedule

MAST anticipated a reduction of \$1 million annually as a result of the implementation of the Medicare Fee Schedule. For the first full year of the phase-in of the fee schedule MAST's Medicare revenue decreased by \$1.2 million. Continued decreases in Medicare reimbursement are projected through the fee schedule phase-in process, but the full impact is not expected to be felt by MAST until 2010.

Insurance increases

MAST placed itself in the position of having to insure its operations with the recent takeover from EPI. Two factors caused an estimated \$1 million increase in insurance costs. First, the ambulance industry experienced dramatic increases in liability and malpractice insurance premiums. Many ambulance services experienced 20% increases or more. This occurred while MAST was securing coverage. Another important factor which increases insurance premium costs is that new providers are charged higher rates than those who have demonstrated a solid claims history.

Failed negotiations with Kansas City, Kansas

In the midst of other events, MAST was unable to recognize or unwilling to admit its error in bidding Kansas City, Kansas. KCK officials desired system changes that

could have been financially beneficial to MAST had it not been engaged in what has been described as a zero-sum negotiation.

Summary of Implications

MAST has consistently demonstrated excellence in the provision of patient care and in its response time reliability. These essential functions have continued to be delivered in an exemplary fashion regardless of the organization's financial problems.

The purpose of this analysis was to determine why MAST reached its current financial crisis while at the same time other public utility models have remained viable and financially sound. The key findings above outline what happened but do not fully describe *why* they happened. In the following paragraphs, we will use our experience operating and examining public utility model systems to describe why this occurred.

1. The expansion of MAST's service area into Kansas was not based on sound financial analysis and planning. The cost of providing the service exceeded the revenue that could be produced and the agreement did not provide adequate public funding from Kansas jurisdictions.
2. True competition was not utilized as a foundational component of the Kansas City public utility model. When EPI was formed as an employee-owned company, MAST's ability to effectively conduct a procurement was seriously impaired. MAST could have effected incremental changes in its specifications to reduce the impact of EPI's ability to influence the outcome of subsequent procurements. MAST failed to do so. Potential bidders were rightly concerned about their ability to successfully bid against the incumbent workforce and if successful were unsure that they would be able to assimilate them into their own workforce as satisfied employees. MAST was ineffective in negotiating with EPI in order to contain costs.
3. The most serious failure of the MAST system was the on-going lack of financial accountability. The MAST Board and its management team primarily focused on patient care and response time performance and were able to maintain exceptional clinical performance through extensive accountability systems required by the EPAB and City Health Department. Unfortunately, no one provided the same level of disciplined fiscal oversight. The early warning signs of long-term financial problems first appeared in FY 95-96. Neither the MAST

Board nor its management team identified the financial trends or developed mitigation strategies to address what would grow to be a serious fiscal crisis for the system. The trend was established more than 8 years ago that would leave MAST vulnerable to additional negative financial influences. The financial impact of the recently signed collective bargaining agreement, reduced transport volume, insurance increases, and the reduction in Medicare reimbursement combined to eliminate MAST's financial viability.

4. Corrective actions could have been taken during the previous 8-year period to avert the current financial situation. If there was adequate financial management of the system and appropriate oversight by its Board and the City, it would have been possible to avert the current financial crisis. A number of options were available including rate increases, additional funding from other jurisdictions, efforts to control both Contractor and MAST costs, and the negotiation of a collective bargaining agreement with lower first year financial impact.

Conclusion

The financial failure of the MAST system cannot be attributed to the Public Utility Model. In fact, if all of the components of the Public Utility Model were in place and managed effectively, MAST's current financial distress clearly could have been avoided.

The financial problems associated with MAST can be directly attributed to financial mismanagement by MAST's administration and the failure of the MAST Board to ensure financial accountability. The City also bears some responsibility for being slow to intervene at an earlier point or to have required additional fiscal oversight as the crisis developed.

III. Deployment Analysis Summary

The purpose of conducting a deployment analysis is to determine if MAST is deploying an appropriate number of resources (staffed ambulances) to meet the system's demand and achieve appropriate response time performance. An extensive analysis was completed by the operations research/ management science staff of Urgences Sante, Montreal's EMS system. The full Deployment Analysis Report has been provided to the City under separate cover due to its size and technical nature. The following sections summarize the various analyses conducted, specific findings resulting from the study and recommendations for implementation.

Approach and Context

The Deployment Analysis reviews MAST's ambulance service deployment practices and response time performance by examining call times, location and work schedules. It is an analysis based on source data transferred from the MAST CAD (Computer Assisted Dispatch). This facilitated a more scientific approach to system analysis by parties with no vested interest. The results of the analysis are statistical in nature and must be considered within the workforce and labor agreement constraints. We are conscious that there may be multiple valid reasons for the performance of the current system and that all that is observed in this analysis may have a plausible explanation that may or may not be modifiable.

The Report is subdivided into three distinct components: Demand Analysis, Geographic Deployment Analysis and Schedule Analysis. The first two documents are strictly comparative in nature and they compare and contrast the actual deployment methods used by MAST using a different method of analysis. This means that the first two documents can be used as independently to describe the system, its deployment, and performance. The third component is comparative as well but is built on the two prior analyses to draw conclusions regarding the impact of modifying deployment resources and staffing schedules.

Demand analysis

Demand is defined as the required amount of service. It has two elements—qualitative inputs and quantitative inputs. Qualitative is represented by the response time requirements that the service has to meet for each call category. Quantitative inputs are represented by the total amount of calls that have to be responded to and completed at any given time.

The objective of the demand analysis is to accurately predict future call demand patterns (both time and general location) based upon the actual historical information available to the system. This is considered the most reliable methods available contemplate resources required to meet anticipated demand.

In this analysis we used a trending technique to determine what the future demand would look like. This allowed us to conclude that the demand will be relatively flat over the next few years. This facilitated analysis of annual demand, monthly demand, weekly demand and daily demand patterns. When we compare the methodology that is currently being used with the method that we applied one can quickly see that a trended method results in a less erratic pattern than the results of pure historical method.

Matching of resources and demand is important to achieve the highest level of efficiency possible while maintaining mandated performance levels. The smoother a demand analysis the more useful it is for schedule analysis and development. This allows a service to match request for calls with appropriate resources. In other words, enough ambulances are staffed and on duty to respond to and complete the number of call requests that can be expected based on historical experience.

We concluded that the current deployment method was built based on extreme changes in demand. The peak is too sharp and high (driven by few calls at a specific time of day) and the pattern is too low at other times. It was also observed that low priority calls (interfacility transports) are used to protect the response times. Thus the demand curve assumes a certain delay in interfacility transports.

Deployment analysis

The second analysis was of the geographic deployment model. It yielded call density and response times per call priority. An analysis was completed to see if the current deployment model is able to yield the required response times and then we modeled the system without any limits. We constructed a theoretical model that randomized

1,500 addresses across Kansas City, Missouri. Using each post and a constant traveling speed we determined the time traveled from each post to each simulated call. This allowed us to determine the optimal number of posts required to yield the desired response time. This is a theoretical model in that there are no traffic considerations or human bias. It is a realistic model because it uses existing roadways and a 35 mph travel speed. This allowed us to determine that the optimal territorial (geographic) coverage is achieved with seven vehicles on post and ready to respond to the next call.

Schedule analysis

The third analysis was a schedule analysis. Schedule analyses concentrates on two factors; schedule ergonomics and schedule efficiency versus inefficiency.

Our conclusion is that the actual MAST schedules have deficiencies on both ergonomic and efficiency factors. Most schedules are negotiated so it is normal to for a relative high level of irregularities to be observed.

As far as the schedule ergonomics we note that the actual schedules have people working every weekend while others never work a weekend. In addition, some schedules start in the middle of the night (e.g. 3:00 AM)

When we analyzed the schedules we observed that due to the demand curve presently in use the schedules are 22% inefficient. By modifying the demand curve we were able to reduce three thousand unit hours per year and yield similar response time performance. We also developed an optimal scenario which would achieve response time performance goals for all categories of calls including the interfacility and non-emergency transports. This optimal scenario would require an additional two thousand unit hours per year.

Deployment Findings

MAST deploys approximately 174,000 unit hours (staffed ambulance hours) per year in order to meet the EMS system's demand and achieve the proscribed response time performance levels.

MAST consistently achieves high levels of emergency response time performance:

The MAST system consistently provides excellent response times for emergency ambulance requests. In order to achieve this performance level, the non-emergency and interfacility transports are often delayed.

MAST's deployment plan not as efficient as possible:

Mast's deployment plan has a relatively high level of inefficiency (22%). This can be reduced by redistributing the ambulance to more closely match the expected demand. The efficiency of the deployment can be improved by 27% by modifying the deployment plan and personnel schedules.

3,000 unit hours can be eliminated:

Modifying the deployment plan and personnel schedules can reduce the system's unit hour requirements by 3,000 annually while improving response time performance. This small decrease (2%) can result in annual savings of approximately \$250,000.

Lengthening response times by two minutes will reduce unit hours by 14,000 annually:

The current response time commitment by MAST for life-threatening responses is 8:59, ninety percent of the time. If the response time requirements were relaxed to 10:59, ninety percent of the time, 14,000 fewer deployed ambulance hours are required. This would equate to annual savings of approximately \$1.4 million.

MAST modified response time requirements and increased costs in July 2003:

When MAST assumed contractor operations, it entered into an agreement with City that retained the 90% city-wide response requirement but reduced the compliance required in each of the five zones of the City from 89 percent compliance to 85 percent compliance. As part of that same agreement MAST eliminated response time exceptions for unique circumstances beyond the Contractor's control. Exceptions had typically included unusual system overload, extreme weather, road construction,

etc. Consideration of exceptional circumstances beyond the contractor's control is standard practice among high performance systems.

The effect of the changes was to make it more difficult to achieve response time compliance. In an attempt to meet its response time obligations, MAST subsequently increased the number of weekly scheduled shifts (typically a paramedic and EMT working 42 hours per week) from 79 to 81 with attempts to fill additional shifts to a level of 87. Currently, 86 shifts (80 ALS and 6 BLS) are scheduled. This increased the number deployed unit hours by more than 15,000 per year increasing costs by an estimated \$1.2 million.⁴

We could find no published information or other clinical evidence that such a response time change would positively impacted patient outcomes.

Deployment Recommendations

The following recommendations are designed to achieve system savings while maintaining an appropriate response time performance level.

Reestablish previous response time requirements and reduce number of scheduled shifts:

MAST was not in a financial position to increase the costs of the system in July 2003 by making it more difficult to achieve response time requirements. Adding additional shifts and the associated costs provided a significant burden on the financially strained system. The previous response time exception consideration should be reestablished and the number of shifts reduced to achieve a savings of approximately \$1 million annually. Consideration should be given to maintaining the 5% variance between council districts so long as the variance in any one district is not allowed to become chronic.

⁴ 7 additional shifts X 42 hours per week X 52 weeks = 15,280 unit hours: 15,288 unit hours X \$80 = \$1.2 million

Modify deployment plan and staffing schedules to gain efficiency:

Findings in the Deployment Analysis provide the opportunity for MAST to gain efficiencies in the distribution of its resources. The Deployment Analysis should form the basis of on-going deployment plan work and system improvement. If the response times requirements are reestablished to the pre July 2003 levels, we cannot project additional savings for improvements in efficiency. If the response time requirements remain the same, 3,000 unit hours can be removed from deployment with savings approximating \$250,000 annually.

IV. Revenue Recovery Summary

The MAST system relies on the recovery of reimbursement for ambulance transportation from insurance companies, federal health programs, and patients as its primary funding mechanism. In FY 02-03, seventy-eight percent (78%) of the organization's expenditures were funded from patient fee recovery.

Payer Mix

The amount of revenue that an organization can collect from fees for service is largely dependent upon the payer mix. The primary payers for ambulance services are insurance companies, Medicare, Medicaid, and the patients. Each payer type has its own collection rate (percentage collected compared to the total charges).

In MAST's FY 02-03 payer mix for charges and collections is delineated in Table 1.

Table 1. MAST Payer Mix

Payer	Percent of Total Charges	Percent of Total Collections
Medicare	36.0%	53.5%
Private Pay	29.0%	9.1%
Medicaid	18.1%	8.9%
Insurance	16.9%	28.5%

Medicare is the largest payer for ambulance services and accounts for 36% of the total charges and 53.5% of the total revenue collected. The next largest source of revenue from patient fees comes from insurance companies with 16.9% of the total charges and 28.5% of the total collections. Medicare and private insurance account for 82% of the funds collected for ambulance services.

The following charts demonstrate the four-year trend in payer mix, charges, and collections. Figure 11 shows the percentage of total charges by payer during that period. The percentages of collection by payer are demonstrated in Figure 12.

Figure 11. Percentage of Charges by Payer

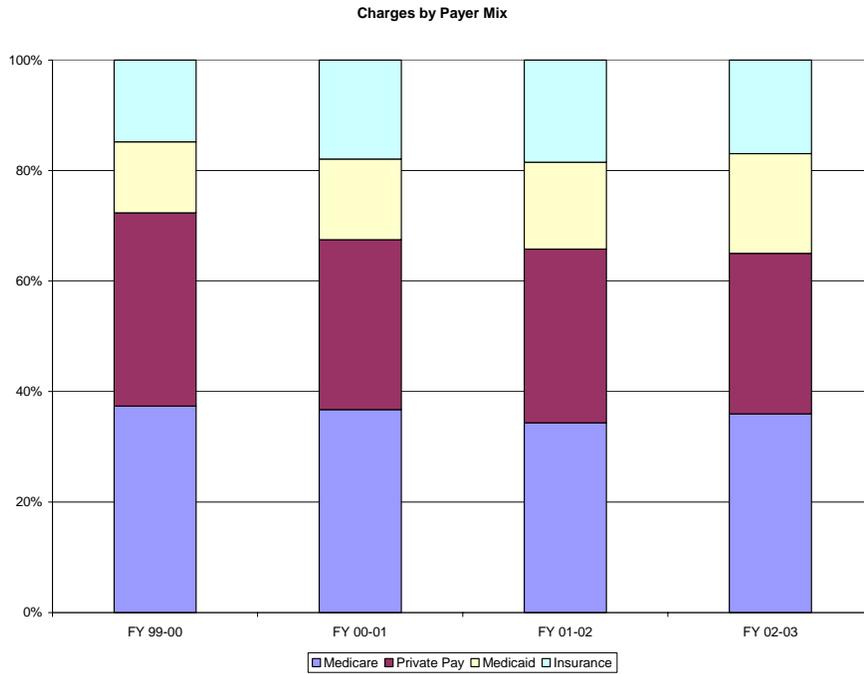
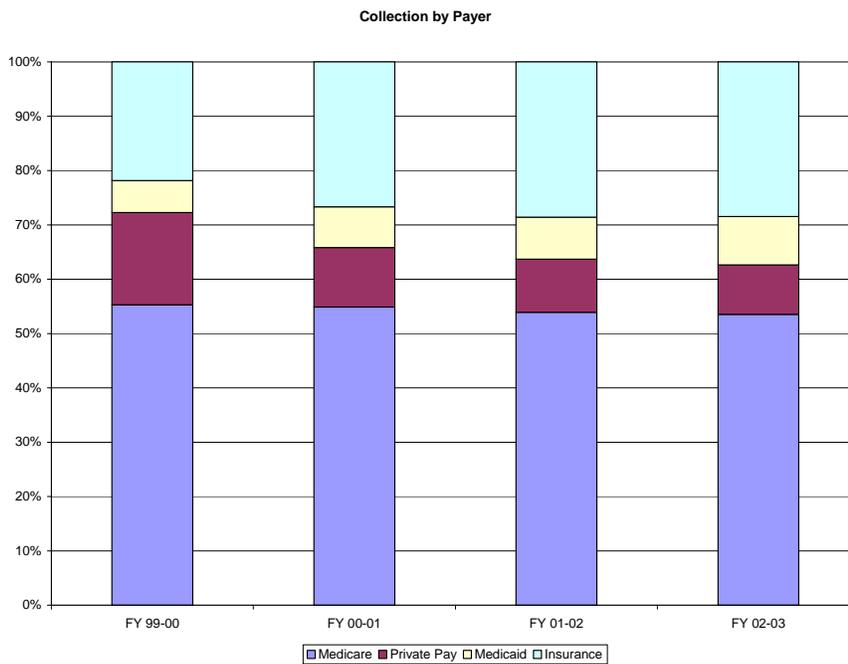


Figure 12. Percentage of Collections by Payer



The next two figures provide another look at the charges and revenue by payer. Figure 13 shows that the total charges for ambulance services exceed \$40 million per year. The total collections documented in Figure 14 are less than \$20 million. The reliance on Medicare reimbursement is clearly demonstrated in this figure.

Figure 13. Total Ambulance Service Charges

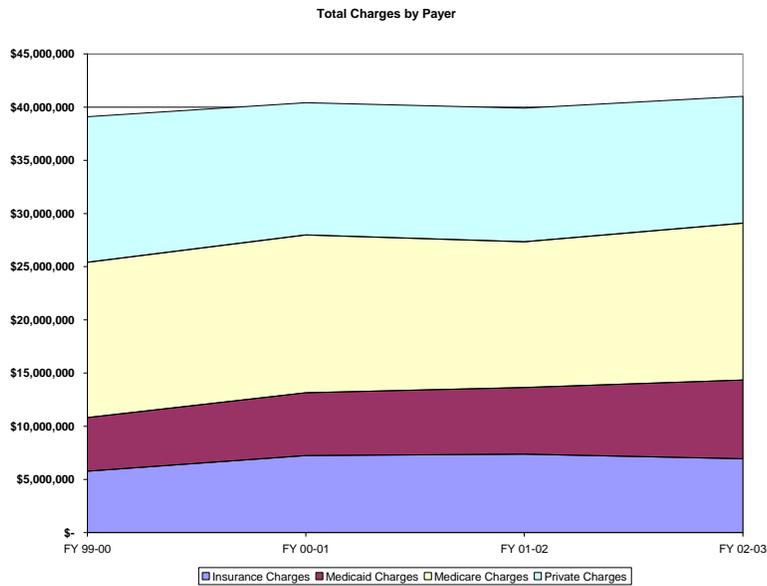
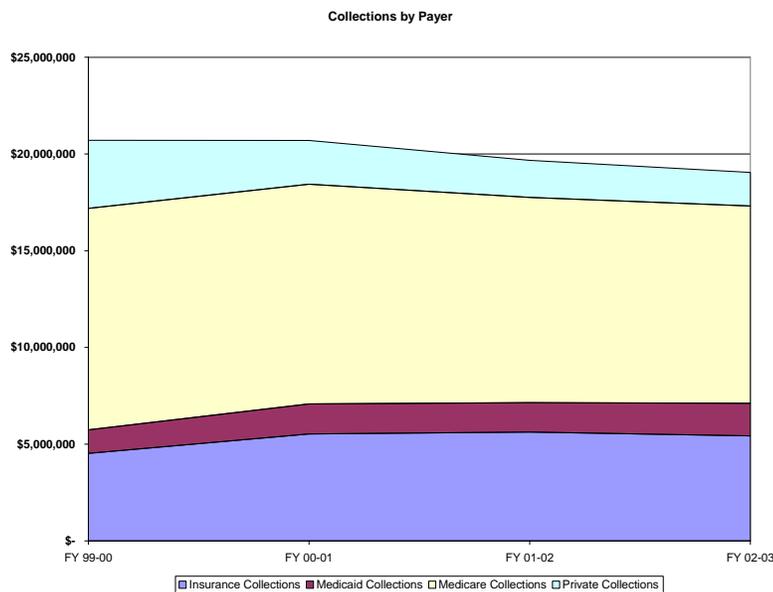


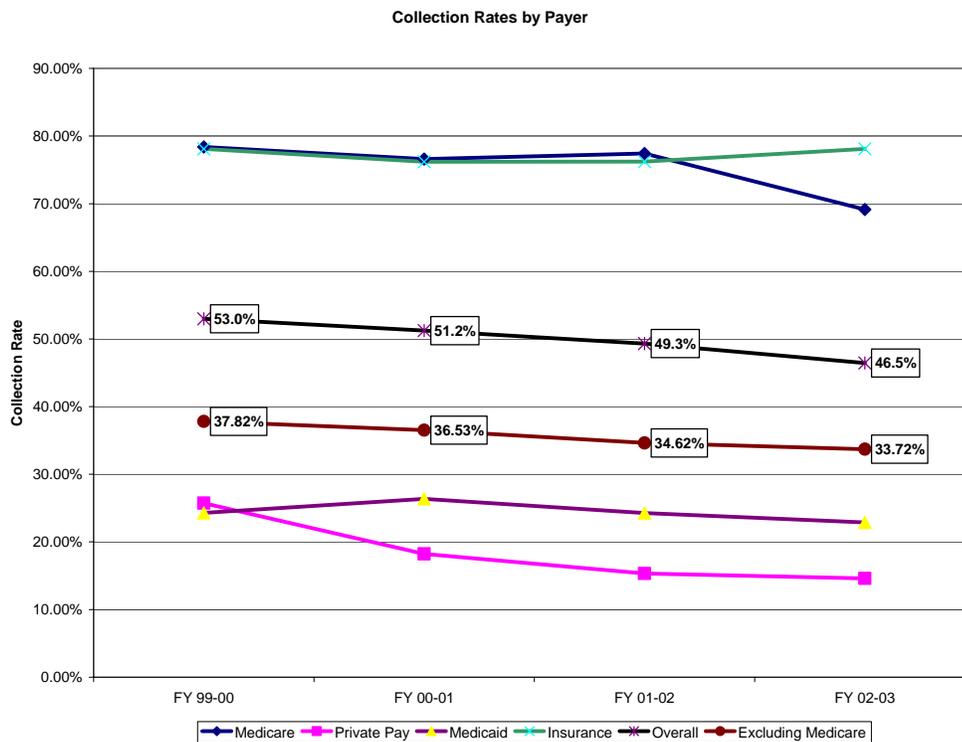
Figure 14. Total Ambulance Service Collections



Collection Rates

The collection rate for each of the payers is demonstrated in Figure 15. The two labeled series on the chart reflect the overall collection rate and the collection rate for all payers except Medicare. Both of the trends are concerning. Both the overall and “except Medicare” rates are declining indicating that the amount of funds collected based on the charges is falling.

Figure 15. Collection Rates by Payer



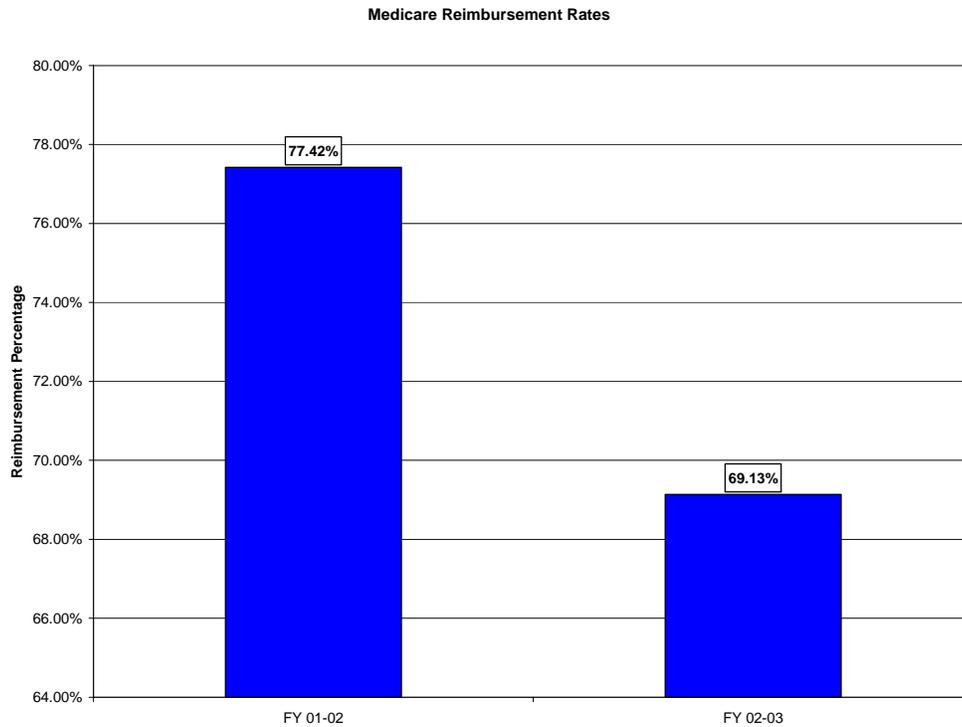
The non-Medicare decline in collections between FY 01-02 and FY 02-03 resulted in a loss of \$236,000 in non-Medicare reimbursement. This is most likely attributed to billing processes rather than payer changes. Collection rates for all payers except Insurance have declined over the last three years. Medicare collection rates decreased by 7.5%, Medicaid collection rates fell 3.5% and private pay collection rates declined by 3.6%. During that same period the overall collection rate fell 4.7%. The total impact of this collection rate fall is a loss of revenue of \$1.9 million in FY 02-03.

The Impact of the Medicare Fee Schedule

In April 2002, Medicare began the phase in of a fee schedule for ambulance services. The impact on the MAST system is a significant reduction in Medicare reimbursement rates. The recently enacted Medicare Prescription Act has provisions which provide some relief for those ambulance services hit hardest by the fee schedule. These provisions include an extension of the phase-in process for some ambulance services until 2010 and an 18 month 1% increase in reimbursement for urban areas. It is impossible to calculate the full impact of these relief measures until rules and additional information is provided by Medicare, but this will likely mitigate the negative impact somewhat over the next 5 years, although there will still be significant reductions in MAST's Medicare reimbursement levels.

The single year decline in Medicare reimbursement from FY 01-02 to FY 02-03 representing the first year of the Medicare Fee Schedule phase-in is demonstrated in Figure 16. Medicare collection rates dropped 8.3% in the first year of the Fee Schedule. This represents loss of Medicare revenue to MAST of approximately \$1.2 million.

Figure 16. Medicare Reimbursement



Patient Financial Services

We reviewed the policies and procedures used in the billing office and observed and interviewed staff members. MAST’s CFO indicated that there was a significant drop in non-Medicare collections at the end of FY 02-03 that continued into FY 03-04. A number of reasons were attributed as potential causes, but none were definitive. Recommendations from MAST’s accounting firm on billing system changes were previously adopted which resulted in significant delays in getting the patient invoices and claims processed. These delays often extended to weeks after the date of service. Lack of executive leadership was also identified as a constraint—the billing office manager reported directly to the Executive Director rather than the Chief Financial Officer. This structure did not provide the level of financial accountability and oversight required for Patient Financial Services.

The misguided bonus program was identified in the City Auditor’s report where employees were rewarded while not reaching goals or achieving inappropriate goals compounded the problems. In FY 01-02 more than \$700,000 was paid out in bonuses. Finally, the organization is using software that is 20 years old and does not

provide the tools to effectively manage patient account processing and follow-up. The following paragraphs include some of our important findings and recommendations.

Billing software system

Finding: The current billing system is antiquated, non-compliant, and difficult to use. The billing system is not capable of effectively managing accounts and allowing for comprehensive follow-up.

The system is not compliant with the HIPAA rules for transmitting healthcare data electronically

Recommendation: We recommend that MAST replace the current billing system with a billing system that allows payer specific queues for follow up. The queues should have the ability to be customized to reflect the nuances of MAST ambulance's payer mix, and expected time frame of reimbursement. The system should also allow for reporting of open accounts and accounts which need to have follow-up calls. Billing cycles should be modified to reflect the actual payer processes. For example, if MAST staff members know that a specific payer takes 45 days to process and pay a claim, the follow up calls to that payer should be scheduled at the 46th day if it has not been paid.

The billing system should be compliant with all current and future HIPAA regulations and should have mechanisms to interface with MAST's general ledger system.

Implementation of a new billing system is not without risk. MAST should expect a short-term decrease in cash flow during a two-month transition. This is estimated to range from \$300,000 to \$500,000. Most of this revenue will be recaptured after the system is installed and the personnel are comfortable using it and management is able to take advantage of the tools incorporated to manage the accounts receivable.

General ledger and billing system reconciliation

Finding: MAST's auditors have identified in the last few annual audits that the subsidiary patient accounts ledger (billing software system) does not reconcile with MAST's general ledger. This problem has never been resolved and provides two sets of numbers on which MAST management must base decisions.

Recommendation: MAST, with the assistance of outside resources, should immediately undertake a process to reconcile the subsidiary patient accounts ledger with the organization's general ledger. After this one-time reconciliation, MAST administration should implement processes to ensure that the two ledgers balance on a monthly basis.

Billing process issues

The Patient Financial Services department was reorganized and implemented new processes and procedures in December 2003. Early indications are that this has had a positive impact on collections and cash flow. It is too early to determine the full impact.

Findings: Policies, procedures, roles, performance targets, still remain unclear within MAST's patient financial services group. While recent changes are a movement in the right direction, much work need to be completed to increase consistency, equitable workload distribution, and to develop system to establish and monitor productivity standards.

MAST does not have a formal compliance plan in place to ensure that all of the federal and state rules and regulations are followed on a daily basis. With the complexity, particularly of federal healthcare reimbursement, it is necessary to have a comprehensive plan that is followed and used to ensure compliance.

Reconciliation between dispatch incidents and call documentation is not occurring within the billing office. There is no way that the billing personnel can verify that all transports are supported with appropriate paperwork.

Management is not currently tracking the output and productivity of the billing office. There are areas, such as follow up and data entry, that have productivity issues that should be addressed. It would be beneficial to start tracking what exactly the billing office accomplishes on a daily, weekly, and monthly basis. This will be a beneficial tool to determine if staffing levels are adequate for business needs. It will also help to identify what the billing office does well, and areas in which there are opportunities to improve processes.

Recommendations: The Patient Financial Services department needs to continue to restructure and formalize its policies and procedures. Comprehensive training for all personnel needs to be conducted on a regular basis. Cross-training of individuals is

important and there needs to be a better department-wide understanding of the billing and collection process and of each individual's role in process.

Emphasis needs to be placed on account follow up. Currently, little effort is devoted to follow up due to time and billing system constraints. This is an *essential function* of the department and significant resources and effort need to be directed to follow up activities in order to optimize revenue recovery.

Productivity standards should be developed to provide the staff with a benchmark for daily and/or monthly productivity. Each staff member should have a clear understanding of how their performance directly impacts the success of the organization. Management should keep the staff involved and communicate how the billing office is performing compared to the office goals. Some of the items management may want to share with the staff are:

- ◆ Collections – Actual vs. Goal to Date
- ◆ How the collection goal is established and why it changes
- ◆ Trip Entry – Actual vs. Goal
- ◆ Payment Posting – Actual vs. Goal
- ◆ Days in Accounts Receivable – Actual vs. Goal
- ◆ Quantity of Claims Needing Follow Up
- ◆ Quantity of accounts closed during a period – Actual vs. Goal
- ◆ Recognize staff for areas they have excelled in
- ◆ Brainstorm ideas and target areas for improved performance

MAST management should develop and implement a compliance and quality assurance process to ensure the integrity of the data entered into the billing system. A formal compliance plan should be integrated with the quality assurance process. Accounts should be randomly audited by management to ensure appropriateness of work, adherence to state and federal regulations, timeliness, and accuracy.

Daily, a process should be in place for the billing office to be sure that the paperwork for all patient transports is received, is complete, and accurate.

We recommend that management track each of the work functions of the business office. Key items to track include:

1. Quantity of incoming phone calls

2. Quantity of outbound calls
3. Quantity of incoming correspondence
4. Quantity of trips entered into the billing system
5. Quantity of insurance invoices, private invoices processed
6. Quantity of accounts closed/paid
7. Account ratio per FTE
8. Quantity of insurance denials
9. Quantity of requests for supplemental information from payers
10. Time frames such as:
 - ◆ DOS to data entry
 - ◆ Data entry to invoice/claim drop
 - ◆ Claims filed to payment received
 - ◆ Payer request for additional information to information sent

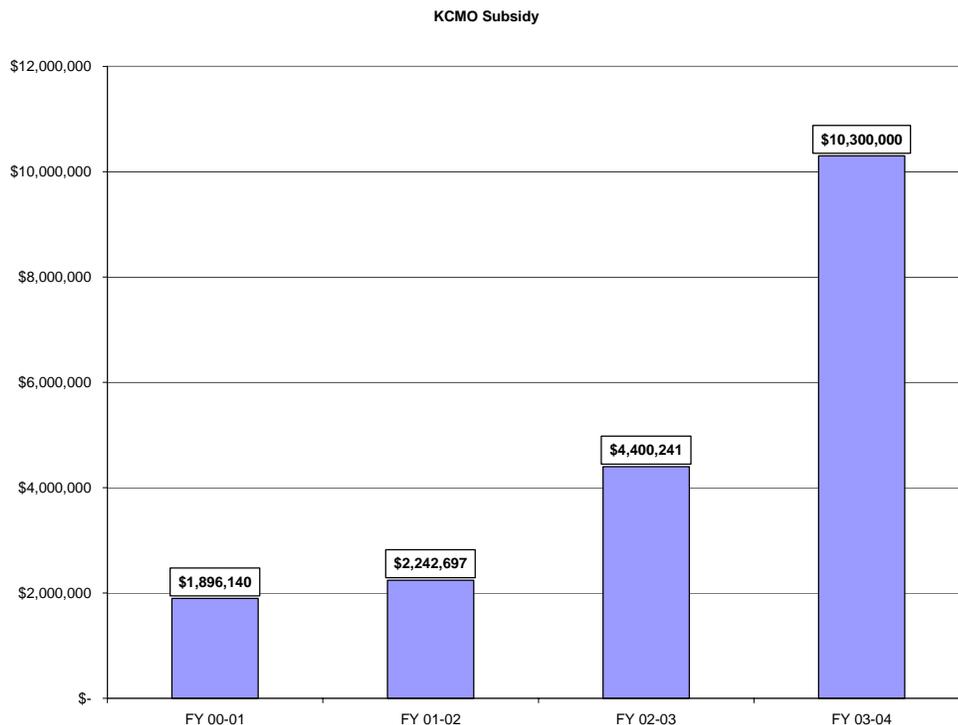
Although this may seem tedious and time consuming, it will provide concrete data regarding the productivity of the office and serve as a basis for developing productivity standards and performance goals for the staff.

V. Financial Issues Summary

This section identifies the financial factors that forced the City to provide MAST with substantially increased subsidies, particularly in FY 03-04. From earlier discussion in this report, it is clear that MAST's financial problems grew over an eight-year period. Two years ago, MAST depleted its cash reserves and depended upon borrowing money to maintain operations. When the \$2 million line of credit was exhausted in 2003, MAST was left with no recourse other than to approach the City for emergency funding to fund basic operations and meet payroll.

From FY 02-03 to FY 03-04, the City's direct funding support of MAST increased from \$4.4 million to \$10.3 million. This \$5.9 million increase precipitated the City's action to examine the viability of the MAST system and to look for alternative system designs. See Figure 17.

Figure 17. City Subsidies for MAST



Factors Impacting Subsidy Increase

A number of recent events precipitated MAST's financial crisis. Given that MAST continued to allow increases in expenditures at a rate greater and 9% annually for the past 11 years, exhausted its cash reserves and suffered a decline in its collection rate; the organization could not respond to an additional series of negative financial events. We have identified five areas which caused the more than \$5.9 million shortfall. These are:

- ◆ Decrease in Medicare reimbursement
- ◆ Increase in deployment of unit-hours
- ◆ Transition costs incurred upon takeover from Contractor
- ◆ Increased insurance costs
- ◆ Executing a new collective bargaining agreement with increases in wage costs

We will outline and quantify the financial impact of each of these factors. The negative impact of these components totals more than the difference in the increase in subsidy. MAST somewhat compensated for the shortfall by exhausting its line of credit, eliminating some overhead costs in the transition from the Contractor, delaying payment of payables, and using capital funds to pay for operations.

Decrease in Medicare reimbursement

As described in Section IV, the phase-in of the Medicare Fee Schedule has caused a reduction in Medicare revenue. This can account for up to **\$1.2 million** dollars of the new funding required to maintain operations.

Increase in unit hour deployment

In Section III—Deployment Analysis Summary we outlined how MAST increased response time performance requirements and added additional unit-hours to achieve these more difficult standards. The 10-month estimate of the additional costs incurred for these additional unit hours is **\$1 million**.

Takeover transition costs

When MAST took over operations from its contractor, it incurred one-time transition costs of nearly **\$1 million**.⁵

Increased insurance costs

Two factors caused the MAST system to incur significant insurance increases. First, MAST was identified as a higher risk in that it was a new provider without a claims history. Secondly, MAST was shopping for insurance during the time that insurance companies were dramatically raising rates due to the nation's economy and in response to the September 11, 2001 terrorism issues. It is estimated that the system increased its insurance costs by an additional **\$1 million**. It cannot be determined how much of the increase was due to MAST being an inexperienced new provider and how much was due to market changes.

Labor increases

Prior to the unsuccessful procurement conducted by MAST to select a new Contractor, EPI executed a new collective bargaining agreement which included first year wage increases averaging 21%. After MAST's takeover of the operations, its administration signed the same agreement instead of reopening negotiations as a new employer. This increased the system's annual labor costs by **\$3.1 million**.

Cumulative impact of financial factors

The cumulative total of additional expenses and reduced revenue in FY 02-03 was \$7.3 million. See Table 2. The increase in subsidy was \$5.9 million. The \$1.4 million difference was addressed as indicated earlier by reduction of some overhead expenses, tapping the line of credit, and using capital funds for operations.

⁵ City Auditor's Follow-Up Audit MAST Financial Viability report identified the one expense as \$955,374.

Table 2. Cumulative Effect of Financial Events

Factor	Amount
Medicare Decrease	\$1.2 million
Increased Unit Hours	\$1 million
Takeover Expenses	\$1 million
Insurance Increases	\$1 million
Labor Increases	\$3.1 million
TOTAL	\$7.3 Million

Mitigation of Financial Issues

A number of actions have been identified in this report that could reverse or mitigate some of the negative financial trends and events. This section will summarize options that can be implemented to address the negative financial performance of the system. Many of the items identified may and will be implemented in the various system design options. Others are specific to the MAST system and may be initiated during transition to reduce the City's funding requirements.

It must be noted that many of the mitigating actions will not be able to be implemented immediately or their effects will occur over a period of time. Others may have an immediate positive financial effect upon implementation.

Revert to previous response time performance requirements and reduce unit hours

The actual number of unit hours deployed by MAST is a difficult number to specify. It is clear from the deployment analysis that 3,350 unit hours per week are adequate to achieve the response time performance levels with the new standards. However, significant savings can be achieved by reducing the unit hours. If performance requirements were modified and MAST was to revert back to the pre-takeover level of 79 shifts, \$1 million can be saved annually.

Additional modifications in deployment and staff scheduling described in the Deployment Analysis can achieve savings of approximately \$300,000 annually.

Reduce fleet size

MAST's fleet is the largest of all of the public utility models. After the agreement with Wyandotte County/Kansas City, Kansas expires; MAST will be able to reduce the fleet size by 14 ambulances. Another six to seven ambulance could also be reduced from the fleet size. The savings for these 6-7 vehicles would approach \$225,000 annually.

Improve billing and collections

Acquiring a new patient accounting system and implementing new policies, procedures, training, and other improvements could increase the overall collection rate by 2 to 4%. This would add additional revenue of \$800,000 to \$1.6 million to the system.

Renegotiate labor agreement

The recently signed labor agreement has significant first year wage increases and additional 4% increases for each of the next two years. There are also a number of work rules and requirements that have a financial impact.

We were told a number of times that the MAST employees were significantly underpaid and had been for a number of years. This was the justification for the large increases represented in the collective bargaining agreement. Labor representatives provided us with a wage comparison to support the increases. The wage comparison contrasted the pay for thirteen regional entities. Of these, 11 are fire or other public safety departments. While emergency medical services play a vital public safety function, wages cannot be solely compared with the fire and other public entities.

The October 2003, *Journal of Emergency Medical Services* published its annual salary survey. Respondents included hospital-based EMS agencies, fire departments, private ambulance services, and other provider types. The following Table 3 reveals the starting and high average wages from this article. The South Central Region includes Missouri. The results were also cross tabulated with the size of the service. MAST falls into the category with other services that transport more than 50,000 patients annually. The MAST wages included in the chart reflect the base salaries without any scheduled overtime and represent the different annual amounts based on the 42 or 56-hour work schedule.

Table 3. Wage Comparisons

	Position	Starting Wages	Average Wages	High Wages
PARAMEDICS	MAST	\$33,812- \$37,810	\$40,432- \$43,671	\$49,551- \$50,691
	South Central US	\$29,491		\$37,425
	> 50,000 transports	\$32,585		\$49,782
EMTS	MAST	\$29,394- \$30,101	\$34,606- \$34,631	\$43,072- \$44,084
	South Central US	\$26,025		\$33,252
	> 50,000 transports	\$24,921		\$39,517

The average of starting and high annual wages for MAST paramedics and EMTs are significantly higher than those of similar services in the South Central U.S. The MAST paramedic wages are slightly higher or equivalent to similar services transporting more than 50,000 patients. MAST EMT wages are substantially higher than similar high volume services.

There are a number of work rules in the collective bargaining agreement that increase costs and limit flexibility. Even if the economic factors or wage scales were to be left intact, discussions should take place with labor to address some of the work rule issues. Many of these work rules are not standard practice for the EMS profession. These include:

- ◆ *Meal breaks:* Better scheduling and collaboration with the labor group could reduce some of the constraints associated with meal breaks. Currently, field crews can take their break anywhere in the City. After the break, they may not be in position to provide optimal coverage and ambulance crews may be grouped in low volume areas. It may take 20-30 minutes to move a crew back into a good coverage position. Cumulatively, this can create a significant number of non-productive hours each day within the system. Compensation for missed meal breaks has also been a problem, with some payrolls accumulating \$40,000 in missed meal break compensation.
- ◆ *Temporary filling of shifts:* If volunteers are recruited to fill an open shift, such as when someone calls in sick, then that person is paid time and one-half. If a

shift is opened because of a call-off and management has to hold over an employee from the previous shift, that person is paid double-time for the shift and the two hours prior to the end of his or her original shift.

- ◆ *Premium pay for unfilled shifts:* If employees work during a period that a percentage of shifts remain unfilled (e.g. 15% of shifts for field personnel), all employees working during that period are paid an extra bonus of one-half time.
- ◆ *Shift restrictions:* Other rules impact system flexibility such as 50% of all shifts have to be 12-hours in duration. At least 75% of the shifts have to have 3 consecutive days off. No more than 10% of the shifts can have split days off. These are some of the examples of constraining shift patterns.
- ◆ *FTE positions:* The FTE positions are filled by a limited number of employees. These employees are not assigned a regular shift. They remain “on call” for 56 hours per week. They can be called to work a shift during these on call windows. If they do not work shifts, they are still paid as if they worked a full 42 hour week.
- ◆ *Absence/Tardy policies:* The absence and tardy policies are lax. For example, an employee can be one hour late for work 13 times within twelve months and receive no disciplinary actions.

Revisiting some of the work rules will allow the system to be more flexible and provide a better financial result. Flexibility and a more collaborative approach between management and labor could improve the service’s financial and operational performance without placing undue hardship on the employees.

Increase rates

The rates charged to patients and their insurers should closely reflect the cost of providing the service. Many systems operate entirely on fee-for-service billings. These often have significantly higher charges than does MAST. For every \$100 increase in the average ambulance bill, MAST can expect to collect \$960,000 more annually. A \$200 average increase would net approximately \$1.8 million. It would not be unreasonable compared with other areas of the country to increase MAST’s average rates within a range of \$100 to \$200.

Support from other jurisdictions

MAST should work with other jurisdictions that it serves to increase their support of the system. These jurisdictions depend upon MAST for primary emergency response to medical calls. This provision of coverage for emergency response is the most expensive component of EMS—ambulances must be ready and available to respond regardless of the number of requests for service.

The most equitable way to share costs with other jurisdictions is through a per capita subsidy. If a jurisdiction receives the same level of performance (e.g. response times) then that jurisdiction should support MAST at the same per capita rate as provided by Kansas City taxpayers. If the jurisdiction receives emergency coverage from MAST but does not experience the same level of service (e.g. slower response times), then that jurisdiction should pay a lesser per capita rate. The number of transports and reimbursement for those transports do not reflect the *emergency coverage requirements and costs*.

VI. System Design Option Summary

In the following sections four system design options are described. This section defines some of the assumptions and common characteristics of these options. All of the options are viable and could provide adequate service to the citizens and visitors of Kansas City. Each option has its advantages and disadvantages as well as varying cost and subsidy requirements.

In this section we describe the common characteristics and base line assumptions for each of the options.

Clinical Performance Requirements Retained

Clinical and response time performance of the current MAST system is excellent. Therefore, all options are based on the same operational and clinical performance requirements. These include the current response time performance levels of 8:59, 90% of the time citywide for life-threatening emergencies.

Other components of the current system have performed well and should be retained regardless of the system design model. These include:

- ◆ Oversight provided by the Health Department
- ◆ An independent EMS Medical Director
- ◆ The Emergency Physicians Advisory Board (EPAB) and its role in developing and approving clinical protocols and defining the system's standard of care
- ◆ Local licensure through the Health Department of EMTs, paramedics, system status controllers, and first responders

The provision of all ALS ambulances for medical transport is present in all options except potentially the Fire-Based option which calls for outsourcing non-emergency and interfacility medical transports to a private provider. This is based on being able to contract with a private provider with no subsidy to support its operation. The procurement process for selecting such a provider will determine whether or not all ALS ambulances for non-emergency and interfacility transports can be retained.

All existing requirements for paramedics and EMTs such as licensure and continuing education are also kept intact.

Interim Financial Oversight

During the transition period and because of the recent financial difficulties of MAST, it is recommended that a special financial oversight committee be appointed. This committee should address and facilitate issues such as billing and collection processes, acquiring purchasing and services contracts, transfer of capital assets, merging financial systems, employee/human resource and legal issues. This committee should continue its role throughout the transition and implementation of the ultimate EMS system design.

Option Transition and Implementation Timelines

Each of the options presented have a different time line associated with the system's transition and the full implementation of the option. Table 4 provides a comparison of these time lines. The shortest time line is associated with conversion to a City department. An aggressive transition to a City department will require from six to 12 months to fully implement.

Table 4. Option Timelines

	0 - 6 mos	7-12 mos	13-18 mos	19-24 mos	26-30 mos	31-36 mos	37-42 mos	43-48 mos
City EMS Department	Transition	Implementation Window						
Exclusive Contract	Transition		Implementation Window					
Reconstituted PUM	Transition			Implementation Window				
Fire-Based EMS Option	Transition		1st Phase Implementation	Implementation Window				

The Exclusive Contract Option is expected to take between one year and 18 months to conduct a national procurement for an ambulance service provider and to allow the provider adequate time to acquire the necessary equipment and assets to begin services.

The Restructured Public Utility Model is anticipated to take between 18 and 24 months to have a new Operations Contactor in place.

The Fire-Based EMS Option is the most complex in that it requires firefighter training of all ambulance personnel and a procurement of a private provider for non-emergency services. Therefore, full implementation of the Option is expected to take between 2 and 4 years, even though the initial Fire Department take over of EMS would occur within approximately 12 months.

The time lines and transition issues are discussed in greater detail in each option's section of this report.

MAST Dissolution Issues

If the Restructured Public Utility Model is not selected, there are a number of issues to be addressed. Many of these have to do with resolving MAST's debt. These include:

- ◆ *MAST's Line of Credit:* The line of credit is fully exhausted and is for \$2 million. This will have to be paid off regardless of the option selected.
- ◆ *Payment obligations on capital leases:* MAST spent more than \$3 million on a new communications system in 1996 and has acquired vehicle chasses, and other equipment through capital leases. At the end of FY 02-03 the remaining principal on these leases totaled \$2.5 million.
- ◆ *Obligations for the bond for land and facilities:* In 1996, bonds were issued for MAST to acquire land and renovate its headquarters facility. The outstanding principal obligation on these bonds at 30 April 2003 was \$6.2 million.
- ◆ *At FY 02-03 year end,* MAST debt associated with the capital leases, bonds, and line of credit was approximately \$10.5 million.

Some of these obligations may have to be assumed by the City as a transition cost while others may be assumed under the new design. For example, the Fire-Based option assumes the facility obligations under the same arrangements as the City has with MAST. The Exclusive Contract option does not assume that the Contractor take over responsibility for MAST headquarters.

If MAST is dissolved and the employees are employed by another entity, there will be an obligation to pay for accrued sick and paid time off. If the PUM option is selected, these obligations can be transferred to the contractor. For other options, the pay out is estimated to be approximately \$300,000.

Transition Costs

Some transition costs are dependent on the system design selected while others will be incurred regardless of the design. We have outlined some of the transition costs in the following Table 5. Some of the transition costs for options other than the Restructured Public Utility Model could be partially offset by the collection of MAST's accounts receivable. The net accounts receivable at the end of FY 02-03 was \$4.56 million. A portion of that is collectible and the City may net approximately \$3.5 million in additional collections over a 12 to 18 month period. The City would have to retain the capability to process these accounts or outsource the collections of the old accounts.

Table 5. Transition Costs

	Exclusive Contract	City EMS	Restructured PUM	Fire-Based
Operating Cash	0	3,797,260	0	2,810,959
Pay Out Line of Credit	2,000,000	2,000,000	2,000,000	2,000,000
Procurement Costs	150,000	0	200,000	inc in budget
Capital lease payout	2,500,000	inc in budget	inc in budget	2,500,000
Employee PTO payout	300,000	300,000	0	300,000
Transition assistance	0	150,000	250,000	0
Building bond obligations	6,500,000	0	0	0
TOTAL TRANSTION	11,450,000	6,247,260	2,450,000	7,610,959

Comparison of Budgets

A first year budget was developed for each of the options. The proposed MAST FY 04-05 budget was used for comparison. The revenue was estimated based on MAST's projections accounting for a decrease in Medicare reimbursement and historical performance. The MAST budget formed the baseline for all of the options. For example MAST vehicle maintenance expenses were used in all of the budgets. The Fire and City EMS budget were fully developed, identifying all categories of

expenses. The budget for the Exclusive Contract was prepared by using the MAST budget as the base and identifying areas of reduced costs inherent in the system design. The Restructured Public Utility Model also used the MAST base budget but assumed some savings would occur due to conducting a competitive procurement for a new operator. The savings and rate increase opportunities identified as potentially beneficial to the EMS system were not considered in this option comparison.

Table 6 compares the various EMS system design options including revenue projections, expenses, and subsidy requirements.

Table 6. Option Comparison of Annual Costs

	MAST 04-05	Exclusive Contract	City EMS	Restructured PUM	Fire-Based
Patient Revenue	15,559,455	15,559,455	15,559,455	15,559,455	11,400,000
Other Revenue	1,095,564	877,564	390,000	1,095,564	
TOTAL	16,655,019	16,437,019	15,949,455	16,655,019	11,400,000
Total Expenses	27,032,703	23,000,000	27,900,000	25,000,000	23,200,000
Subsidy Required	10,377,684	6,562,981	11,950,545	8,344,981	11,800,000

Evaluation of Options

It is important that the EMS system design options be evaluated on a level playing field. Each of the options can work within the Kansas City system. Each has its strengths and weaknesses. The challenge is to evaluate the options while fully understanding the important operational and performance characteristics that make a high performance EMS system. Our proposal for evaluation of the option is described below.

Option appraisal process

As soon as practical after the release of our Report, we recommend that the process used to evaluate the options include the full City Council with ample opportunity for public input. The process would be segmented to allow the Council members to gain a full understanding of the complexity of the issues. This would also provide the public and media the opportunity to digest the issues involved. Council participation would include two Business Sessions and covering the following topics.

Full Council Business Session #1

- ◆ Overview of EMS Systems, their components, and external issues impacting the delivery of emergency medical services and funding sources
- ◆ Description of the reasons why MAST became financially unviable
- ◆ Comprehensive presentation of the criteria that are important in evaluating and comparing EMS System Design Options

Full Council Business Session #2

- ◆ Presentation of each system design option by consultant staff
- ◆ Presentation of cost comparisons
- ◆ Delineation of transition issues including costs and risks

A formal presentation would be delivered in each of the Business Sessions with appropriate handouts including a benchmarking matrix for the Council Members to follow while evaluating the system design options.

Following the second Business Session we recommend that a formal process be used for public input similar to that used during the City budget process. A “Town Hall” meeting or similar opportunity should be scheduled to ensure ample opportunity for public and stakeholder comment.

After the Business Sessions and the Public Comment venue, the Budget and Audit Committee should recommend an EMS system design option to the full council. Alternatively, the full Council would need to select the option to be implemented.

VII. Exclusive Contract Option

Description of Option

The city of Kansas City, Missouri has the authority to provide or ensure the provision of EMS and ambulance service within the municipality. To implement this option, the City would contract with a single ambulance service provider for *all* emergency and non-emergency ambulance transportation within the jurisdiction. This option would effectively dissolve the public utility model and the ambulance service provider would contract directly with the City. It would require 12-18 months to construct an industry specific competitive procurement for ambulance services and implement this model.

Legal Structure

In the Exclusive Contract Option, the City would be required to enact ordinances to allow an ambulance service provider. The system's specifications would be clearly defined in the ordinance and in the request for proposal and an evaluation process would select the best offer. The City would negotiate and execute a contract for a term of not less than five years.

The winning proposer would be responsible for acquiring the assets to operate all components of the EMS system including dispatch, vehicles, medical equipment, billing and collections, etc.

In this system structure the rates would be regulated and determined through the competitive procurement and the subsidy levels would be defined for the term of the agreement.

It is likely that the winning entity would acquire much most of MAST's current assets in order to initiate services within a timely fashion. The winning bidder would also be required to negotiate in good faith with the current workforce because the existing personnel and experience will be necessary for the successful initiation of service from any contractor.

The types of organizations that could submit proposals for the Exclusive Contract Option include private companies, not for profit entities, hospital systems, or other jurisdictions.

The existing clinical and operational performance requirements would be retained as well as oversight provisions. All emergency and non-emergency patient transports would be provided by the single contractor.

Operational description

The contractor would be required to provide all the necessary infrastructure, vehicles, personnel, and working capital to deliver all emergency and non-emergency ambulance services within the City.

Many of the operational techniques, procedures, and activities would be similar to those provided by the combined MAST and contractor operation. These would include flexible deployment, quality improvement activities, appropriate billing and collection processes, public relations and education, and integration with the system's first responders.

Accountability

The City's accountability would be that of a contract manager.

Financial oversight

The City's financial oversight would be limited to developing the financial provisions in the request for proposal and monitoring the contractor for compliance with approved rates and appropriate billing and collection activities. The City's agreement with the contractor would specify the rates and subsidy levels to be provided by the City during the term of the contract. There would likely be provisions for reopening the financial components in the event of significant increases in expenses or drops in revenue beyond the contractors' control. Otherwise, the contractor would be required to live with its proposed rates and subsidy requirements.

During the transition to an exclusive rights contractor it is recommended that a special financial oversight committee be appointed. This committee would address the issues of transition of capital assets to the contractor and or disposal of existing MAST, facilities, vehicles, and equipment.

Clinical oversight

The Health Department and the Emergency Positions Advisory Board (EPAB) and the EMS medical director would continue to provide clinical oversight and mandate contractor clinical activities. This oversight would be for all emergency and non-emergency ambulance transportation conducted by the provider. The licensure of EMT's, Paramedics, and System Status Controllers (SSC) would continue to be a City function and under the purview of the medical director.

Contract management

In order to provide the appropriate level of monitoring of contractor performance on a clinical, operational, and financial basis it will be necessary for the city to add staff in the form of a contract manager and a number of analysts with specific roles. An Operations Analyst would be responsible for ensuring that the contractor complied with response time, vehicle, equipment, and other operational performance standards. Two Clinical Analysts would be responsible for monitoring the clinical activities and clinical improvement processes and also function as support to the Emergency Physician's Advisory Board. A financial analyst should be responsible for monitoring the contractors billing and collection procedures and policies as well as ensuring compliance with the approved rates.

One additional position should be included in the health department, which would be the EMS system liaison. This individual would interface with the contractor, first responders, health department and various other stakeholder groups to ensure collaboration in the delivery of the Kansas City EMS system services.

Additional City costs required to oversee an exclusive operator are estimated to be \$300,000 annually.

Advantages

The advantage of the Exclusive Rights Option is largely found in the area of financial performance. A second group of advantages revolve around the arm's length relationship between the contractor and the city. This will reduce the City's day-to-day involvement in EMS systems functions.

Financial advantages

- ◆ Reduced cost to City: contracting out for the provision of emergency medical and ambulance services will reduce funding required from the City to support the system. We estimate that the City subsidy requirements would decline by more than \$4 million annually with the implementation of the Exclusive Contract Option. There are a number of reasons for this reduction. A large multi-site ambulance organization would incur marginal cost increases for some of the operational and overhead expenses. For example, adding additional transports to the in existing billing and collection system can be done more economically than operating a single site center. Also large organizations have more buying power and are able to acquire vehicles and equipment at a lower cost. Other functions such as human relations, finance, administration, and to a lesser degree some of the operational components already exist and incorporating the Kansas City services would incur marginal costs rather than a stand-alone fully allocated system.
- ◆ Other advantages of large multi-site ambulance providers include savings achieved through insurance negotiations. An organization with a track record and specific safety programs that have been implemented and proven effective can achieve significant savings on insurance premiums, workers comp, vehicle liability, and malpractice.
- ◆ Specific labor savings may also be achieved with the Exclusive Contract Option. If a new organization were to assume the responsibilities for providing emergency and non-emergency ambulance service in Kansas City, the new organization would be required to bargain in good faith with the current work force. While the results of this negotiation cannot be quantified, it is likely that a new agreement could result in lower labor costs to the system.
- ◆ An experienced ambulance organization would likely be able to improve revenue recovery. Experience throughout the country with various payers provides an advantage to experienced ambulance providers and the ability to achieve optimal revenue recovery.
- ◆ The Table 7 provides estimates of potential areas of savings to achieve the \$4 million savings annually in the EMS system.

Table 7. Exclusive Contract Option Savings

Increased collections/reduced billing costs	\$1.8 million
Insurance cost reductions	\$1 million
Overhead reduction	\$250,000
Purchasing savings	\$250,000
Labor & costs savings	\$1 million
TOTAL SAVINGS	\$4,300,000
City costs	(\$300,000)
Exclusive Contract Net Savings	\$4,000,000

Reduced city involvement

Awarding the emergency and non-emergency ambulance services to a single organization on a contractual basis would reduce the level of city involvement on a day-to-day basis.

The City would not be responsible for acquiring capital equipment, billing and collections, or day-to-day financial management of the system. These functions would be assumed by the contractor. The contractor would be responsible for acquiring vehicles, equipment, and facilities. The contractor would also be responsible for maintaining the infrastructure of the system.

Predetermined funding requirements from city

With a multi-year agreement, it is possible for the City to fix its funding support levels for the EMS system. The contractor would be required to provide the specified performance levels for a predetermined and agreed upon price. This price would be defined for the contract term and any short falls would be the financial responsibility of the contractor.

Disadvantages

There are a number of disadvantages to the Exclusive Contract Option. Many of these are primarily related to the loss of control and the limitation of input into the EMS system.

- ◆ The city no longer owns infrastructure: In the Exclusive Contract Option, the contractor would be required to acquire all assets needed to provide emergency and non-emergency ambulance services in the community. One of the current protective mechanisms for the City in the event of contractor failure is that the City owns the essential infrastructure for operating EMS. These City-owned assets include the communications system, the computer aided dispatch system, the vehicles, major medical equipment, and the facilities. If the system were ultimately to fail under an Exclusive Contract Option, the City would be put into the position of having to reacquire the assets or ultimately incur the cost of a new contractor acquiring these assets through subsidy requirements or fees.
- ◆ Extensive reliance on bid process: The Exclusive Contract Option extensively relies on the competitive procurement process to define system performance standards and to ensure the selection of a competent and capable provider. If this process is flawed or does not produce the desired results, the EMS system structure and stability can be impaired.
- ◆ The failure of contractor could have serious adverse consequences: The 12 to 18-month cycle time to competitively procure ambulance services makes it very challenging in the event of an acute failure of the ambulance contractor. The City would be required to assume responsibility for provision of services in the short term without the requisite expertise and resources to effect the take over of the services.
- ◆ Significant labor issues: An exclusive contractor is the least favored option of the existing workforce. Labor has serious concerns of their ability to retain appropriate compensation and a positive working environment. The contractor would face significant challenges in assimilating the workforce in a positive process.

Risk Evaluation

Implementation risk

The implementation risk of the Exclusive Contract Option is predominately related to personnel issues. The risks are outlined below:

- ◆ Uncertainty of morale: Employees uncertain about their future and with negative perceptions of a potential employer will not be focused on the job at hand. Performance during transition could suffer significantly.
- ◆ Loss of key management personnel: Management and middle management will have similar concerns their future employment may not be secure and this may

encourage many to seek immediate employment elsewhere. This loss may translate into difficulties with day-to-day operations during the transition.

- ◆ Labor agreement issues: If the contractor is unable to reach an agreement through negotiations with the existing labor group the willingness of the existing workforce to accept and support a smooth transition is doubtful.

Long-Term Risks

Many of the long-term risks are associated with loss of direct control of the EMS system and the dependencies upon a sole contractor whose financial stability is influenced by operations other than the Kansas City system.

- ◆ *Loss of direct control:* The City would have less direct influence on the operation of the EMS system than it does today. The City's primary control mechanism would depend on contract administration and a periodic competitive procurement.
- ◆ *Fewer safeguards in the event of contractor failure:* If a contractor were to fail there would be fewer safeguards to the community for the protection of its citizens. Although some safeguards could be included in the procurement and the resulting agreement such as performance bonds, escrow funds, three way leases, and take over provisions; it will be difficult for the City to take over the system in the event that a contractor should fail.

Implementation

Constraints/issues to be addressed

The first process to be undertaken for a transition to the Exclusive Contract Option would be the development of a comprehensive request for proposal and the conduction of a competitive procurement. The time frame for this would be 12-18 months. It is likely to cost approximately \$150,000 to effectively and comprehensively design and define this process.

Managing the existing organization during the transition may be extremely challenging. The instability of the workforce with such a dramatic system change could challenge the efforts of the organization's leadership to maintain adequate performance during the transition period. Once the contractor has been selected its efforts with the workforce will determine how successful the transition to the Exclusive Contract Option will be.

Costs

Transitions/one time cost

There are a number of one-time costs that accrue to all or several of the options, such as satisfying the MAST debt obligations. These more generic option costs are outlined in Section VI. Specific transition items that accrue to the Exclusive Contract Option are largely based on the development of comprehensive request for proposals and the conduction of competitive procurement. These costs are estimated to be approximately \$200,000.

Recurring costs

The costs to operate the Exclusive Contract EMS Option will ultimately be determined through the competitive procurement and the balance between the rates charged for ambulance service and the subsidy requirements from the City. It is estimated that the City subsidy requirements would be less than \$6.6 million annually.

VIII. City EMS Department Option

Description of Option

The option of creating a Kansas City EMS Department will maintain the standards and high performance levels of the former MAST service. Ambulances will be staffed with an EMT-Basic and an EMT-Paramedic. The system functions using flexible deployment that will closely match system demand and ambulance unit hours. From an operational standpoint, the City EMS Department Option will function very much like the former MAST operations. The primary difference is found in governance, oversight and administrative functions.

Legal structure

The City EMS Department Option will be a chartered department of Kansas City. All assets are owned by the City and the organization functions as a component of City government just as do other City departments. The mission of the City EMS Department Option is to deliver high performance, emergency and non-emergency medical response, care and transport of patients.

Operational description

The City EMS Department Option will deploy ambulances in a flexible deployment model using primarily 42-hour workweeks (12 hour shifts) for field personnel. Ambulances can post in designated areas but will move to the next predicted call based on historical call patterns. During the afternoon traffic rush for example, ambulances post at intersections where accidents historically occur. The result is that response times are shorter. Patients who have the greatest need for quick response such as trauma and cardiac patients, receive the fastest response possible.

The Fire Department would continue to respond with suppression units and personnel trained to the level of EMT-Basic to 30,000 of the 57,000 annual emergency calls. Current protocols determine that Fire units and ambulances are both dispatched to the most critical of EMS calls. Experience shows that MAST ambulances arrive first on scene before Fire units on more than half of the emergency calls for service. This

most likely occurs because of the difference between flexible deployment (MAST) versus station-based geographic or fixed deployment (Fire Department).

In the City EMS Department Option, non-emergency transport requests from hospitals, nursing homes, and other sources will be answered exclusively by the City EMS Department. Non-emergent calls for service are somewhat predictable. While they require dedicated ambulance unit hours and have relatively long time on task averages, they are a stable source of revenue for the system. The City EMS Department will not offer van or coach service as does MAST. Private sector entities currently offer this service. The membership program that is currently offered by MAST will also be discontinued.

The primary work schedule for ambulance personnel in the City EMS Department Option is a 12-hour a week schedule which results in a 42-hour workweek. Flexible deployment allows the system to eliminate ambulances when the demand is not present and increase the number of ambulances to meet the highest demand and call levels. At the lowest call demand, the City EMS Department would likely staff 16 ambulances and at the highest call demand period, 36 ambulances would be staffed. An average of 4,368 unit hours is deployed per week. The City EMS Department Option deployment results in a .251 unit hour utilization.

Staffing ambulances in the City EMS Department requires 130 EMT-Paramedic and 130 EMT-Basic certified employees. Additional positions are added for management, field supervision, training, quality assurance and public education. Ambulance operations positions are summarized bellow.

Table 8: Ambulance/Field Positions for City EMS Department Option

Position Title	Shift	No. Persons
EMT-Basic	Primarily 12 hour shifts	130
EMT-Paramedic	Primarily 12 hour shifts	130
Medical Affairs Officers or Field Supervisors	2 officers, 24 hours a day/7 days a week	10
Chief Operations Officer	40 hours a week	1
EMS Training Officer	40 hours a week	3
EMS Quality Assurance	40 hours a week	3
Public Education Officer	40 hours a week	1

The City EMS Department Option budget includes 50 hours of annual continuing education training for EMT-Paramedic and EMT-Basic employees. It also includes

additional positions to account for 12 percent attrition of the field workforce, which is two percent less than the current MAST attrition for EMT-Paramedics.

Employees

All former MAST employees will be encouraged to apply for City positions in the City EMS Department Option. Typical merit system processing will occur and would likely include written testing, medical physicals, and background reviews. However, because the City EMS Department Option will not require employees to train to the level of firefighter, there would be several key differences for applicants:

The medical physical for ambulance employees is not likely to be as stringent as the National Fire Protection Agency (NFPA) 1582 physical for firefighters. It is likely to eliminate fewer applicants from the employment process.

Applicants for ambulance positions will not be required to pass the firefighter candidate physical ability test (CPAT) or become certified firefighters as a condition of employment. The CPAT is a strenuous physical challenge and typically eliminates large numbers (up to 50 percent) of females and some males from the hiring process.

The age barriers for hiring firefighters will not impact the City EMS Department Option. This is a key attribute of the City EMS Department Option as there are no age constraints to overcome. Experienced MAST employees can more readily be brought into the City Department.

The City EMS Option budget is constructed to maintain the base salary of MAST employees.

Organizational components

City management will have the opportunity to closely review the organizational structure of the City EMS Department. As a City department, the Department's goals, objectives, strategies and budget processes can be closely aligned with those of the City.

Certain organizational components such as Finance and Budgeting, Purchasing, Facilities Management and possibly Fleet Management should be analyzed to look for economies of scale, purchasing opportunities, and other benefits of merging all or part of the functions.

Certain functions of the current MAST organization will be merged into the current City structure and would represent a small incremental increase in workload for City organizations. Functions that are most likely to be assumed by the City are as follows:

- ◆ Labor/management negotiations
- ◆ Advertising, recruiting and hiring functions
- ◆ Financial services to include accounting and auditing services
- ◆ Banking and payroll services
- ◆ Legal services
- ◆ Centralized purchasing services
- ◆ Information technology services
- ◆ Risk management
- ◆ Retirement plan administration

Like other general fund departments of the City, the City EMS Department will not be charged directly for the above administrative functions. The two City options, Fire-based EMS and City EMS Department, are similar in this respect.

As a governmental entity, the City EMS Department could participate in a number of city programs that may result in direct savings to the organization. Examples of those programs are below:

- ◆ Participate in the City's self-insurance plan
- ◆ Utilize the City's pooled cash for cash flow purposes and eliminate the need for expensive credit lines
- ◆ Participate in the City's health insurance plans
- ◆ Participate in the City's retirement plan
- ◆ Participate in the City's public financing opportunities

There have been no specific reductions in the City EMS Department Option to account for the above items. They are, however, an attribute of this option and represent potential cost savings.

The insurance needs of the City EMS Department must be reviewed and evaluated by the City's Risk Management professionals. The City will likely employ a

combination of insurance and self-funding of the risk, which allows the City to avoid expending funds to purchase insurance. The City EMS Department Option and the Fire-based Option both includes \$1.438 million for insurance. This approximates half the current cost of insurance incurred by MAST.

There are other organizational components and functions that are specifically needed to support the City EMS Department such as fleet maintenance, the Communications Center, Patient Records and Transport Billing. These functions are discussed below.

Fleet maintenance

Fleet Maintenance of the EMS vehicles is budgeted at the same cost as MAST vehicle maintenance or \$2.877 million. There may be certain economies that can be gained through centralized or group purchasing with the City's Fleet Maintenance function. However, the budget provides the funding to continue with the same positions and funding level as the current MAST operations or outsource some or all of the vehicle maintenance.

Communications center

The City EMS Department Option would continue to use the current Communications Center. Flexible deployment requires constant review of call patterns and adjustment of ambulance locations. Current MAST software and the Computer Aided Dispatch system have the features needed to review and analyze call data.

The City EMS Department Option retains the Paramedic Dispatcher positions as well as the Communications Center management and technical staff. Dispatch positions and other support positions for the Communications Center are budgeted as follows:

Table 9: City EMS Department Communications Centers Staffing

Position Title	Shift	No. Persons Hired
Paramedic Dispatcher	5 dispatchers on 12 hour shifts, 7 days a week	17.5
Lead Paramedic Dispatcher	1 position, 24 hours a day, 7 days a week	5.0
Deployment/Utilization Officer	40 hour week	1.0
Communications Manager	40 hour week	1.0
Dispatch Quality Assurance Officer	40 hour week	1.0
Dispatch quality Assurance Clerk	40 hour week	2.0
Data/Information Manager	40 hour week	1.0
Data/Information Analysis	40 hour week	1.0
TOTAL		29.5

The current Kansas City EMS system calls for the System Status Managers (dispatchers) to hold EMT-Paramedic licenses and to maintain medical priority dispatch certification. The City EMS Department Option will provide the same level of service and maintain those certification levels. The City is committed to obtaining a Center of Excellence Designation for the Communications Center.

Patient records/transport billing and collection

The City EMS Department will respond to 78,700 emergency and non-emergency calls for service and will transport 57,100 patients (based on the prior calendar year history). The Department is charged with maintaining a record of all calls and transports and making these reports available to the public upon request. The billing process is closely tied to the patient record reports.

Billing for medical transports requires specialized skills and strict adherence to Medicare and Medicaid regulations. It is a complex process and not typical of municipal utility billing and collection processes. The City may choose to hire the former MAST employees and utilize the existing software for data input and billing processes. However, the City can also choose to outsource the process. Should the City choose to outsource billing and collection, the City should provide strong and active oversight of the contractor and the entire billing and collection process. The

City should provide a dedicated responsible City liaison who maintains a thorough working knowledge of the issues and requirements of ambulance billing.

Given the complexity of Medicare rules and regulations, it is recommended that both a City EMS Department employee and a Finance Department employee participate in on-going training and national association meetings designed to address the financial issues associated with patient transports.

The City EMS Department Option includes funding that represents nine percent of collections for emergency and non-emergency transports. Total transport collections are estimated at \$15.379 million; nine percent of collections provide \$1.384 million for hiring and/or outsourcing the function.

Administrative and management functions

The City is a large governmental organization and as such has a number of administrative functions in place that can support the City EMS Department. The City does not allocate overhead costs for its administrative services to general fund departments such as the Fire Department. Therefore, the City EMS Department Option should not incur overhead charges for these services. Should the City decide to charge the City EMS Department for these functions, then the same charge should be applied to the Fire-based EMS Option to equalize the option comparisons. The City will assume the same incremental workload under the Fire-based EMS Option, as it will with the City EMS Option.

Direct services to City Departments are charged to those departments and are included in the City EMS Department Option budget. Fleet maintenance, vehicle fuel, maintenance and insurance, worker' compensation insurance, building utilities and maintenance and certain computer and information technology items are examples of the direct services provided and charged directly to City departments.

There are certain other functions, overall management and support that require personnel. The positions are summarized and listed below; all are 40 hour a week positions:

Table 10: Management & Support Personnel for City EMS Department

Position Title	No. Personnel
Department Director/Chief Executive Officer	1
Education/Medical Quality Improvement Manager	1
Budget/Finance Officer	1
Payroll Clerks	2
Accounting Clerk	1
Human Resources Specialist	1
Scheduling Assistants	3
Field Logistics Technicians	6
Secretarial/clerical support	6
TOTAL	22

Accountability

Financial oversight

As a department of the City, the City EMS Department receives financial oversight from the Department Director/CEO appointed by the City. The Director is most closely accountable for the day-to-day operations and performance of the Department. The City Budget Director, the City Manager and ultimately the City Council are accountable to the citizens of Kansas City, Missouri. Ambulance operational expenses and revenues will be reviewed annually as part of the City's budget process. All expenses and revenues associated with the ambulance operations will be part of the City's financial system, which allows for direct financial oversight and management.

During the transition period and because of the recent financial difficulties of MAST, it is recommended that a special financial oversight committee be appointed. This committee should address and facilitate issues such as billing and collection processes, acquiring purchasing and services contracts, transfer of capital assets, merging financial systems, employee/human resource and legal issues.

Clinical oversight

The Emergency Physicians Advisory Board (EPAB) and the Emergency Medical Services Advisory Committee (EMSAC) continue to provide clinical oversight and advice to the City EMS Department. Likewise, the Director of Health would continue to provide medical direction and medical control. EMT-Paramedic licensure continues to be the purview of the medical director.

Governance

The Kansas City Council would be the governing body of the City EMS Department Option in the same manner that the Council governs other City Departments. In addition to the City Council, EMSAC and EMPAB are currently in place to address specific EMS system issues.

Advantages

- ◆ Absorb current MAST workforce: MAST currently employs over 300 full time and 90 part-time employees. The City EMS Department Option is constructed to maximize the opportunity for current MAST employees to be absorbed into the City with the least amount of disruption to their base salaries and general livelihood.
- ◆ More likely to preserve current workforce and its diversity: The age and gender diversity of current MAST workforce is more likely to be maintained in the City EMS Department Option than the Fire-based EMS Option. The Fire-based EMS Option requires that personnel become certified firefighters.
 - Currently, 70 percent of the MAST ambulance EMT-Basics and EMT-Paramedics are female and 62 percent of the ambulance workforce is over the age of 29. These employees currently work on ambulances. Under the Fire-based EMS Option many may not be eligible for employment due to the NFPA 1582 medical physicals, the Candidate Physical Ability Test (CPAT), fire training requirements and fire age restrictions.
- ◆ EMS employees will be City residents: While the City Council may provide for an extended phase-in period specifically for the MAST merger, at some point in the future, all EMS employees would be residents of the City. At this point, the City will enjoy the full economic benefit of the employee residency requirement.

- ◆ **Accountability to City Management:** Under the City EMS Department Option, Department managers are directly responsible to city management and elected officials for the identification, implementation, and achievement of ambulance service goals.
- ◆ **Fiscal stability:** The City can assert more financial control on the ambulance service by assuming direct financial management through the City EMS Department. The City would be in control of the entire EMS budget both revenues and expenses, through the annual budget process as opposed to managing only the subsidy.
- ◆ **Employee turnover and burnout should be lessened:** The planned unit hour utilization (UHU) for the City EMS Department Option is .251, which is less than MAST's current .32 UHU. The lower UHU should allow for more rest and recovery time for employees.
- ◆ **Flexible deployment results in faster response times:** Vehicles that are posted or roving in the areas of historical call volume are more likely to achieve faster response times than ambulances that respond from a stationary location.
- ◆ **Flexible deployment is readily adaptable to changes and is efficient:** A flexible deployment plan is always changing to meet demand changes due to traffic patterns, demographics, or seasonal changes. It closely matches the call demand to unit hours.
- ◆ **Significantly lower transition costs compared to Fire-based EMS Option:** The cost to train applicants as firefighters in the Fire-based EMS Option is seven times more expensive than the applicant processing required for the City EMS Department Option.

Disadvantages

The disadvantages of the City EMS Department Option are primarily related to the loss of efficiency focus and financial incentives.

- ◆ *Cost containment focus is shifted:* Cost containment in the current system model is achieved through a formal competitive bidding process for an operations contractor. This process is designed to ensure that competitive pricing serves as the foundation for system cost. This process would not be available with the City EMS Department Option. Cost containment in a City EMS Department Option will be dependent upon the City's budgetary and managerial process for expenditure control.

- ◆ *Consequences for non-performance are eliminated:* With a City EMS Department Option, it would be difficult to establish financial consequences for non-performance. Currently, there are financial penalties for missed response time performance and if the Contractor consistently fails to meet the required performance standards, it can be replaced through a competitive procurement. This primary method of ensuring performance through fiscal penalty would not be available under a City-operated system.

Risk Evaluation

Implementation risks

The implementation risks of the City EMS Department Option are predominantly employee related. The risks are outlined below:

- ◆ *Uncertainty and morale:* Employees who are uncertain about their future working conditions, their ability to earn a living, and the question of employment (or unemployment) are not focused on the job at hand. Performance during the transition could suffer.
- ◆ *Loss of key management personnel:* Concern by management and middle management personnel about their future employment may result in a loss of key management and middle management personnel. This loss may translate into some difficulty with day-to-day operations during the short term.
- ◆ *Employee issues must be negotiated:* Employee schedules, leave and sick time transfer, pension transfers, seniority status, pay, and overtime eligibility are some of the issues that must be addressed in labor negotiations for the new employees.

Long-term risks

City EMS Department will need continued political support: City EMS departments are often relegated to a position of less importance than other municipal emergency and public safety department. Continued political and managerial support will be critical to the long-term success of the organization.

- ◆ *Merger into City likely to be permanent:* Once the Council decision is made to dismantle MAST and create the City EMS Department, reversing the decision at some point in the future would be complicated.

Implementation

Constraints/issues to be addressed

The majority of issues to be addressed in the merger of the MAST system into a City EMS Department are workforce related. Given the political will, all issues can be overcome. However, if certain issues are not satisfied, they can, in and of themselves, complicate the success of a merger.

- ◆ *City residency requirement:* Sec.2-972 of the City Administrative Code requires that City employees live in the City within nine months of hire and provides for hiring preference for applicants who live in the City at the time of hiring. The City will need to seriously consider the current residency requirement and work toward a practical solution that will allow ambulance services to continue. The demographics of the current MAST workforce are very low regarding City residency.
 - Overall, some 70 percent of the ambulance and dispatch employees do not currently live within the City limits.
 - 28 percent of the MAST EMT-Paramedics currently live in within the City limits
 - 33 percent of the MAST EMT-Basics currently live within the City limits
 - 30 percent of the System Status Managers (dispatchers) live within the City limits.
- ◆ *Some employees will lose jobs:* With the creation of a City EMS Department, certain former MAST positions will not be needed.

Timelines

Pre-employment processing

The timelines described below assumes a transition period of approximately six months. During this time and before the City EMS Department assumes the ambulance service, all City hiring processes including application intake, written testing, background checks, and medical physicals are completed. The transition budget includes \$1,000 per candidate to cover the City's incurred hiring process costs for 333 potential employees.

Processing stipend

Processing (application, written testing, medical physical, finger-printing, background data collection, etc.) for former MAST employees will cost them time. Typically, in a takeover situation, a stipend is offered to offset any time expended. The City EMS Department Budget includes a stipend of approximately \$500 for EMT-Basics and EMT-Paramedics and equates to estimates of lost time cost.

Assumption of service/timeline

The transition assumes that on the date the ambulance service is transferred, the City EMS Department will operate ambulances using a flexible schedule. Labor agreements regarding issues such as employee pay, pension, age and residency issues and individual employee work schedules should be in place prior to assuming the service. The City should allow at least six months for planning and pre-employment processing.

Aggressive paramedic hiring:

There is an adequate but minimal supply of paramedics in the Kansas City area. As soon as the EMS Option decision is made, the City should survey current MAST paramedics to assess their interest in City employment. A campaign to hire paramedics may be needed to maintain sufficient personnel.

Costs

Transition/one-time costs

There are a number of one-time costs that accrue to all or several of the options such as satisfying the MAST debt obligations. Discussed in the table below are the transition costs that are specific to the City EMS Department Option.

Table 11: City EMS Department Option Transition Costs

Transition Item	Description	Cost
Pre-employment Screening	333 applicants @ \$1,000 each	\$333,228
Applicant Stipend Program	130 EMTs @ \$473.55 & 140 Medics @ \$553.07	\$138,991
TOTAL		\$472,219

Recurring costs

The cost to operate the City EMS Department Option is based on salaries of current MAST positions. The budget includes all continuing education training at an overtime rate. The budget includes 50 hours of annual training, which reflects the current MAST training requirements. Ambulances cannot be taken out of service for training or response times may not be met. Therefore, training will be conducted off-duty.

A comprehensive budget was developed for the City EMS Department Option. Personnel costs represent all of the positions described previously. Billing and collection services are budgeted at \$1.384 million or nine percent of estimated emergency and non-emergency transport fees collected. This allows adequate funding to either hire MAST personnel or outsource contract services. Fleet maintenance costs are budgeted at the same budget level as MAST fleet services. The option is available to the City EMS Department to utilize City services, contract for services, hire employees or some combination thereof.

Insurance costs are reduced significantly to reflect the City's self-insurance capability. A close analysis of budgeted insurance is needed to determine whether other reductions are warranted and to determine the required insurance reserves. The budget includes \$1.438 million for insurance, which represents approximately one-half of the current MAST insurance budget.

Below is the summary of expenses for the City EMS Department Option.

Table 12: Summary Cost Estimates for City EMS Department Option

Description	Budget
Ambulance, Field Support & Administrative Personnel	20,240,178
Billing & Collection Services	1,384,170
Vehicle Maintenance, Equipment & Supply Commodities & Contractual	2,877,814
Non-Personnel	
Operations	233,310
Communications	621,198
Training	68,800
Administration	2,177,738
Administrative Support	266,599
TOTAL	\$27,869,807

The summary revenue and expense budget for the City EMS Department Option is summarized in the table below.

Table 13: Summary Cost Estimates for City EMS Department Option

Description	Budget
Personnel	20,240,178
Non-Personnel	7,619,629
TOTAL	\$27,859,807
Emergency & Non-emergency Transport Revenues	15,379,667
Subsidy Equivalent	\$12,480,139
City EMS Department Option Specific Transition Costs	\$472,220

Emergency and non-emergency transport revenues are estimated at \$15.4 million. The subsidy equivalent for the City EMS Department Option is \$12.5 million. Transition costs that are specific to the City EMS Department Option are \$472,220.

IX. Restructured Public Utility Model Option

Description of Option

This option depends upon reinstating the essential components of the current system design of a public utility model. The initial public utility model design is based upon six essential elements. First and foremost the model is designed to deliver the highest possible level of clinical care. Provisions within the designs ensure that the clinical care delivered in the field is monitored, community physicians are actively involved and a system medical director provides leadership.

A second characteristic of a public utility model is that it encourages the delivery of services in the most efficient manner possible. The operations contractor provides ambulance services and deploys its resources depending on matching the demand with staffed ambulances. This strategy is based on historical demand patterns and the geography of the community.

Efficiency is also encouraged in that the operations contractor typically has multiple site locations and experience that can be transferred from one location to another. This broad based experience is important to ensuring that the most efficient and effective technologies and processes are used in the delivery of emergency medical services.

Key components of the Public Utility Model design are in place to ensure that the community receives the best value possible. Rising costs are constrained through periodic competitive procurements and active negotiation with the operations contractor. The introduction of bid cycles encourages the contractor to maintain economical operations and the potential threat of losing during the next round of bidding maintains focus on the delivery of cost effective services. In addition to the periodic procurement, comparison of other Public Utility Models and systems through market research studies and annual surveys provides benchmarking opportunities to ensure the community is receiving good value for the services being delivered.

An important component used to ensure value to the citizens of the community being served by the Public Utility Model is that the majority of the costs of the system are recouped through reimbursement from insurance companies, federal health programs, and patients. In other words, the users of this system support the system. Also by

tapping into healthcare funds, the system is able to maximize external revenue sources and limit the amount of money need to support the system from general tax funds.

The Public Utility Model also has a number of components inherent in its design to provide stability to the system. These components ultimately provide a protection to the public. The public maintains ownership of the essential assets of production including the communication system, computer aided dispatch system, facilities, vehicles, and the billing and collection component. This allows for a transparent transfer from one contactor to another during a bid cycle and also enables the jurisdiction to take over the service in the event of contractor failure or inability to perform. The system retains ownership of the assets. The contractor agreement specifically provides mechanisms for an emergency take over of operations.

Flexibility is also a characteristic of the Public Utility Model in that it is structured to be able to respond to external or internal changes in the emergency medical services environment. Other Public Utility Models have effectively responded to decreases in reimbursement from federal health programs, increases in contractor costs, and the changes in the clinical care science which have modified care delivered in the field. The Public Utility Model is also a flexible design in that it can expand throughout multiple jurisdictions. This method of expansion allows the system to capture additional economies of scale to reduce the per transport cost for all.

Finally, the Public Utility Model is designed to have high levels of accountability over all aspects of the system. These include mechanisms to hold the system accountable for clinical care, operations, and finance. Clinical accountability is through the community physicians' involvement with the systems medical director.

Legal Structure

The structure of a public utility model is created through the establishment of a public trust or authority which is separate from the jurisdictions or jurisdictions served. This authority is governed by a volunteer board of directors with members appointed by the jurisdictions served by the public utility model.

The authority, in turn, seeks on competitive basis an operations contractor to provide personnel to operate the system. The contractor will provide all the EMTs, paramedics, dispatchers, supervisors, maintenance personnel, and support personnel to deliver emergency medical services. The contractor receives from the authority a

flat monthly fee to provide all the necessary operational services. The amount of this fee is determined through the bid process.

The authority is responsible for the financial components of the system including the recovery of revenue for insurance companies, federal health programs, and patients. This fee for service revenue supports the majority of the systems cost. The authority also acts as the contract manager insuring that the contractor is delivering the agreed upon level of service and is achieving all the defined performance standards.

The authority's board of directors is responsible for policy development and financial oversight of the entire organization. The board is appointed by the jurisdiction(s) participating in the system and should consist of members with specific competencies including healthcare finance, executive level healthcare management, accounting, healthcare law, and executive level management of a large private enterprise. The competencies identified support the ability of the board to oversee its responsibilities and develop sound policies for the authority.

The jurisdictions served by the EMS system are responsible for holding the board accountable, particularly those jurisdictions that are providing substantial financial support.

Operational Description

The ambulance contractor would provide all services both non-emergency and emergency for the defined service area. The contractor is responsible for providing all of the field personnel including paramedics and EMTs as well as all of the support services required to maintain and deploy the vehicles, medical supplies and communications.

The authority is responsible for providing the major capital assets such as capital equipment and vehicles as well as installing and maintaining the communications and information technology systems.

As described earlier, the services provided by the contractor are governed by a performance-based contract which clearly identifies standards that must be achieved including standards for response times, clinical care, vehicle maintenance, dispatching, and provision of patient care documentation to the authority for processing of claims and invoices. Failure to comply with the performance standards

result in financial penalties and chronic failure could result in the contractor losing the right to serve the community.

Accountability

Strong lines of accountability are inherent in the Public Utility Model. MAST financial crisis can be directly attributed to the system's straying from these components. Particularly with the regard to MAST administration's failure to maintain appropriate financial controls and systems and its failure to adequately analyze the financial ramifications of decisions including changes to operations, expansion of the program, and changes in health care reimbursement. Safety provisions in the design where the MAST board is charged with holding the administration accountable also failed. The composition of the board did not provide adequate financial expertise and the board strayed from its overall mission of policy and financial oversight to focus more intently on the provisions of clinical care and response time performance.

Operational oversight

Accountability is achieved from the operations contractor through a comprehensive performance-based agreement. This is not a level of effort agreement but requires guaranteed performance. Failure to perform will result in financial consequences as well as the potential for the organization to lose the right to serve the community.

Clinical oversight

Multiple mechanisms are in place for clinical accountability. Clinical quality standards for quality assurance, training, and patient care monitoring are formalized and the performance-based agreement with the contractor.

The Health Department licenses personnel and monitors clinical care. The independent EMS Medical Director monitors field personnel performance and clinical protocol compliance. The Emergency Physician's Advisory Board assists in the development of clinical protocols and defines the system's standard of care.

Financial oversight

Financial accountability resides with the authority as well as the primary funding jurisdiction. The authority is held accountable by an independent board of directors and ultimately the board of directors should be held accountable by the jurisdictions participated in this system.

Contract management

One of the essential functions of the authority is contract management of the operations contractor. MAST was unable to control the cost of its contractor and the relationship between the authority and its contractor is best described as adversarial. The financial result of this adversarial relationship was uncontrolled cost increases and the inability of the authority to conduct a competitive procurement which would attract qualified bidders.

Specific Commitments Required for the Success of the Restructured Public Utility Model.

The action steps in this section are designed to reconstruct the Public Utility Model. Many of the basic premises of a Public Utility Model have been neglected or have disappeared from the current MAST system. In order to reestablish the credibility of the Public Utility Model and MAST, significant changes must occur. The following action steps are required.

Recruit and employ qualified executive director

The Chief Executive of the authority should have the required skills and experience to run a \$30 million company. This executive should have a strong managerial background, experience working with a board of directors, and running an organization with 200+ employees. Healthcare and ambulance service experience would be helpful, but regardless, the executive should have strong financial skills associated with running a multi-million dollar business.

The selection of the Chief Executive Officer should not be the sole responsibility of the MAST board. The City of Kansas City should approve the executive director. The process should include the development of a specific and comprehensive

delineation of qualifications required for the position and a complete job description which identifies the roles and responsibilities of the Chief Executive. A national search should be conducted by the authority board of directors and the candidate selected by the board should be approved by the City.

Restructure the MAST Board of Directors

The MAST Board of Directors consists of seven voting members and two ex officio, non-voting members. Of the seven voting members four are physicians, one is an attorney, and two are city council members. The non-voting members are representatives from the City and are the Director of the Department of Health and a representative from the Finance Department. The current board of directors is heavily weighted towards clinical interests and expertise and is lacking vital business and financial competencies.

We recommend that the MAST Board of Directors be reconstituted from a seven to a nine-member board. The board members should be identified and selected based on their expertise and experience and the board positions should include the following competencies:

- ◆ An attorney with experience in health law
- ◆ The chief financial officer of a healthcare organization such as a major hospital or healthcare system
- ◆ Healthcare executives such as a CEO of a hospital or a Vice President of a healthcare system
- ◆ A business executive with experience in leading a multi-million dollar private company
- ◆ A consumer representative, such as a representative from a neighborhood association
- ◆ An emergency physician working in one of the community's major receiving hospitals
- ◆ Two city council members
- ◆ A certified public accountant with experience with healthcare organizations

We also recommend three non-voting ex officio members of the board to include the system's Medical Director, the Health Department Director, and the Director of the City Budget Office.

Conduct a comprehensive national procurement for an operations contractor

The Public Utility Model design includes provision for an independent ambulance contractor that is bound to perform through a comprehensive performance-based agreement. In order to achieve the advantages of competition for the market, it is important that MAST conduct a competitive procurement for a new operations contractor. In order to achieve effective competition and elicit response from multiple bidders, it will be necessary too assure bidders that selection will be on a level playing field, that funding sources for the term of an agreement are intact, and that the authority has reestablished its credibility and performance. This process will require a comprehensive rewrite of the existing request for proposals and the entire process must be managed in such a manner that multiple bidders will participate.

Advantages

The primary advantage of the Restructured Public Utility Model option is that previous investments will not be lost, the infrastructure of the system will remain in place and under public ownership, and transition costs would be limited. These advantages are summarized below.

Financial advantages

- ◆ *Control costs:* An effective competitive procurement and the resulting multi-year agreement will define and control the costs of the system. It is anticipated that if multiple bidders participate in the procurement, the costs of the system will be reduced over current expenditures. While it is impossible to identify the potential reductions, we believe the contractor costs can be reduced from \$1 million to \$3 million annually.
- ◆ *Previous investments retained:* MAST and the system has acquired significant capital infrastructure for the system. MAST operates a fleet of 65 ambulances, has purchased a 3.6 million dollar communication system, and has made a long-term investment in its facilities. The Public Utility Model option will retain these investments in the system and under public ownership.
- ◆ *Reduce transition cost:* The Public Utility Model is essentially in place within the system. Therefore, transition costs would be limited to the cost of conducting

the competitive procurement and any additional resources needed to support the interim operations and managing of the system.

Organizational advantages

- ◆ *Retain the trust structure:* Currently MAST is in the process of moving from a public trust organizational structure to that of a not for profit organization. We recommend that the trust structure be retained in that the not for profit organizational structure does not provide significant advantages and the trust is more reflective of its role in the system as a part of the community.
- ◆ *Less disruption in EMS system:* By retaining the current model and implementing the required corrective steps there will be minimal disruption in the EMS system. It is easier to fix the problems that have been identified rather than creating a new structure of governance and then transferring responsibility to another provider type.

Disadvantages

Two primary disadvantages have been identified. First has to do with the loss of credibility of the current structure particularly with city council and other jurisdictions. The second revolves around labor issues.

- ◆ *Loss of credibility:* Over the past 12 months, MAST's financial problems and the inability of MAST administration to communicate consistently and effectively with the City has created a significant loss of trust in the model. It is important to recognize that the financial problems of MAST are not a result of the Public Utility Model, but a result of poor financial management and inadequate financial oversight. The financial crisis that was recently precipitated could have been avoided if better financial analysis of decisions occurred in the mid 1990's and specific actions to mitigate negative financial performance trends occurred. Since these actions were not taken, the City was put in the position of having to bail MAST out of its financial problem. The multi-million dollar increase in City subsidy in FY 03-04 caused the City to rightfully question the ability of the Public Utility Model to remain viable.
- ◆ *Labor's response to change:* Since the late 1980's, the operations contractor has been employee owned. This resulted in an environment where other potential bidders did not believe that the system's procurement would be a level playing field. Under the Restructured Public Utility Model a competitive procurement would occur and these employees would become employees of a new contractor.

This represents a significant change for the workforce which most have not experienced during their tenure with MAST. Unsurprisingly, there is concern and rumors regarding what a new ambulance service employer may be like. Regardless, it is important that this process occur and efforts included in the process to ensure equitable treatment of the incumbent workforce by a new ambulance operations contractor.

Risk Evaluation

Implementation risks

Attracting qualified bidders: The primary risk of implementing a Restructured Public Utility Model revolves around the ability of the system to attract qualified bidders in a procurement process. The Kansas City system's history in attracting bidders has not been positive and one of the results of the instability of the system over the last few months is to make potential bidders wary of the system's ability to provide a fair evaluation and selection process. This can be mitigated through a comprehensive and well-managed procurement as well as defining secure funding sources for the ambulance contractor in the future.

Uncertainty of morale: Employees uncertain about their future and with negative perceptions of the potential employer will not be focused on the job at hand. Performance during transition could suffer significantly.

Labor agreement issues: If a contractor is unable to reach an agreement through negotiations with the existing labor group, the willingness of the existing workforce to accept and support a smooth transition would be doubtful.

Long-term risks

The major long-term risks of a Public Utility Model have been demonstrated by MAST's performance over the last decade. If the chief executive and his management team cannot effectively manage the organization, particularly with regards to the financial issues, any organization including the Public Utility Model will not remain viable.

Likewise, if there is a failure of any of the accountability systems including clinical oversight, operational oversight, or financial oversight; the systems performance both operationally and financially could degrade.

Implementation

Implementation of the Restructured Public Utility Model Option has been identified in the previous section with specific action steps that need to occur to correct the current model's deficiencies. These include

- ◆ The recruitment and employment of a qualified chief executive,
- ◆ The restructuring of the MAST board of directors
- ◆ Conducting a well managed procurement for an operations contractor

The time frame is expected to take between 18 and 24 months to fully transition and have a new operations contractor in place.

Cost

Transition/one-time cost

There are few one-time costs associated with the reconstitution of the Public Utility Model. These include the cost of a national search and recruitment effort to select a qualified chief executive. These costs are estimated to be approximately \$50,000. Another transitional cost is the expense of conducting a comprehensive well-managed procurement for the operations contractor. The cost for conducting such a procurement is expected to be about \$200,000. Finally, the current system will need interim support in implementing the required changes while managing the day-to-day operations of the organization. We estimate that another \$250,000 to \$400,000 will be required to support MAST's ongoing operations during the interim until a fully qualified contractor can be on board.

Recurring cost

The cost to operate the Restructured Public Utility Model is anticipated to be \$1 million to \$3 million less the current system's operation on an annual basis. The primary areas where savings can be captured lie with the operations contractor. The contractor should be able to be more efficient using experience from other operations and not assuming the full burden of overhead locally. We anticipate that these

savings could be in excess of \$1 million per year. Ambulance contractors are also likely to have much better insurance rates than the MAST system. Best estimates for the savings from insurance also approach \$1 million a year. Large ambulance services buy in bulk and can reduce operational expenses by up to \$250,000 a year for the purchase of the equipment and supplies. We also estimate that an additional \$1 million per year could be achieved as a result of the negotiation with the current workforce and developing the contractor's collective bargaining agreement.

X. Fire-Based EMS Option

Description of Option

This option is described in its fully matured state as a Fire-based EMS system. The evolution of the system from the current MAST Public Utility Model to the fully integrated Fire-based EMS Option is likely to take from two to four years. The description below is based on the vision of the Kansas City Fire Department and was developed with significant input and assistance of the Department's Labor Management Committee.

Legal structure

In the Fire-based Option, emergency ambulance services are provided as a component of the Kansas City Fire Department. As such, the services provided under the Charter and structure of the City of Kansas City, Missouri, Section 34, Article IX of the Code of Ordinances, which defines the primary role of the Kansas City Fire Department, would be expanded to include the Fire Department's role as both first responder and transport provider for emergency medical calls received through the 911 Public Safety Access Point.

The proposed Fire-based EMS Option contemplates that all response time, dispatch, staffing and other standards of the current EMS system be maintained or improved.

City ordinances will reflect that scheduled or non-emergency patient transports services are to be outsourced to a contract provider. Oversight responsibility for the non-emergency provider would reside with the Health Director.

Operational description

The Fire-based EMS Option is a fully integrated system in which all employees are cross-trained firefighters and certified as EMT-Basic, EMT-Intermediate, or EMT-Paramedic. Advanced life support capabilities are by ALS transport Ambulances and eventually ALS could be provided by ALS engine companies as well as. The costs of implementing ALS engine companies are not included in our financial analysis as this service would represent a new characteristic of the current system. Personnel work side-by-side with little differentiation other than their assigned role at a given

point in time. The Communications Center receives and dispatches all emergency (911) calls for both fire and emergency medical services. Fire Department units provide both first response and ambulance transport functions to 911 generated calls for emergency medical requests. Scheduled or non-emergency calls for patient transport are handled by a provider contracted to the City for these specific services.

The majority of fire departments across the nation deploy response units on a 24-hours a day, seven days a week schedule. The Fair Labor Standards Act (FLSA) recognizes that this is the preferred schedule for firefighters and provides local municipalities a specific exemption known as the 7k exemption, permitting a 53-hour work week without incurring overtime costs. KCFD's Memorandum of Understanding with IAFF Local # 42 limits the exemption from overtime to 49 hours per week. The Fire Department intends to train all former MAST ambulance personnel in firefighting to boost the fire suppression force and to qualify for the 7k-overtime exemption.

To meet current response time standards, provide adequate geographic distribution, and primarily utilize fire-based staffing patterns, deployment in the Fire-based EMS Option recommends twenty-three, 24-hour a day, seven day a week ambulances. These 23 ambulances are the foundation of the Fire-based Option. The 23 ambulances provide consistent staffing of 3,864 EMS unit hours each week.

Four additional ambulances are recommended to be staffed 12-hours a day, seven days a week. Shift schedules will be determined based on analysis of the peak demand for emergency ambulance calls. The 12-hour ambulances add an additional 336 EMS unit hours per week. The Fire-based Option provides 4,200 unit hours per week.

Fire-based ambulances are staffed with one EMT-Basic and one EMT-Paramedic. The staffing compliment satisfies the current definition of an Advanced Life Support (ALS) transport ambulance and thereby provides the same level of staffing as in the current system.

Seven of the 23 Fire Department ambulances are staffed using a combination plan referred to as a 3/2 split. In the outlying stations of the City where there are fewer calls but larger territories to cover, the Fire Department currently staffs suppression units with four FF/EMT-Basic certified personnel.

In the Fire-based EMS Option, seven stations that currently have four-person suppression unit staffing would also have an ambulance and an EMT-Paramedic assigned to the station. One of the FF/EMT-Basics would be designated as the swing

person for response purposes. The ambulance would respond to a call staffed with the FF/EMT-Paramedic and the swing FF/EMT-Basic. The suppression unit would respond with the three FF/EMT-Basics.

The 3/2 split staffing is an efficiency opportunity of the Fire-based EMS Option that is not present in an all-ambulance option. It is the integration of the two systems that allows for additional ambulances and unit hours to be deployed with significantly lower staffing costs.

Below is a summary of the Fire Based EMS Option recommended ambulance unit hours per week.

Table 14. Fire-Based EMS Option Hour Summary

No. Ambulances	Personnel Assigned	Staffing Pattern	Total Unit Hours/Week
16	FF/EMT-Basic & FF/EMT-Paramedic	24 hrs/day, 7 days a week	2,688
7	FF/EMT-Paramedic & swing FF/EMT-Basic from suppression unit (3/2 split)	24 hrs/day, 7 days a week	1,176
23	Subtotal		3,864
4	FF/EMT-Basic & FF/EMT-Paramedic	12 hrs/day, 7 days a week	336
Total Unit Hours/Week			4,200

Firefighting personnel

In the fully implemented Fire-based EMS Option, former MAST ambulance employees become employees of the Kansas City Fire Department. All responders are cross-trained firefighters and hold EMT-Basic, EMT-Intermediate or EMT-Paramedic licenses. Fire suppression units are staffed and equipped at the Basic Life Support (BLS) level. Ambulances are staffed and equipped to function at the Advanced Life Support level.

Personnel work on a full-time basis and are assigned or bid to positions on fire or medical units depending on their qualifications and seniority. There are no part-time first response personnel. The personnel are fully integrated with no distinction between ambulance and fire personnel other than assignment.

A staffing factor was developed that takes into account the number of hours a person is typically available for work. The factor accounts for vacation hours, sick leave and hours for mandatory continuing education needs. To adequately staff an ambulance 24 hours a day, seven days a week, 4.3 FF/EMT-Basics and 4.3 FF/EMT-Paramedics must be hired. The 3/2 split ambulances are also deployed 24 hours a day, seven days a week, but require only the FF/EMT-Paramedic position (the FF/EMT-Basic position is replaced from the suppression engine in the station). To staff an ambulance that is scheduled for 12 hours a day, seven days a week, 2.5 FF/EMT-Basics and 2.5 FF/EMT-Paramedics must be hired.

Table 15 reflects the personnel needed to staff the following recommended ambulances for the Fire-based EMS Option:

Table 15. Fire-Based EMS Option Ambulance Staffing Needs

Ambulances Deployment	# Ambulances	Staffing Factor	# FF/EMT-Basics Needed	# FF/EMT-Paramedics Needed
24 hrs/day, 7 days/week	16	4.3	68.8	68.8
24 hrs/day, 7 days/week	7	4.3	0	30.1
12 hrs/day, 7 days/week	4	2.5	10	10
Total		78.8	78.8	108.9

Approximately 190 FF/EMS personnel will be needed to staff the ambulances of the Fire-based EMS Option.

Field and support staff

The Fire-based EMS Option also includes two Medical Affairs Officers, available each day, 24 hours a day to respond, train and support EMS field operations. The 24/7 schedule requires 8.6 supervisory level FF/EMT-Paramedics. In addition, an EMS Division Chief, two EMS Training Officers (EMT-Paramedics), and two Quality Assurance Officers (EMT-Paramedics) all on 40-hour workweek schedules are added as additional support for EMS operations.

The Fire-based EMS Option does not need to duplicate management positions that already exist in the Fire Department. However, appropriate management and oversight is needed to adequately support the ambulance operations. Table 16 below summarizes the field support staff recommended for the Fire-based EMS Option.

Table 16. Field Support Personnel for Fire-Based EMS Option

Position Title	Shift	Staffing Factor	Personnel Hired
2 Medical Field Officer Supervisors (EMT-Paramedics)	23 hrs/day, 7 days a week	4.3	8.6
EMS Division Chief	40 hrs/week	1	1
2 EMS Training Officers (EMT-Paramedic)	40 hrs/week	1	2
2 Quality Assurance Officers (EMT-Paramedic)	40 hrs/week	1	1

A number of administrative support staff is needed to manage the ambulances services and the addition of 190+ personnel into the Department. Table 17, below summarizes the recommended administrative staff for the Fire-based EMS Option. All positions below are 40 hour a week, civilian staff positions.

Table 17. Administrative Support Position for Fire-Based EMS Option

Position Title	No. Personnel
Budget/Finance Analyst	1
Payroll Clerk	1
Accounting Clerk	1
Human Resources Specialist	1
Scheduling Assistant	2
Logistics Technicians	4
Secretary/Clerical	4
TOTAL	14

Communications center

The MAST Communications/Dispatch Center would merge with the Fire Department Center during the transition process. The Communications Center would dispatch units to all fire and EMS emergency calls including fire suppression units and ambulances. Medical emergency calls received through the 911 Public Safety Access Point (PSAP) would be received at the combined center and dispatched using medical priority dispatch protocols. Persons who dispatch ambulances are required under current ordinances to be Medical Dispatcher (EMD) certified and hold an EMT-Paramedic license.

Currently, Fire Department dispatchers are not required to hold an EMT-Paramedic certification and are not certified in EMD. In the combined Center, fire dispatchers without these certifications, would remain as dispatchers of fire apparatus for fire and other non-EMS calls. Former MAST dispatchers would assume the role of ambulance dispatchers but could be cross-trained to also dispatch fire apparatus. All new hires would be required to hold an EMT-Paramedic license and obtain EMD certification in order to maximize efficiencies and provide dual-purpose dispatchers.

The MAST Communications Center is currently close to achieving a Center of Excellence Designation. To maintain the same or improved level of service, the Kansas City Fire Department is committed towards that designation.

In FY03, Fire Communications dispatched approximately 55,000 calls for several types of emergencies. Of the total, 30,000 were dispatches of fire units to medical emergencies.

With the merger, the combined Center will dispatch calls for ambulances and fire unit responses to medical calls that come through 911. Based on FY03, a total of 57,000 emergency medical calls will be dispatched for ambulance response and fire units will continue to be dispatched to 30,000 of the emergency medical calls. Non-emergency medical calls would be received and processed by the contract provider for that service.

The EMD certified dispatcher would dispatch Fire ambulances on the medical calls and former Fire dispatchers would continue to dispatch fire units on specific medical calls.

Merging organizations does allow for elimination of certain Communications Center management positions. Fewer dispatchers are needed than the current MAST complement since non-emergency calls will not be received in the Fire

Communications Center. Recommendations for dispatchers, quality assurance and data management personnel are described below in Table 18.

Table 18. Communications Center Positions Transferred to KCFD

Position Title	Shift	Staffing Factor	Positions	Personnel Hired
EMS Dispatcher	12 hrs/day, 7 days a week	2.5	4 during day & 3 at night	17.5 or 18 persons
Dispatch Quality Assurance Officer	40 hrs/week	1	1	1
Dispatch Quality Assurance Clerks (Tape Audits)	40 hrs/week	1	2	2
Data Information Officer	40 hrs/week	1	1	1
Data Information Analyst	40 hrs/week	1	1	1
TOTAL			12 positions per day	23 persons hired

The Fire Department recommends that the current MAST building including the Communications Center be made available for the merger. The decision as to where the Communications Center will ultimately reside will be determined early in the transition. The MAST building would be a key addition to Fire Department physical assets in that it provides an alternative site for needed functions including but not limited to the Communications Center, equipment and medical supply storage, vehicle storage and equipment repair site. Combining the Communications Centers will require upgrades and re-tooling of the computer aided dispatch system, however, capital funds that had previously been split between MAST and the Fire Department can now be focused on the one site.

EMS patient transport billing and collection efforts

Billing for medical transports requires specialized skills and strict adherence to Medicare and Medicaid regulations. It is a complex process and not typical of municipal utility billing and collection processes. The City may choose to hire the former MAST employees and utilize the existing software for data input and billing processes. However, the City can also choose to outsource the process. Should the City choose to outsource billing and collection, the City should provide strong and

active oversight of the contractor and the entire billing and collection process. The City should provide a dedicated responsible City liaison who maintains a thorough working knowledge of the issues and requirements of ambulance billing.

The Fire department EMS option provides for several support positions in the Fire Department. One and/or more of the positions should be tasked as the Fire Department liaison to the Finance Department for billing documentation and protocols.

MAST currently budgets \$1.5 million for billing and collection services of both emergency and non-emergency transports. In order to budget for the function in the Fire-based EMS Option, the budget provides for the market rate for outsourcing. A rate of nine percent of emergency only revenues received or \$1,030,000 is budgeted for billing and collection services. The City can choose to retain existing personnel or outsource the function within this funding envelope.

Successful revenue collection is a joint responsibility shared between the provider of care and the entity charged with the billing process. The actions, decisions and documentation of field personnel are critical factors in the success of collecting transport revenues. It is important to recognize necessity of documentation training and maintaining awareness of reimbursement and financial issues regarding patient transports. Given the complexity of Medicare rules and regulations, it is recommended that both a Fire Department employee and a Finance Department employee participate in on-going training and national association meetings designed to address the financial issues associated with patient transports.

Records and run reports

Members of the public and insurance companies regularly request copies of ambulance transport run reports. The Fire Department currently manages its records and run reports. The integration of MAST will substantially increase the number of records annually received and maintained by the Fire Department. The records contain significantly more sensitive medical information and require more exhaustive quality assurance reviews. There may also be a requirement that the Fire Department maintain former MAST run reports for access by the public.

Under MAST, administrative personnel input data from the run reports into a software program for storage and billing purposes and hard copy reports were microfilmed for storage. Upon merger, MAST's processes for storage are adopted by the Fire Department Headquarters where public access is accommodated. The City

has the option to have all data input outsourced. However, contracting out does not remove the Fire Department from responsibility for the data or providing public access. The source for billing information and medical records is the field report. The Fire Department will need to maintain strict quality control and communicate daily with any vendor entering data on behalf of the Department.

Accountability

Financial oversight

As a City department the Fire Department and the Fire-based EMS Option receive financial oversight from the Kansas City Fire Chief. The Chief is most closely accountable for the day-to-day operations and performance of the Department. The City Budget Director, the City Manager and ultimately the City Council are accountable to the citizens of Kansas City, Missouri. Ambulance operational expenses and revenues will be reviewed annually as part of the City's budget process. All expenses and revenues associated with the ambulance operations will be part of the City's financial system, which allows for direct financial oversight and management.

During the transition period and because of the recent financial difficulties of MAST, it is recommended that a special financial oversight committee be appointed. This committee should address and facilitate issues such as billing and collection processes, acquiring purchasing and services contracts, transfer of capital assets, and merging financial systems, employee/human resource and legal issues.

Clinical oversight

The Emergency Physicians Advisory Board (EPAB) and the Emergency Medical Services Advisory Committee (EMSAC) continue to provide clinical oversight and advice to the Fire-based EMS Option, as well as oversight of the non-emergency contract provider. Likewise, the Director of Health would continue to provide medical direction and medical control. EMT-Paramedic licensure continues to be the purview of the medical director.

Governance

The Kansas City Council would be the governing body of the Fire-based EMS Option in the same manner that the Council governs the Fire Department. EPAB is established by ordinance and directs the clinical components of the system. The Emergency Medical Services Advisory Committee is an advisory body currently in place to address specific EMS system issues.

Advantages

The advantages of the Fire-based EMS Option can be grouped into three general areas: 1) intrinsic advantages, 2) emergency management/unified command and control advantages, and 3) EMS system stability/service level opportunities. Advantages are briefly described below.

Intrinsic advantages

Public confidence in Fire Department: The community trusts and relies on the Fire Department and its dedicated workforce. High levels of public confidence should reduce or eliminate community concerns regarding continuity of EMS services.

- ◆ *A single integrated structure for the administration and management of the emergency response system eliminating the need for two separate management structures.*
- ◆ *Managerial staff that are directly responsible to city management and elected officials for the identification, implementation, and achievement of emergency service program goals.*
- ◆ *Utilization of capacity currently available in the fire department by assuming additional duties through cross-training and dual role responsibilities.*
- ◆ *Absorb current MAST workforce:* MAST employs approximately 250 employees. The Fire-based EMS Option is constructed to maximize the opportunity for current MAST employees to be absorbed into the City with the least amount of disruption to their base salaries and general livelihood.
- ◆ *EMS employees will be City residents:* While the City Council may provide for an extended phase-in period specifically for the MAST merger, at some point in the future, all EMS employees would be residents of the City. At this point, the City will enjoy the full economic benefit of the employee residency requirement.

- ◆ *Employee turnover and burnout should be reduced:* The Fire Department has historically maintained a low (three percent or less) turnover rate while the current MAST turnover rate is approximately 14%, but has recently been as much as 20 percent annually. Employees in the Fire-based EMS Option would experience less stress due primarily to two operational differences. First, eliminating roving ambulances in favor of station-based deployment creates less stress and provides for employee recovery time. Second, there is an opportunity for employees assigned to ambulances to rotate onto suppression units, which respond to fewer calls and have an overall shorter time on task on medical responses than do the ambulances. This provides an opportunity for Department employees to maintain EMS and firefighting skill levels and the opportunity to work on less busy units as needed to avoid burnout.
- ◆ *Fiscal stability:* The City can assert more financial control on the ambulance service by assuming direct financial management through the Fire Department. In addition, certain financial advantages normally associated with government such as access to the City's pooled cash for cash flow purposes, and potentially more advantageous debt structuring, would accrue to a fire-based EMS service. The City would be in control of the entire EMS budget both revenues and expenses, through the annual budget process as opposed to managing only the subsidy.

Emergency management/command and control advantages

- ◆ *Single, integrated on-scene Incident Command System:* A single unified command structure is advantageous during routine and major emergency events. There are greater operational synergies and control achieved in a chaotic environment.
- ◆ *Unified planning and training for response to terrorist attacks:* Kansas City is deemed a city at risk for terrorist attacks and as such has received Urban Area Security Initiative (UASI) funds, from the Department of Domestic Preparedness. A significant challenge to the Urban Area is to avoid duplication of effort and organizations working at cross-purposes in the use of UASI funds. Placing emergency medical response within the Fire Department assures better integration, preparation and use of UASI funds.
- ◆ *Focus is on emergency responses:* In the Fire-based EMS Option, non-emergency responses and transports will be outsourced to a contract provider. This allows the Fire Department to focus solely on the emergency responses which is consistent with the Fire Department mission and provides scarce resources to the most critical calls for service.

- ◆ *Eliminates one labor union agreement:* Preliminary discussions with the Fire Department Labor/Management Committee indicate that the members of Local I-34, the MAST paramedic labor union, will be recognized and merged into the Local 42, the Kansas City Fire Department, and International Association of Firefighters. The result is that there will be one less labor agreement to be negotiated. In addition, Local 42 is motivated to work through the many issues that naturally arise from the merger of two workforces.

EMS system stability/service level opportunities

- ◆ *Consolidating Communications Centers has many advantages:* A single integrated communications system allows personnel to communicate effectively between suppression and EMS response units. There are opportunities to more effectively utilize funding for dispatch and radio communications through one rather than two organizations. One organization will produce dispatch and performance reports thereby avoiding duplication of effort and resolving operational conflict. The MAST Communications functions will be merged into the existing Fire Department Communications organization eliminating emergency data transfers between two responding organizations.
- ◆ *Fire Department management structure is in place:* The Fire-based EMS Option recommends blending the EMS operations into the current Fire Department management structure. In particular, the Communications Center, and field operations and overall system management will rely on current Fire Department management.
- ◆ *Potential for partial funding to offset hiring of new FD employees:* In November of 2003, Congress passed the SAFER ACT (Staffing for Adequate Fire and Emergency Response Firefighters Act) authorizing the implementation of a direct grant program to assist communities in hiring firefighters. The matching grant program is awaiting appropriation for funding. Should appropriations be provided, significant cost savings can be achieved by municipalities employing new firefighters on a matching grant basis.
- ◆ *Additional ambulances utilize existing Fire Department staffing:* Seven ambulances can be placed into service with significantly lower labor costs by sharing labor resources from existing four-person staffed suppression units. This is an efficiency gained by the integration of the two organizations and one that is not available to any other EMS system options considered.
- ◆ *System improvements more easily implemented:* Working within one organization allows for closer monitoring of proposed system changes and a great likelihood of success.

- ◆ *Fair Labor Standards Act (FLSA) 7K Exemption:* Cross-trained firefighter/EMS employees qualify for the 7K overtime exemption that allows for an extended work week beyond the typical 40 hours a week. This allows for 24 hour a day and 12 hour a day work schedules without incurring overtime pay.

Disadvantages

The disadvantages of the Fire-based EMS Option are primarily related to efficiency and financial containment restrictions. Disadvantages are described below.

- ◆ *Geographic deployment response times are inherently slower:* Shorter ambulance response times can be achieved with fewer ambulances when units are roving. MAST ambulances constantly move to the anticipated next call based on several years of response history. It takes more geographically deployed ambulance to achieve the same response time performance. The fire-based model takes this into account and has allocated the appropriate resources to match the existing response time requirements.
- ◆ *Fire Department deployment method does not aggressively match demand to unit availability:* The Fire-based EMS Option is primarily based on 24 hour a day unit deployment. As a result, a lower number of peak demand units are provided for than in the current system and a higher number of units are available during the non-peak hours.
- ◆ *Changing ambulance deployment to meet demand is more difficult:* A flexible deployment constantly changes the deployment pattern based on call history. Changes to adapt to demographics or traffic patterns, for example, are made quickly in the flexible system. The Fire-based EMS Option which is station based, typically adapts by adding more units.
- ◆ *Cost containment:* Cost containment in the current system is designed to be achieved through a formal competitive bidding process for an operations contractor. This process is designed to ensure that competitive pricing serves as the foundation for system cost. This process would not be available with the Fire-based model. Cost containment in a Fire-based EMS system will be dependent upon the City's budgetary and managerial process for expenditure control.
- ◆ Should budgetary restrictions be imposed in subsequent years, it will be difficult to address staffing issues and there may be subtle changes over time that have a deleterious effect on quality or performance which can be more difficult to detect in a large integrated organization.

- ◆ *Consequences for non-performance:* With a Fire-based (or City operated) EMS system, it would be difficult to establish financial consequences for non-performance. Currently, the system models calls for financial penalties for missed response time performance and if the Contractor consistently fails to meet required performance standards, it can be replaced through competitive procurements. This primary method of ensuring performance through fiscal penalty or threat of loss of contract would not be available under a city-operated system.

Risk Evaluation

Implementation Risks

The implementation risks of the Fire-based EMS Option are predominantly employee related. The risks are outlined below:

- ◆ *Uncertainty and morale:* Employees who are uncertain about their future working conditions, their ability to earn a living, and the question of employment (or unemployment) are not focused on the job at hand. Performance during the transition could suffer.
- ◆ *Loss of key management personnel:* Concern by management and middle management personnel about their future employment may result in a loss of key management and middle management personnel. This loss may translate into some difficulty with day-to-day operations during the transition.
- ◆ *Blending two cultures is challenging:* MAST and the Fire Department have definite cultures and very different workforce demographics. Blending the two will be a significant short-term and long-term challenge for the Fire Department.
- ◆ *Loss of current system personnel that cannot or will not relocate:* A number of existing personnel will not transfer to the Fire Department. While, the Fire Department will not need the full contingent of EMTs and paramedics, it is possible that not enough of the current work force will transition, making implementation of the fire-based model difficult and extending the implementation time frame.
- ◆ *Loss of field employees who cannot pass firefighter candidate tests:* Based on historical statistics, not all employees (firefighter candidates) will pass either the medical physical or the Candidate Physical Ability Test (CPAT). Maintaining an adequate number of experienced EMT-Basic and EMT-Paramedics is likely to be a challenge during the transition.

- ◆ *Union merger must address a number of difficult issues:* Employee schedules, leave and sick time transfer, pension transfers, seniority status, pay incentives, and overtime eligibility are some of the issues that IAFF Local 42 has pledged to work through for the new employees.

Long-term risks

Long-term risks are associated with maintaining performance standards within financial goals while utilizing a less flexible operational model.

- ◆ *Fixed, station based deployment is less flexible:* The Fire-based EMS Option applies ambulance unit hours when they are not necessarily needed in the system. The only way to reduce the excess hours is to deploy more 12-hour a day units and/or utilize selected short-term overtime staffing of ambulances. The Fire Department will need to be flexible to allow changes in staffing patterns to meet budget expectations.
- ◆ *Additional Flexible Deployment* may be needed to meet response time standards: Should the Fire Department not be able to meet response time requirements, the Department will need to increase ambulance unit hours. The current Fire Department model would add hours either by additional 12-hour, 24-hour or overtime ambulance hours.
- ◆ *Merger with Fire Department* is likely to be an irreversible decision: Once the Council decision is made to dismantle MAST and merge with the Fire Department, reversing the decision at some point in the future would be complicated and extremely unlikely.

Implementation

Constraints/issues to be addressed

The majority of issues to be addressed in the merger of the MAST system into the Fire Department are workforce related. Given the political will, all issues can be overcome. However, if certain issues are not addressed, they can, in and of themselves, complicate the success of a merger or make the merger more expensive than proposed. The issues and constraints are listed below in the order of their importance to the success of the Fire-based EMS Option.

- ◆ *Fire Department hiring age restriction:* Currently the Fire Department does not hire individuals who are 30 years of age or older for firefighter positions. The

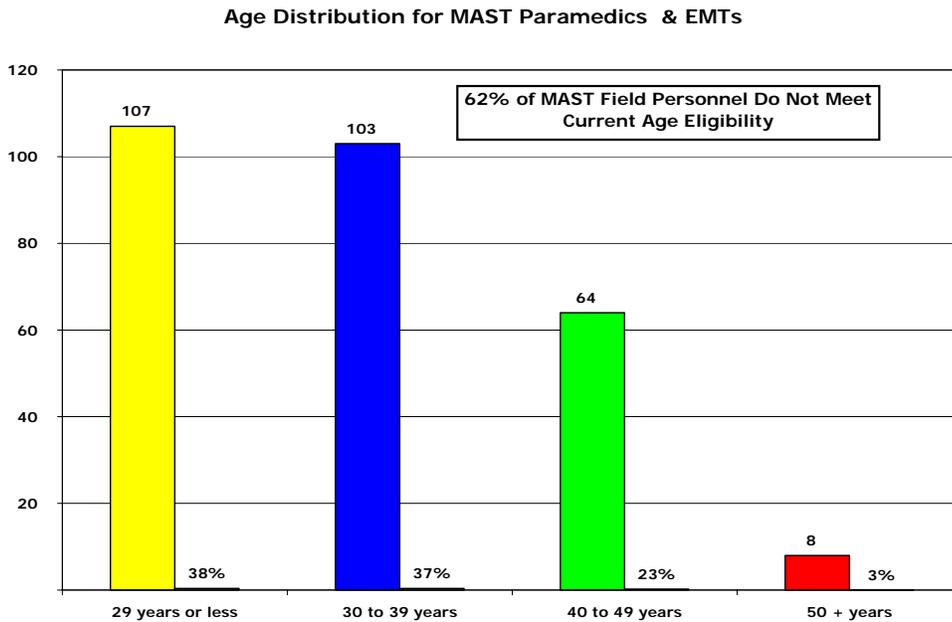
Fire-based EMS Option depends on the transfer of current MAST EMT-Paramedics and to a slightly lesser degree on MAST EMT-Basics to be successful and provide a seamless transition of service.

Currently, there are not enough FF/EMT-Paramedics in the Fire Department to staff the ambulances needed for the system. However, demographics of the MAST workforce are presented in Figures 18 and 19 and are summarized below as of January 2004.

MAST EMT-Paramedics who are age 30 or over represent 68 percent of the workforce and would be under current requirements ineligible to apply to the Fire Department.

MAST EMT-Basics who are aged 30 or over represent 57 percent of the workforce would also be ineligible.

Figure 18. MAST Employee Age Distribution

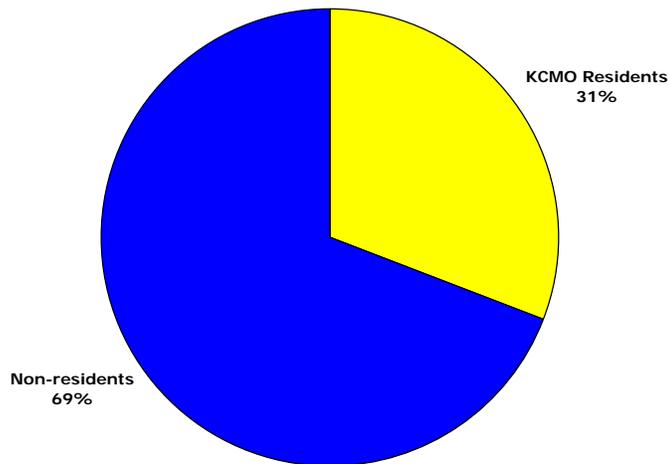


- ◆ *City residency requirement:* Article VII of the City Administrative Code requires that City employees live in the City within nine months of hire and provides for hiring preference for applicants who live in the City at the time of hiring. Firefighters are currently required to be City residents when applying for positions. The City will need to seriously consider the current residency requirement and work toward a practical solution that will allow ambulance services to continue and provide a transition opportunity for the incumbent

workforce. The demographics of the current MAST workforce are very low regarding City residency.

Figure 19. MAST Employee Residency Distribution

City Residents Vs. Non-Resident MAST Paramedics & EMTs



Only 28 percent of the MAST EMT-Paramedics currently live in within the City limits.

33 percent of the MAST EMT-Basics live within the City limits.

30 percent of the System Status Managers (dispatchers) live within the City limits.

Overall, some 70 percent of the field and dispatch employees do not live within the City limits.

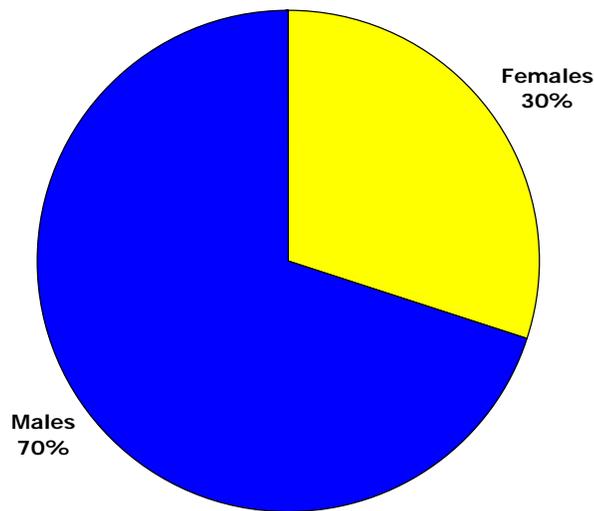
- ◆ *Employees will lose expected overtime work and/or pay:* The Fire-based EMS Option recommends preserving the base pay of employees who transfer to City employment. However, use of overtime scheduling is inherent and expected in the MAST flexible deployment model. In the Fire-Based EMS Model, there is likely to be significantly less overtime available for field personnel.
- ◆ *Employee work schedules will change:* MAST currently utilizes one 24 hour a day, seven day a week ambulance. Most of the current work schedules are 8, 10,

and 12 hour workdays. Work schedules will change to 12 and 24-hour a day work schedules.

- ◆ *Some employees will lose jobs:* When the two organizations merge, certain management positions will not be required, non-emergency transport will be outsourced and potentially the billing and collection function will be outsourced. Not all current MAST employees will be needed in the fully matured Fire-based EMS Option.
- ◆ *Not all MAST employees will become firefighters:* It is very likely that some number of current MAST field personnel will not pass firefighter minimum physical requirements and/or may not complete firefighter training. Some employees may need to go through fire training more than once or may not be able to complete the course and obtain certification. The City and the Department should adopt procedures to handle these issues before the merger so that MAST employees know what to expect for their future.
- ◆ *Paramedic preference for Fire Department hiring should be in place immediately:* The Fire-based EMS Option requires approximately 109 EMT-Paramedics in the field. Some percent of current MAST paramedics will not be available for employment in the Fire Department for any number of reasons, which leaves fewer available paramedics. The Fire Department can be proactive by using hiring preferences to obtain as many EMT-Paramedics as possible and as soon as possible.
- ◆ *Disproportion loss of MAST ambulance personnel who must become firefighters:* Due to the current age and gender profile of the MAST workforce, a disproportionate number of former MAST ambulance personnel may not become firefighters. See Figure 20.

Figure 20. MAST Gender Profile

Gender Profile MAST Paramedics & EMTs



Timelines

Pre-employment processing

The timelines described below assumes a transition period of at least six months. During this time and before the Fire Department assumes the ambulance service, all City hiring processes including application intake, written testing, background checks, and medical physicals are completed. The transition budget includes \$1,000 per candidate to cover the City's incurred hiring process costs for 278 potential employees.

Processing stipend

Processing (application, written testing, medical physical, finger-printing, background data collection, etc.) for former MAST employees will impact the employee and cost them time. Typically, in a takeover situation, a stipend is offered to offset any time expended. The Fire Transition Budget includes a stipend of \$527

for EMT-Basics and \$574 to EMT-Paramedics, which equates to estimates of lost time cost.

Preceptor program

A key attribute of the Fire Department is that there are currently employees who have advanced EMS certifications. By introducing a preceptor program prior to assuming the ambulance service, the Fire Department is well positioned to assume the service, back-up ambulance positions as needed and place the 3/2 split configuration station ambulances into service with confidence in both the advanced fire and EMS skills. Thirty FF/EMT-Basic and 30 FF/EMT-Paramedic certified firefighters would be selected to participate in the preceptor, ride-along program on MAST ambulances. The Fire Transition Budget includes six-weeks of backfill overtime for the firefighter positions while they are in the preceptor program and until the Medical Director releases them to ambulances.

Assumption of service

The transition assumes that on the date the ambulance service is transferred, the Fire Department will operate 23 ambulances on a 24-hour a day schedule and four ambulances on a 12-hour a day schedule. It is strongly recommended that the Fire Department begin with this operating schedule and not operate in a mixed schedule environment. Labor agreements regarding issues such as employee pay, pension, age and residency issues, individual employee work schedules, and employee-training expectations should be in place prior to assuming the service.

Paramedic hiring preference

It is likely that some number of former MAST employees will either not desire to be hired or will not be eligible for hiring by the Fire Department. In anticipation of the need for EMS certified personnel, the Fire Department should, as soon as possible, focus all hiring efforts on preference for already certified EMT-Paramedic and EMT-Basic candidates.

Aggressive timeline and operational assumptions

This timeline is aggressive. It assumes five 10-week fire academy classes of 40 candidates in 12 months. It also assumes that at the end of each class that the state will provide firefighter certification testing in a timely manner. The Transition Budget includes funds for the equivalent a Fire Captain and two Firefighters to oversee fire academy training, full-time for the 12-month training transition.

Operational assumptions are as follows:

- ◆ Upon assuming the service, ambulance schedules will immediately reflect the Fire-based EMS Option plan of 23 ambulances on 24-hour a day schedule and four, 12-hour a day ambulances.
- ◆ The Fire-based EMS Option requires 109 EMT-Paramedics, 79 EMT-Basics and 9 Medical Field Officers. Salary costs are budgeted for ambulance personnel to complete 10 weeks of firefighter certification training. Ambulance personnel will attend the fire academy on-duty; however, their positions must be backfilled in order to maintain the needed number of ambulances in service.
- ◆ Upon assuming the service, 40 former MAST employees (preferably those with EMT-Paramedic certification) will enter firefighter academy class on a full-time basis and fire academy classes will continue back-to-back throughout the year.
- ◆ Upon service assumption, ambulances will be staffed with: 1) former MAST employees who are not yet in the firefighter class, 2) Fire Department FF/EMT-Basics who have completed the preceptor program and are temporarily assigned to the ambulances (backfill overtime is needed for their regular positions) and 3) Fire Department FF/EMT-Paramedics who have completed the preceptor program and are temporarily assigned to the ambulance (backfill overtime is needed for their regular positions).

Costs

Transition/one-time costs

There are a number of one-time costs that accrue to all or several of the options such as satisfying the MAST debt obligations. These more generic option costs are outlined in Table 13.

Transition items that accrue to the Fire-based EMS Option were described in the Timelines section above. In addition, the cost to bid and procure a contract provider

for the non-emergency transports is likely to cost \$50,000. This is an expense that only the Fire-based EMS Option incurs. The transition costs are summarized below.

Table 19. Fire-Based EMS Option Transition Costs

Transition Item	Description	Cost
Pre-employment Screening	279 applicants @ \$1,000 each	\$279,000
Applicant Stipend Program	126 EMTs @ \$527 & 153 Medics @ \$574	\$154,224
Preceptor Program	30 FF/EMT-Basics & 30 FF/EMT-Paramedics	\$594,600
Fire Academy Instruction	5 classes, 1 Captain, 2 FF/EMT-Paramedics for 12 months & materials	\$251,850
Fire Academy Candidates	196 candidates	\$2,130,200
SUBTOTAL		\$3,409,874
Procurement Process	To outsource non-emergency transport services	\$50,000
TOTAL		\$3,459,874

Transition cost estimates do not include or anticipate any delay in the 12-month schedule, which produces firefighter/EMS ambulance staffing that qualifies for the FLSA 7K overtime exemption. Should the certification classes be delayed, additional funds would be required to cover the incremental overtime costs.

In addition, transition cost estimates do not include the cost to recycle employees who may fail the CPAT or firefighter certification test.

Recurring costs

The cost to operate the Fire-based EMS Option is based on ambulance employees at average firefighter wage. FF/EMT-Paramedics working on the ambulance will be paid incentive pay of 10 percent of base wages. When possible, current Fire Department salary structures were used to cost out positions. For other positions, current MAST salaries were used as the basis for salaries.

The Fire-based EMS Option budget includes the costs to backfill positions during EMS and fire continuing education and training needs which are estimated at 60

hours per year. Ambulances cannot be taken out of service for training or response times may not be met. Therefore, training will be conducted off-duty.

A detailed budget was prepared for the fire-based EMS option. Personnel costs represent all of the positions described previously. Billing and collection services are budgeted at \$900,000 or nine percent, which allows adequate funding to either hire MAST personnel or outsource contract services. Fleet maintenance costs are budgeted at the same budget level as MAST fleet services. The budget has been reduced to represent only the level of service needed for only emergency ambulances and only Missouri services. The option is available to the Fire Department to utilize City services, contract for services, hire employees or some combination thereof.

Insurance costs are reduced significantly to reflect the City’s self-insurance capability. A close analysis of budgeted insurance is needed to determine whether other reductions are warranted and to determine the required insurance reserves.

Below is the summary of expenses for the Fire-based EMS Option.

Table 20. Summary Cost Estimates for Fire-Based EMS Option

Description	Budget
Ambulance, Field Support & Administrative Personnel	\$15,771,784
Billing & Collection Services	\$1,030,000
Vehicle Maintenance, Equipment & Supply Commodities & Contractual	\$2,877,814
Non-Personnel	
Operations	\$223,310
Communications	\$621,198
Training	\$68,800
Administration	\$2,361,741
Administrative Support	\$266,598
TOTAL	\$23,221,245

With emergency transport revenues estimated at \$11.4 million, the equivalent subsidy amount for the Fire-based EMS Option is \$11.8 million.

Table 21. Summary of Revenue and Subsidy Requirements for Fire-Based EMS Option

Description	Budget
Personnel	\$15,771,784
Non-Personnel	\$7,449,461
TOTAL	\$23,221,245
Emergency Transport Revenues	\$11,400,000
Subsidy Equivalent	\$11,821,245,
Fire-based Option Specific Transition Costs	\$3,409,597