



CITY OF SAN ANTONIO

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April 27, 2006

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Ladies and Gentlemen:

RE: City Management's Corrective Action Plan Report and the Report on the Review of the 9-1-1 Communications Center

We are please to attach for your review the report for an audit of the 9-1-1 Communications Center. This was an extensive undertaking that began in spring 2005 and was concluded with a formal exit conference on September 12, 2005. City Management's written responses to the audit issues were expected by mid-October. However, commitments due to the Katrina and Rita Hurricane Relief Efforts, and changes within City Executive Management delayed receiving the responses which have been attached for your review. SAPD and SAFD Management and Staff need to be thoroughly recognized and complimented for their cooperation/assistance provided for this audit.

The issues, recommendations, and corrective actions planned are numerous and complex. SAPD, SAFD and ITSD have agreed or partially agreed with fourteen of the seventeen recommendations. Several recommendations will require information technology assistance in the form of establishing an enterprise-level strategic planning process and policies. In addition, Information Technology Management needs to be involved in current and future hardware and software changes and/or purchases.

There are significant policy issues regarding the use of sworn police officers and uniformed Fire/EMS personnel for dispatching. At this time, civilian personnel answer all 9-1-1 calls and perform dispatching duties, along with sworn officers for the Police Department. Fire/EMS does not utilize any civilians for dispatching. This function can be performed by civilian personnel at substantial costs savings. The potential annual payroll cost savings including benefits are estimated at \$3.6 million. The report shows that the trend in other major cities has been to civilianize dispatching positions. The cost savings could be realized by realigning the sworn police officers and uniformed Fire/EMS personnel to public safety positions that are currently unfilled.

The report also highlights internal control issues that exist at the 9-1-1 Communications Center related to lack of system redundancy, an inadequate back-up facility, excessive physical and logical access to the facility and applications, lack of an application change control process, and issues with the current hardware. The report provides recommendations, if implemented, that would address these issues and greatly enhance the internal control environment at the 9-1-1 Communications Center.

The services performed by the 9-1-1 Communications Center are a vital link between citizens and public safety agencies. We encourage you to review Management's Corrective Action Plan and the summary of findings. The Internal Audit Department appreciates the opportunity to have performed this review because it has highlighted areas for substantial improvements in customer service, major reductions in expenditures or cost savings, and enhancement of internal controls. We are available to discuss this material with you individually at your convenience.

Sincerely,



Patricia M. Major CPA, CIA, CTP, CGFM
City Auditor
San Antonio, Texas

cc: Pat DiGiovanni, Deputy City Manager
Michael Armstrong, Assistant City Manager/Chief Information Officer
Erik Walsh, Assistant City Manager
Hugh Miller, Acting ITSD Director and Chief Technology Officer
Tyrone Powers, Assistant Police Chief
Mario Guerra, Assistant Fire Chief
Leticia Vacek, City Clerk



CITY OF SAN ANTONIO
INTERNAL AUDIT DEPARTMENT

Review of the 9-1-1 Communications Center

Project No. AU05-017

Release Date: April 27, 2006

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EXECUTIVE SUMMARY

Overview

A review of the City of San Antonio's 9-1-1 Communications Center dispatching operation (hereafter referred to as "Center") has been completed. The objectives of the audit were to review the organization and resources of the Center and to assess compliance with current policies, procedures and controls in place to ensure achievement of the Center's mission. This review covered the period January 2004 through December 2004. Fieldwork for this audit was conducted primarily from February 2005 through May 2005. The audit was limited to a review of the staffing, organization, technology and operations of the Center.

This review was designed to provide reasonable, but not absolute, assurance that the Center follows policies and procedures, that the Center is operating in an effective and efficient manner, and that Management's internal controls are effective. This audit included a study of internal controls considered relevant in assessing risks and the control environment as established by Management. The review was based on discussion, review of selected documentation and site visits; and, it would not necessarily reveal all internal control weaknesses.

The audit report includes background information to assist readers in understanding the Center's organization, staffing, operating environment and call process.

Results In Brief

Based on the work performed, the audit team concluded that the most serious issue noted was the inconsistencies identified throughout the Center. It became apparent that the Center is operated by two separate organizations, Police and Fire/EMS, each with its unique culture and management style. This structure has resulted in a lack of consistent and coordinated policies and processes. This has impacted service delivery to citizens (effectiveness), operational efficiencies, and human resources management.

Examples of organizational issues at the Center include:

- Lack of accountability for the entire operation
- Lack of comprehensive formal policies and procedures for Fire/EMS personnel
- Inconsistent use of civilians, sworn and uniform personnel
- Compensation inequity between civilian and sworn/uniform employees
- Insufficient training for Fire/EMS Call-Takers and Dispatchers
- Lack of comprehensive performance management metrics
- High call abandon rate

Based on a review of the benefits of emerging organizational models for delivering communications services, this report recommends implementation of a single organizational structure with authority over all emergency response services. This should improve the efficiency and effectiveness of the dispatching operations and allow the Center to run at a more optimal level. It should create a distinct career path for civilian Call-takers and Dispatchers. In addition, potential annual payroll cost savings from differentials between civilian and sworn/uniform base compensation and benefits is estimated at \$3.6 million, **Appendix A-1.**

Regardless of the future organizational structure, the City Manager, Police Chief, Fire Chief and ITSD Chief Information Officer need to collectively address the following internal control issues.

- Lack of redundancy for the Computer Aided Dispatch (CAD) application and the network
- Inadequate back-up facility
- Excessive physical access to the Center
- Hardware Deficiency related to the Automatic Vehicle Locations (AVL) Software
- Unrestricted access to the 9-1-1 CAD application and data by programmers

These internal control issues could have been identified and addressed if the City and ITSD had a strong and enforceable control framework such as CobiT (Control Objectives for Information and related Technology) and/or an IT process framework such as ITIL (IT Infrastructure Library). It is very realistic to expect both risk mitigation and process improvement through the use of these frameworks.

In addition, during the course of performing this audit, concerns about whether the entire 9-1-1 system was operated efficiently and effectively arose. Therefore, it is recommended that an audit of the Bexar Metro 9-1-1 Network District be performed to ensure compliance with contractual, regulatory, and financial management of the 9-1-1 program.

Introduction

The City of San Antonio (COSA) is at risk from hazards that could threaten public health, public safety, private property and government assets. A reliable communications system is essential to obtain information on emergencies and to direct and control COSA resources responding to those situations. In almost every case, the 9-1-1 Communications Center will be a citizen's first point of contact when faced with an emergency or crisis situation. The Center provides that vital link between citizen and public safety agencies that depend on a dedicated staff to quickly, accurately and efficiently relay and maintain vital emergency response information.

The Center operates a 24-hour, 7 days per week modern, state-of-the-art emergency communications facility located in the police headquarters building. This facility has been used for 9-1-1 service delivery since 1962; a new 9-1-1 Center was fully activated during March 2004. The Center provides two primary public safety services – taking calls, including 9-1-1 calls, and dispatching for public safety agencies. The total number of 9-1-1 calls received by the Center in 2004 was approximately 1.1 million. The Center is staffed with roughly 212 full-time employees whose primary duties relate to either dispatching or call-taking. The Center provides services for law enforcement, fire, and emergency medical services (EMS). It is operated and maintained jointly by Police and Fire/EMS personnel.

Bexar Metro 9-1-1

Texas statutes govern 9-1-1 emergency telecommunications in Texas. Texas Health and Safety Code, Chapter 775 – Emergency Services Districts, allows 9-1-1 services to be provided by Home Rule Municipalities, single purpose Emergency Communication Districts (ECD) and the state program administered by the Commission on State Emergency Communications (CSEC) and operated by the 25 Regional Planning Commissions (RPCs).

The COSA 9-1-1 Center, along with other South Texas counties are supported by the Bexar Metro 9-1-1 Network District. The District is a governmental entity which was established in 1987 to serve the people of San Antonio and three South Texas counties: Bexar, Comal, and Guadalupe.

Funding for the 9-1-1 services within the District is appropriated by the Texas Legislature from a 9-1-1 service fee assessed on home, business and wireless telephone lines, averaging around \$0.50 per month. These funds pay for databases where the caller's phone and location information are stored, the telecommunications network that delivers the 9-1-1 call over dedicated lines to the Communications Centers, and administrative costs.

In fiscal year 2004, the District contributed \$319,924 to the Center; who used it to fund five temporary Call-taker positions, communications equipment maintenance and staff training. Periodically, the District recommends system software and hardware enhancements and provides financial assistance to pay for these improvements. With the exception of providing funding for training, continued education and attendance at regional and national professional seminars, the District does not actively participate in or govern day-to-day operational matters at the Center.

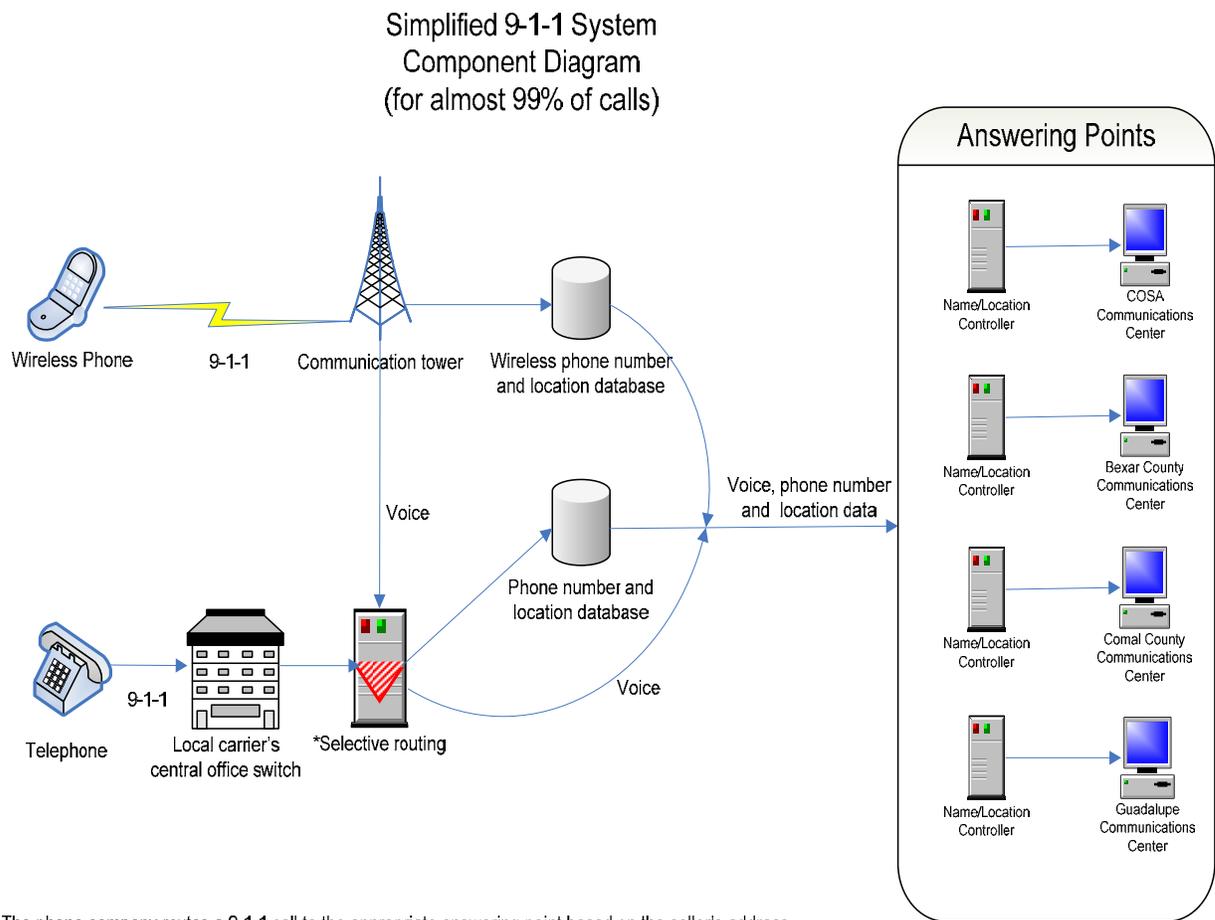
Overview of the 9-1-1 System

When a citizen dials 9-1-1, the call is automatically routed to the appropriate public safety answering point. San Antonio's originating 9-1-1 calls are routed to the Center. Local answering points are typically city police, fire or sheriff's departments with facilities equipped and staffed to receive 9-1-1 calls. Police Call-takers at the Center answer 9-1-1 calls and direct them to the appropriate Dispatchers who then activate the proper emergency response agencies to the incident.

A 9-1-1 call is selectively routed to the Center along transmission lines dedicated solely for 9-1-1 use, and the Call-taker at the Center receives a display on a computer monitor that automatically identifies the caller's address and telephone number. Should the call be disconnected, the Call-taker has the

necessary information to call back. Further, should the caller be unable to identify his or her location, the 9-1-1 System displays the address from which the call is made, enabling the Dispatcher to send emergency response personnel. **Figure 1** displays the components of a 9-1-1 System.

Figure 1 – System Component Diagram



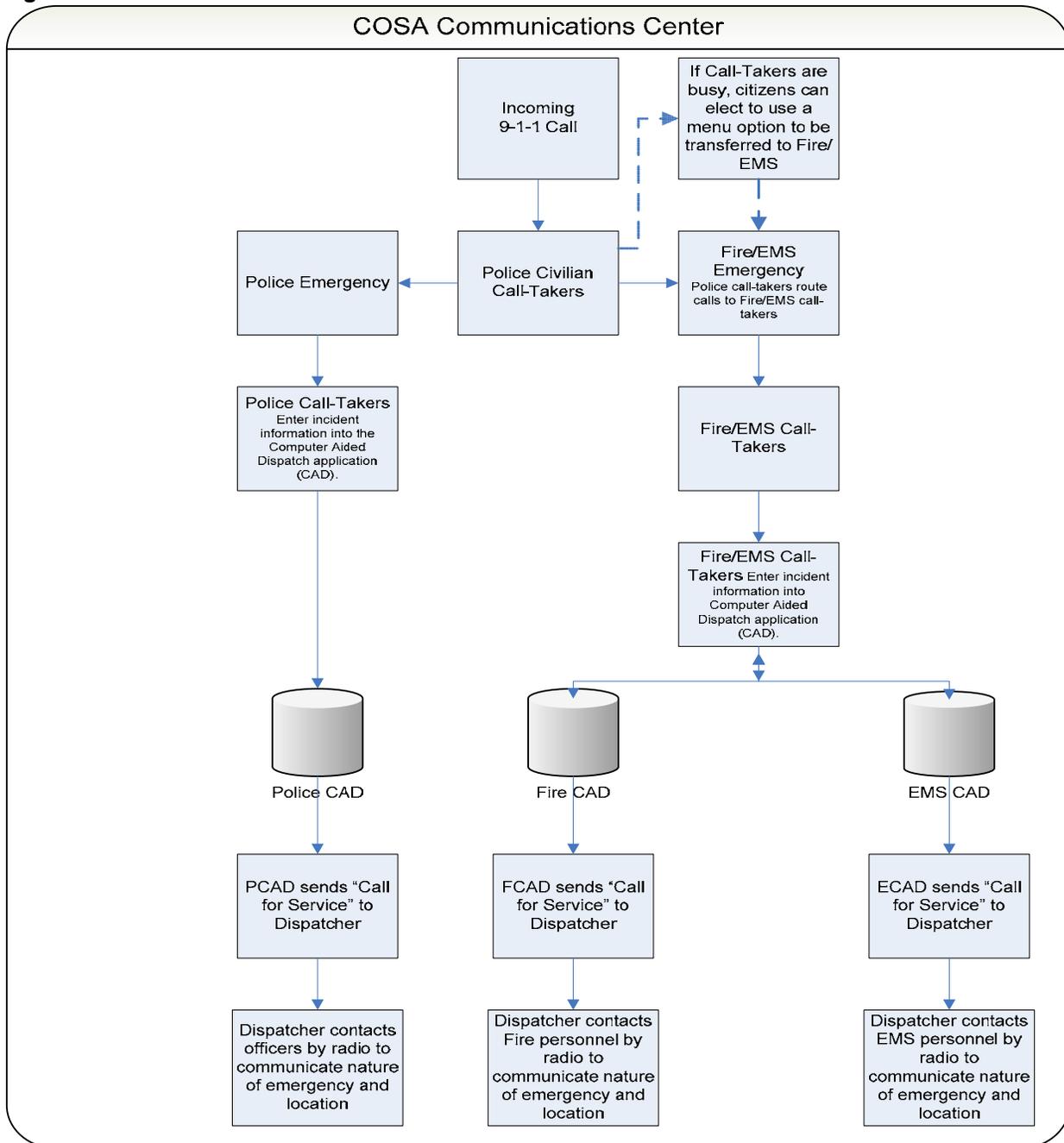
For San Antonio's originating 9-1-1 calls, the phone transmits to the local carrier's central office switch of the incumbent phone company (SBC Communications Inc.) not only the caller's voice but also data later used to identify the caller's address and phone number (call data). After its call-routing equipment accesses a database to determine which answering point should get the call, the local carrier forwards the voice and call data. Special equipment installed at the answering point retrieves the address, phone number, and registered name of the calling party. This information, with the caller's voice, is then routed to a Call-taker and displayed on the Call-taker's computer screen. The entire routing process takes place in a very short time, usually a few seconds.

There is a two part process for handling San Antonio's originating 9-1-1 calls. First, 9-1-1 calls are routed and delivered to the Center through local carrier telecommunication networks. Secondly, the Center's Police Department civilian Call-takers answer incoming calls and determine the nature of the emergency. Calls are handled either entirely by Police personnel, or are transferred to the appropriate Fire/EMS Call-taker. Call-takers create a "Request for Service" record in COSA's "Computer Aided Dispatch" System (CAD). Calls are then transferred to Dispatchers, who further assess the nature of a call by gathering more detailed information and determine the most appropriate action to be taken. This may involve providing advice to callers regarding non-emergency matters or dispatching the appropriate resources in

response to the incident and monitoring the status of the mobile Fire/EMS or Police Units. **Figure 2** demonstrates the general process for the handling of 9-1-1 calls at the Center.

The CAD System assists Dispatchers by providing a time and date stamped automated record. The Dispatcher need only enter information on the incident at hand. The calling party's name, phone number and address are automatically populated in the automated record and displayed for all 9-1-1 calls. CAD also identifies the response units in closest proximity to the incident. Currently, the COSA is maintaining three separate CAD Mainframe Systems to track Police, Fire, and EMS incidents.

Figure 2 - Call Flow Overview



Operating Environment

Activities at the Center are carried out in a highly stressful environment. Management and staff are faced with the challenging task of balancing public safety, emergency personnel issues, and resource availability. Conditions that contribute to the stressful nature of the job include the following:

- Staff must deal with people who are in crisis.
- Staff must make decisions quickly concerning life and death matters.
- No matter how much guidance exists, the role requires some degree of judgment.
- Choices by Center staff involve risks to both the public and to the officers.
- The staff must be skillful in communicating well with a caller in order to determine the true nature of the call.
- Often, the caller is in distress or intoxicated, or language barriers are involved.

Police and Fire/EMS Personnel

The Center's operational side is staffed with sworn/uniform and civilian personnel to answer and to dispatch emergency and non-emergency calls. **Figure 3** summarizes the authorized Center positions for 2004.

Figure 3 - Authorized Positions

Communications Center Position/Categories	Total Workforce	Police		Fire/EMS	
		Civilian	Sworn	Civilian	Uniform
Support Staff*	10	9	0	1	0
Expeditor	24	22	2	0	0
Call-Taker	72	53	0	0	19
Dispatcher**	86	53	21	0	12
Shift Supervisor/Officer	15	3	8	0	4
Training Coordinator	1	1	0	0	0
Administrative Sergeant/Executive Officer	2	1	0	0	1
Director/Chief	2	0	1	0	1
Totals	212	142	32	1	37
		82%	18%	3%	97%

Note: *Support Staff for Fire/EMS consists of one radio technician.

*Support Staff for Police consist of administrative assistants, customer services representatives and a case worker.

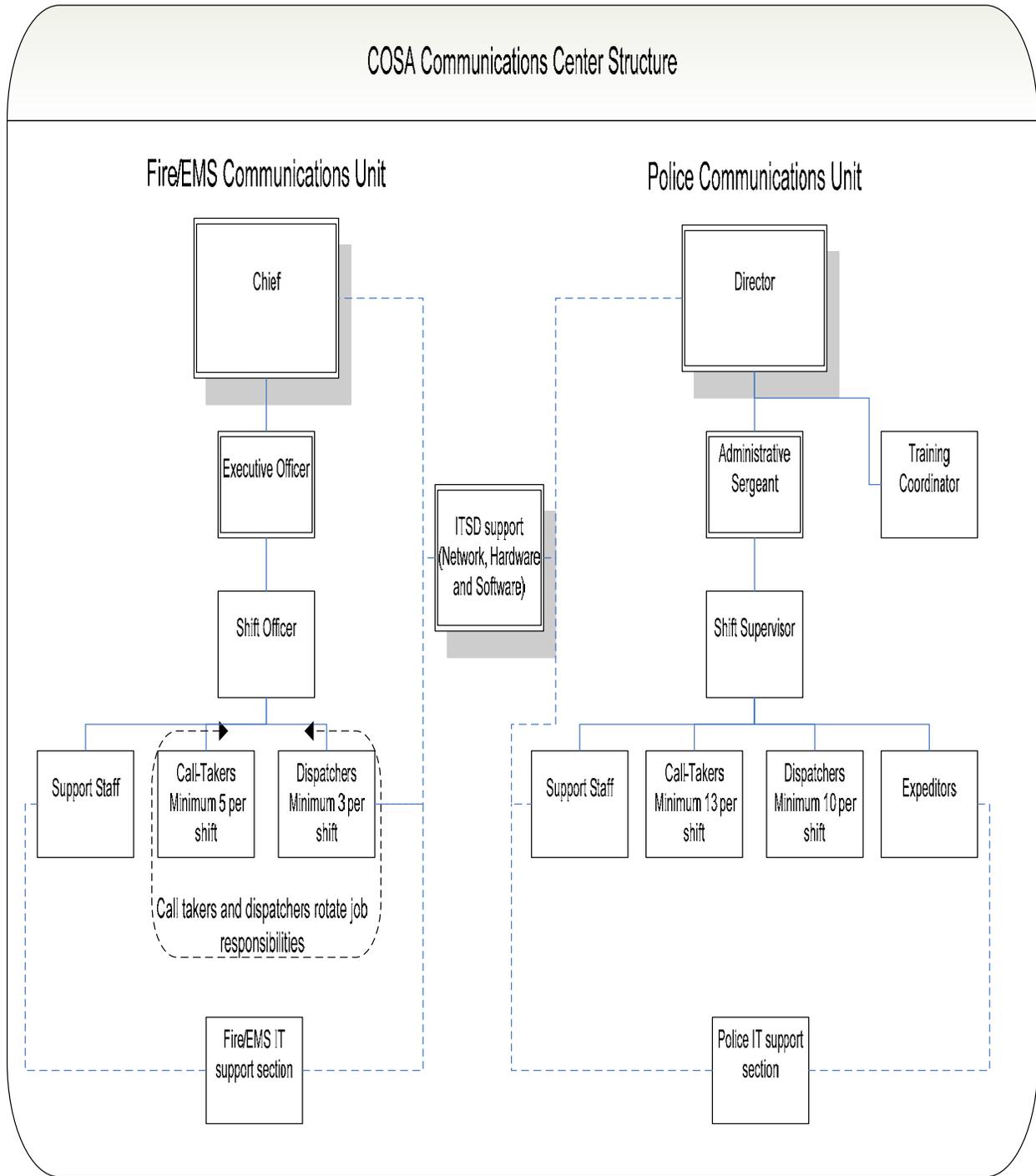
**Fire/EMS personnel perform both call-taking and dispatching duties.

Source: COSA Office of Management and Budget

Communications Center Organizational Structure

The Communication Center is under the command of a Police Lieutenant (Director) and a District Chief. **Figure 4** depicts the alignment of the Center personnel.

Figure 4 - Center Structure



Communications Center Staff Duties

Overall Center performance and daily operations are the responsibility of the Director/Chief. Each Director/Chief is supported by administrative sergeants or an executive officer. **Figure 5** below provides a brief overview of key roles and responsibilities for positions at the Center.

Figure 5 – High-level Job Responsibilities for each Positions

Communications Center Position/Categories Responsibilities	Police	Fire/EMS
Manage Dispatch Center, prepare operational budgets, oversee training, approve/disapprove overtime	Director/Chief	Director/Chief*
Manage of 9-1-1 Operations	Director/Chief	N/A
Develop policy and procedures	Director/Chief	Administrative Sergeant/Executive Officer
Update inventory listing, unit rosters, and standard operating procedures; prepare accreditation paperwork	Administrative Sergeant/Executive Officer	Administrative Sergeant/Executive Officer
Ensure Standard Operating Procedures and Training Manual are current	Training Coordinator	Administrative Sergeant/Executive Officer
Ensure training is completed and conduct training	Training Coordinator	Shift Supervisor/Officer
Monitor computer usage, access to Center, call loads, and abandon call rates	Training Coordinator	Not being performed.
Unit's database administrator	Training Coordinator	Administrative Sergeant/Executive Officer
Prepare pay-sheets, time-off requests and work schedules	Shift Supervisor/Officer	Administrative Sergeant/Executive Officer
Provide direction, guidance, training, and ensure compliance with rules, regulations, and operating procedures	Shift Supervisor/Officer	Shift Supervisor/Officer
Maintain minimum staffing levels	Shift Supervisor/Officer	Administrative Sergeant/Executive Officer
Determine proper response to all types of service calls and dispatch emergency units.	Dispatcher	Dispatcher
Answer all incoming calls and request for Police, Fire and EMS and gather information from the caller	Call-Taker	Call-Taker
Handle police reports over the phone	Expeditor	N/A

*Note: There are no documented roles and responsibilities for the Fire/EMS District Chief of Communications. Responsibilities were determined through discussion with the District Chief of Communications.

Objective

The objectives of the audit were to determine the adequacy and effectiveness of the internal controls environment, and the risk management process related to the 9-1-1 Center's operation. This included reviewing the organizational structure, resources, dispatching systems, physical security and compliance with policies and procedures.

Scope

The scope of this audit included reviewing the 9-1-1 Center "delivery and support" processes for ensuring effective and efficient dispatching including:

- Workforce planning and training
- Managing facilities (physical and environmental security)
- Continuity planning and back-up facilities
- Management reporting
- Operational procedures and guidelines
- Network and dispatching applications

This review covered the period January 2004 through December 2004.

Criteria

In conducting the audit, the existing Center operations and processes were compared with other cities and recognized industry standards. It is important to note in reviewing the results of this audit that the 9-1-1 Center has not historically used these or other standards to measure control performance related to dispatching processes.

Research of similar business processes for other cities provided substantial information about recent trends in organization, personnel and management practices. The cities with innovations in emergency services included Chicago, Houston, Dallas, and Austin. The audit staff also used criteria based on Control Objectives for Information and related Technology (CobiT), and the Sobel Capability Maturity Model.

The IT Governance Institute (www.itgi.org) developed CobiT as an open standard using non-technical language to help focus information technology in support of overall business goals. CobiT was selected as the criteria for measurement because it is aimed at addressing business objectives and is easy to understand. CobiT continues to gain acceptance internationally and is evolving due to support from the IT Governance Institute.

Methodology

The review was performed in compliance with generally accepted government auditing standards (GAGAS) issued by the U.S. Government Accountability Office (GAO) and other criteria to conform with the Institute of Internal Auditors' "International Standards for the Professional Practice of Internal Auditing."

Government Auditing Standards requires a peer review of auditing practices at least once every three years by reviewers independent of the audit organization. The City Internal Audit Department (CIAD) had its last external peer review in July 2001. CIAD is scheduled for the next peer review in August 2005.

This review was designed to provide reasonable, but not absolute, assurance regarding the adequacy of internal controls. This audit included a study of internal controls that are considered relevant in assessing risk and the control environment as established by Management. The study was based on discussion and

review of selected documentation, and site visits, and as such would not necessarily reveal all internal control weaknesses that exist.

The audit methodology consisted of collecting information and documentation, performing selected tests and other procedures, analyzing and evaluating the results of the tests, and conducting interviews with Police, Fire/EMS and ITSD personnel.

The only strategic planning document available to gain an understanding of the vision contemplated for emergency services was the San Antonio Police Department Vision 2001 Five Year Strategic Plan which was issued on April 4, 1996. This report, pages 12 and 91, calls for the Police Department to identify opportunities which maximize the number of police officers performing law enforcement duties. The intention was to use civilians in place of sworn personnel where appropriate.

Conclusion

This report consists of issues related to organizational and internal controls. The organizational issues result from a single systemic problem, namely inconsistency between Police and Fire/EMS. Inconsistency flowed throughout all aspects of the Center including:

- Management cultures and styles
- Policies and procedures
- Use of civilians, sworn and uniform personnel
- Pay among civilians and sworn/uniform personnel
- Formal training practices
- Performance management metrics
- Addressing issues such as high abandon call rate

A review of all the organizational issues led the audit team to one umbrella recommendation; The implementation of a single organizational structure with authority over all emergency response services to ensure consistent services. This includes implementing a common set of policies and procedures, consistent pay for similar job functions, and equivalent training for Call-Takers and Dispatchers.

In addition, internal control issues existed at the Center related to a lack of system redundancy, an inadequate back-up facility, excessive physical and logical access, and lack of identification of system requirements related to the Automatic Vehicle Locations (AVL) software.

An overall conclusion was drawn on the completeness and practicality of the existing internal controls for ensuring the confidentiality, integrity and availability of the dispatching operation for both Police and Fire/EMS. The conclusion was formed through performing generally accepted audit procedures and was based on a Risk Management Capability Matrix. The risk matrix provides information on characteristics of development stages for strategy capabilities, process capabilities, people capabilities, technology capabilities, and information capabilities. For this project, the assessment was based specifically on process capabilities. A more detailed description of the process capability stages has been included in **Figure 6**.

It was determined that the process capability stage for the 9-1-1 Center operated by the Police Department was "Repeatable". At the "Repeatable" stage, procedures were documented but were not regularly updated to reflect changing business needs. Procedures may have to be updated more than once a year to reflect the current dispatching operations. Preventive controls were employed throughout the process; however, detective controls need to be improved. Programmers currently have unrestricted access to the 9-1-1 application and the number of individuals with access to the Center is excessive. Several output performance metrics exist, but a more comprehensive performance management process needs to be developed to assist in monitoring the cost-effectiveness and efficiency of the Center. The Police Management goal should be to strengthen the operational processes to the point where they are "Managed". At the "Managed" stage, procedures and controls are well documented and kept current. Both

preventative and detective controls are employed throughout the process. Many performance metrics are used, with a blend of output, outcome, cost-effectiveness and efficiency performance measurements to monitor the dispatching services.

It was determined that the process capability stage for the 9-1-1 Center operated by the Fire/EMS Department was “Ad Hoc”. At the “Ad Hoc” stage, procedures do not formally exist. Fire/EMS uses a “memo” book as its operating procedures and several items in the ‘memo book’ were last updated in 1998. Preventive and detective controls are employed throughout the process; however, segregation of duties issues with ITSD programmers and excessive physical access to the dispatching area has gone unnoticed. No performance measurement metrics exists to plan and deploy resources, evaluate the Center dispatching operation, and identify system problems. Fire/EMS Management goal should be to strengthen the operational processes to the point where they are “Repeatable”. At the “Repeatable” stage, procedures are formally documented. Detective and preventative controls are used to correct security issues or unwanted situations. Performance metrics are developed to allow Management to evaluate the level of services it provides.

Figure 6 – Process Capability Maturity Stages

<u>Stage</u>	<u>Procedures</u>	<u>Controls and Process Improvements</u>	<u>Metrics*</u>
Ad Hoc	<ul style="list-style-type: none"> No formal <i>procedures</i> exist. 	<ul style="list-style-type: none"> <i>Controls</i> are either non-existent, or are primarily reactionary after a “surprise” within the company. 	<ul style="list-style-type: none"> There are no <i>metrics</i> or monitoring of performance.
Repeatable	<ul style="list-style-type: none"> Some standard <i>procedures</i> exist. 	<ul style="list-style-type: none"> Detective <i>controls</i> are relied upon throughout the company. 	<ul style="list-style-type: none"> Few performance <i>metrics</i> exist, thus there is infrequent monitoring of performance.
Defined	<ul style="list-style-type: none"> <i>Procedures</i> are well documented, but are not regularly updated to reflect changing business needs. 	<ul style="list-style-type: none"> Both preventive and detective <i>controls</i> are employed throughout the company. 	<ul style="list-style-type: none"> Some <i>metrics</i> are used, but monitoring of performance is primarily manual.
Managed	<ul style="list-style-type: none"> <i>Procedures</i> and <i>controls</i> are well documented and kept current. 	<ul style="list-style-type: none"> Best practices and benchmarking are used to <i>improve</i> process in certain areas of the company. 	<ul style="list-style-type: none"> Many <i>metrics</i> are used, with a blend of automated and manual monitoring of performance.
Optimized	<ul style="list-style-type: none"> <i>Processes</i> and <i>controls</i> are continuously reviewed and <i>improved</i>. 	<ul style="list-style-type: none"> Extensive use of best practices and benchmarking throughout the company helps to continuously <i>improve</i> processes. 	<ul style="list-style-type: none"> Comprehensive, defined performance <i>metrics</i> exist, with extensive automated monitoring of performance employed.

*Metrics provide a means for measuring how well a control or process is performing.

*Source: 2004 Auditor’s Risk Management Guide, CCH Incorporated, 2004. Paul J. Sobel, CPA, CIA

Observations, Recommendations, and Responses

The following observations, recommendations and Management responses were made as a result of work procedures performed. Since many recommendations pertain to issues that are critically interrelated, they have been categorized into two broad groups: Organizational Issues, and Internal Control Issues.

Organizational Issues

1.1 – Organizational Structure Effectiveness

Conditions

The Center's organization, personnel and management processes have been the same for many years. Essentially, two departments are performing parallel activities utilizing separate staff, hardware, software and other resources. There is no single centralized day-to-day authority over emergency response services at the Center. **Figure 2** on page 7 and **Figure 4** on page 9 illustrate at a high level the parallel organization and management within the two departments. **Figure 5** on page 10 compares the job responsibilities for key Center staff which indicate areas of duplication.

The Police Section of the Center does have formal policies and procedures which were keep up-to-date with minor exceptions. There are no comprehensive formal policies and procedures that provide a frame of reference for decisions for Fire/EMS personnel at the Center.

The Center is staffed with approximately two hundred and twelve City employees as shown in **Figure 3**, page 8. Of these, 82 percent are assigned to the Police Department and 18 percent are assigned to the Fire/EMS Department. About 67 percent are civilian employees, and the remainder are sworn/uniform personnel. The Fire Department uses only uniform personnel for dispatching. The Police Department utilizes civilian staff primary as Call-takers and Dispatchers. Sworn personnel are assigned to management/administration and dispatching duties.

In evaluating the personnel at the Center, compensation was compared. **Appendix A-2** illustrates for calendar year 2004 the disparity between civilian and sworn/uniform staff performing dispatching duties. Average compensation for civilians ranged from \$28,000 to \$30,000 in 2004. The average compensation for Police Dispatchers was up to \$60,000 and for Fire/EMS Dispatchers was up to \$90,000.

Neither the Police nor Fire Departments provided information to support or explain the need to use uniquely trained and highly compensated public safety personnel for duties also performed by less trained and compensated civilians.

The level of training for Center staff (Police, Fire and EMS) is inconsistent. Police Call-takers and Dispatchers are provided with formal classroom and on-the job training. They are provided with 40 hours of telecommunicator training as determined by the Texas Commission on Law Enforcement. However, the Fire/EMS Department does not have a formal training program that incorporates classroom and on-the-job training for Dispatchers and Call-takers.

The Fire personnel are uniquely trained for public safety requirements but they are lacking formal training as telecommunicators. According to Fire/EMS Center Management, Emergency Medical Dispatch (EMD) training was provided to the Fire/EMS personnel in 1996. EMD training certifications received then were valid for two years. Certifications were not renewed for the following reasons:

- The COSA Medical Doctor disagreed with pre-arrival instructions provided during this training.
- Lack of resources to replace dispatchers while in training.
- COSA Legal Department confirmed that training was not mandatory for Fire/EMS Dispatchers.
- All Fire/EMS Center personnel are required to be certified as Emergency Medical Technicians (EMT) or paramedics which were considered adequate.

In May 2005, after audit fieldwork was completed, EMD training was provided to 17 of the 37 EMS/Fire personnel assigned to the Center.

There was no evidence of a formal plan for measuring, tracking, monitoring and reporting on emergency service activities by either department. Therefore, it appears that resource requirement decisions are made without proper information. Police Department Management does use some output performance measurements; however, metrics do not include effectiveness and efficiency measurements. Fire/EMS Department Management does not use performance metrics to plan and deploy resources, evaluate Center services, or identify system problems.

A common performance metric is the abandon call rate. This is defined as the percentage of calls abandoned relative to the total calls received. An abandoned call is one received by the Center but dropped by the caller before reaching a Call-taker or information source. In 2004, the City of San Antonio had about 1.1 million 9-1-1 emergency calls of which approximately 20 percent were abandon (Source: COSA Police Center Management Monthly Reports). The level of abandoned calls appeared to increase substantially in 2004 over prior years, as illustrated in **Appendix A-3**. Center Management indicated that that new equipment may be providing better abandoned call statistics over prior years. The new system activated in early 2004 is believed to provide more reliable data on call activity.

Criteria

The conditions noted above were considered issues/exceptions. As such, they were compared with other cities and recognized industry standards, including the following.

Various emergency services consolidation models have been available since 1995 for benchmarking with San Antonio. For this audit, **Appendix A-4** was developed to compare selected data for the City with Austin and Dallas. **Appendix A-5** compares levels of civilianization between major metropolitan cities. **Appendix B** is a compendium of various reports available on emergency service innovations and reviews. **Appendix C** provides comparative benefit data presented in the June 2005 Houston Emergency Center Performance Review, including information on San Antonio. **Appendix D** shows the Houston Emergency Center's fiscal year 2006 budget proposal which includes a department long term goal of civilization. **Appendix E** is the City of Austin fiscal year 2005-2006 proposed budget showing that the Police 9-1-1 operations is staffed by civilians, but not the Fire Section. **Appendix F** and **Appendix G** provide an organizational chart of the City of Chicago and general information related to the City of Chicago's Office of Emergency Management and Communications. **Appendix H** is the City of San Francisco fiscal year 2004-2005 Mayor's Budget which includes a description of services provided by primarily civilian dispatching personnel.

The following Control Objectives for Information and related Technology (CobiT) was also used to determine the areas of documented process, performance measures, and training:

CobiT Control Objective: Planning & Organization 6.2 - Management's Responsibility for Policies specifies that management assume full responsibility for formulating, developing, documenting, promulgating and controlling polices covering general aims and directives.

CobiT Control Objective: Delivery & Support 3.5 - Proactive Performance Management specifies that the performance management process should include forecasting capability to enable problems to be corrected before they affect system performance.

CobiT Control Objective: Planning & Organization 7.4 - Personnel Training specifies that Management should ensure that employees are provided with training upon hiring and with on-going training.

Cause

For many years, the City has operated the Center emphasizing that differences exist between Police and Fire/EMS public safety procedures. It does not appear that either Department or City Management evaluated the common issues, including the emergence of customer contact/telecommunications innovations since the late 1990's. Generally, a basic City-wide strategic planning process may have alerted Management and the City Council about opportunities for efficiencies and reduced costs.

Had appropriate Police and Fire Department performance metrics and reporting occurred, the City of San Antonio may have identified areas for cost savings and service improvements. Through this process, City Staff would have become aware of the extensive information available on benchmarking and best practices. In addition, if the City had a formal City-wide information technology strategic plan, this also may have revealed cost savings related to maintenance costs associated with the three mainframe databases for dispatching.

To this point, the City has not adopted any information technology standards.

Another contributing cause is the competitive culture between these Departments that has not promoted collaboration on emergency service improvements.

Effect

The current Center structure duplicates costs/resources for hardware and software, see **Figure 4**. There is also redundancy in personnel and financial functions see **Figure 5**.

In addition, separate Management structures create the potential for:

- Service delivery problems and gaps in responsibility for the overall 9-1-1 process.
- Disconnect between agencies.
- Increase in the probability that systemic errors go undetected.
- Decreased likelihood of implementing substantial long-term solutions to difficult and complex service delivery problems.

Recommendations

The City Manager should consider implementing a single organizational structure for the Center that:

- Clearly establishes a single point of responsibility for the delivery of all 9-1-1 and emergency communications services.
- Maintains formal policies and procedures for emergency call services.
- Civilianize call center and dispatching functions.
- Compensates personnel equally for similar functions.
- Train Call-takers to handle both Police and Fire/EMS calls
- Establishes comprehensive performance metrics.
- Utilizes a single dispatching system.

The City should create a Department of Emergency Communications which would report to the City Executive Team at the same level as the Police and Fire Departments. It may be possible to consolidate the 3-1-1 customer call services with this Department. The Director would have overall responsibility for the delivery of emergency communications and 9-1-1 services. The Director would have complete operational control and autonomy from the agencies serviced. This structure creates a delineation of responsibility between the delivery of emergency communications and 9-1-1 services and operational response. It requires clear and concise service level agreements between emergency communications and the public safety agencies, and allows for a greater degree of independent responsibility.

The City should require a configuration where all Police and Fire/EMS Call-Takers and Dispatchers are trained equally and are capable of handling any type of reported emergency within the City. Call-Takers and Dispatchers should receive the state mandated 40-hours of classroom training and successfully finish

a departmental field training course. This will require a higher level of initial and on-going Call-taker and Dispatcher training to support emergency medical dispatching. It should reduce the risk and delay associated with internal transfers between the Police and Fire/EMS Departments, and would help to alleviate the increasing demand for dispatching personnel.

In implementing a single organizational structure, the City Manager should correct the disparity in pay and benefits between civilian, Police and Fire Department Center personnel. This can be accomplished by creating a single, civilian pay and benefit structure that covers both Police and Fire emergency communications personnel. There is no significant difference in the actual work or working conditions that warrant the current disparity.

To meet the growing emergency and non-emergency call volume demand and address the high call abandon rate, the Center should hire additional full-time and part-time Call-takers. An innovative alternative is to use the City of San Antonio's 3-1-1 call center to answer non-emergency calls. This would reduce the burden on the Center. Dallas and Austin have integrated their 3-1-1 and non-emergency call receipt systems, to the extent that one integrated pool of staff answers both numbers. The Center should move towards integration of all emergency call receipt and dispatch services (Police, Fire, EMS), using common systems. Currently, ITSD has a Fire/EMS web-based CAD System in the testing phase. This application can be modified to include Police dispatching functionality in order to create one central dispatching application. This would allow for single entry of incident records which would be useful for incidents where both Police and Fire/EMS are needed.

These recommendations are consistent with trends in Chicago, Houston, Dallas, and Austin.

Management Response

Responsible Party for Implementation

Implementation Date

Internal Control Issues

The City and ITSD have not formally adopted a framework to be used to define and assess internal controls. Two control frameworks that have emerged and have been adopted by a majority of companies are CobiT (Control Objectives for Information and related Technology) and COSO (Committee of Sponsoring Organizations of the Treadway Commission). COSO is a framework used primarily for internal controls related to financial processes. CobiT is an Information Technology (IT) framework. In addition, IT process frameworks such as ITIL (IT Infrastructure Library) and CMMi (Capability Maturity Model Integrated) can also assist organizations in effectively controlling risk related to internal controls.

In addition, several City Departments have their own IT support groups which increases the risk related to the City's security and controls.

A strong and enforceable control framework would have identified the following issues.

2. 1 - Lack of Redundancy for the Computer Aided Dispatch (CAD) Application and the Network

Condition

The current CAD application, mainframe system and network structure exposes the Center to the risk of single point of failure. The CAD system is used by Call-Takers and Dispatchers to process 9-1-1 calls and track the status of resources and units within the City. This system is not designed with redundancy and high system availability mechanisms to mitigate potential failures. The mainframe sessions/screens and network connections between ITSD and the CAD application have encountered several problems in the past, forcing the Center's staff to operate in a manual mode. Operating in manual mode is a very time consuming process and increases the risk that 9-1-1 calls may not be answered and/or handled in an efficient manner.

Criteria

For the condition described above, the applicable standard is:

CobiT Control Objective: Planning & Organization 3.3 - Technological Infrastructure Contingency specifies that the technological infrastructure plan should be assessed systematically for contingency aspects (i.e. redundancy, resilience, adequacy and evolutionary capability of the infrastructure).

Cause

The Police, Fire and ITSD Departments' Management have not prioritized the critical importance of a redundant system. This is due in part to the lack of City-wide strategic planning and risk management processes. Also, refer to Internal Control Issues section on top of this page for additional information related to control frameworks.

Effect

The 9-1-1 process is vulnerable to failure due to the malfunction or destruction of the CAD application, Mainframe system and/or network. Loss of the connection to the CAD System requires the Center staff to operate in a manual mode. Essentially, Call-takers and Dispatchers would dispatch emergency calls using paper and the radio system. Service delivery would be significantly impaired by this time consuming process. In addition, the dispatching process would be negatively impacted because the agencies would be assigned using inadequate data.

Furthermore, once the Mainframe System becomes available, staff must take the time to manually input all the cases into the CAD application.

Recommendation

Risk or consequence of failure can be mitigated by creating a redundant high availability CAD System.

ITSD is currently working on a web-based CAD application for Fire/EMS. ITSD Management should assign resources to complete the testing of this system. In addition, ITSD personnel should discuss with Police Center Management the risk and possible loss of functionality associated with developing a web-based CAD System for the Police.

The web-based CAD System should be implemented as a redundant high availability system which will allow the staff to continue taking and dispatching calls even when the mainframe session or network connection is lost.

Management Response

Responsible Party for Implementation

Implementation Date

2.2 - Inadequate Alternate Back-up Facility

Condition

A back-up facility is located at Transguide, which is operated by the Texas Department of Transportation (TxDOT). However, it lacks the capacity to handle the current level of emergency services workload in the event of a disruption to normal Center operations. While it is capable of providing minimal telephone receipt and radio functions, it is not equipped to meet the current capacity of emergency and non-emergency calls. The current equipment at Transguide does not support the use of the Automatic Vehicle Location (AVL) software, the Automatic Call Distribution software and address name and location functionality (ANI/ALI). ANI/ALI information is used by Call-takers to call citizens back if they hang up the phone before a Call-taker answers.

In the event of a complete shut-down of the Center, where the computer system is inoperable, all Police and Fire/EMS operations would have to be handled manually. There is no off-site backup facility for the CAD System. Manual processing of 9-1-1 calls is both time-consuming and difficult to manage for an extended period. During manual operations it is likely that service levels would dramatically decrease and delays would be inevitable.

Criteria

For the condition described above, the applicable standard is:

CobiT Control Objective: Delivery & Support 4.9 - User Department Alternative Processing Back-up Procedures specifies that the continuity methodology should ensure that the user department establishes alternative processing procedures that may be used until the IT function is able to fully restore its services after a disaster or an event.

Cause

Police, Fire/EMS and ITSD Management have not created a comprehensive disaster recovery/business continuity plan for emergency services nor established a back-up facility capable of handling the current 9-1-1 workload.

Effect

The present lack of an adequate back-up facility means that the Center may not be able to maintain the current service levels if the Center is down for an extended period. This could create a serious problem for citizens in need of Police, Fire and/or EMS service.

Recommendation

Police, Fire/EMS and ITSD Management should implement a plan to locate a fully functional enhanced alternate 9-1-1 Center that is capable of handling sustained emergency Center operations. A potential long-term solution is to establish a back-up/training center at the future Emergency Operations Centre (EOC) facility.

In addition, Police, Fire/EMS and ITSD Management should formally document its disaster recovery and business continuity plans for mission-critical emergency applications. This document should describe how the City will respond to a disruption of Center processes to ensure critical emergency functions continue without unacceptable delay or change. This includes documenting and testing recovery procedures related to off-site storage of backup data.

Management Response

Responsible Party for Implementation

Implementation Date

2.3 - Excessive Physical Access to the Center

Condition

There are over 1,100 individuals with badge access to the dispatching area of the Center facilities. Access includes individuals from Fire/EMS, Police, COSA and vendors. There is no formal periodic review process of individuals with badge access to the dispatching areas.

Facility security is controlled and monitored by City Police. Day to day access to the Center is controlled by a series of doors and electronically controlled card-key devices. However, security can be comprised by not restricting access to authorized Center personnel only.

Criteria

For the condition described above, the applicable standard is:

CobiT Control Objective: Delivery and Support 12.1 - Physical security specifies that access should be restricted to individuals who have been authorized to gain such access.

Cause

The Police Chief and Fire Chief have not implemented a policy to limit users' access to the Center to only those individuals necessary. There is no formal process to review the listing of individuals with access to the Center nor is there a process to review if access is still appropriate for each person.

Effect

The Center is one of the most important public safety functions that the City performs for its citizens. Excessive access to the Center increases the risk of an attack against computers, communications systems, support systems and personnel from individuals who no longer need access and vendors whose employees are no longer employed with the vendor. An attack would compromise the integrity and confidentiality of system resources, and could make them unavailable to authorized users. This is an unnecessary risk that increases the possibility of Center resources being damaged, misappropriated or information being mishandled.

Recommendation

The Police Chief and Fire Chief should take immediate steps to ensure that Center's physical security risks are reduced to a more appropriate level. Specifically, the Departments should restrict all access to the Center and its resources to those with a demonstrated need for access. A policy of need-to-know as it relates to access to the Center should be implemented. Need-to-know is an administrative action given to individuals requiring access to an area in order to perform assigned duties.

In addition, Police and Fire Management should implement a process to periodically, at least monthly, review the list of individuals with access to the Center to determine if access is still appropriate. Vendors should be required to obtain a vendor badge before accessing the Center. Exceptions can be made for vendors who require access the Center on a weekly basis. Police and Fire Management should deactivate access for individuals who have not accessed the Center for more than one month.

Management Response

Responsible Party for Implementation

Implementation Date

2.4 – Hardware Deficiency related to the Automatic Vehicle Locations (AVL) Software

Condition

The 1996 Police Department Five-Year Strategic Plan, Vision 2001, proposed significant technological enhancements to improve customer service and meet higher efficiency demands placed on public safety operations. Subsequently named the Public Safety Integrated Technology (PSIT) System, the technology enhancement initiative contains over ten improvement projects such as the Field Entry Reporting System (FERS), Electronic Document Management System, Automated Mugshot System, and AVL software. The City contracted with Open Systems Group, Inc. (OSG) for programming services and software development. However, OSG maintained copyrights of all programs, thus preventing the City from seeking another contractor for this work. The Police Department maintained the ultimate responsibility for testing all systems before they were placed in operation.

The AVL software was moved into production in February 2002; the usefulness and reliability of the software were impaired due to defects that have not been corrected. The AVL System was intended to provide a graphic display of police units on a mapping screen for use by Dispatchers in tracking and locating patrol units. Currently, the AVL System is not being used primarily because Dispatchers are experiencing frequent rebooting of their computers. This issue has created a lack of confidence in the AVL software, and Center personnel have stopped using the product. According to the Police Department Management Information System (MIS) group, the problems are currently being investigated and solutions tested. The MIS group is organizationally within the Police Department and not the City's ITSD Department.

Subsequent to completion of audit fieldwork, the Police Department MIS group confirmed that the frequent rebooting of the Center's computers was due to inadequate hardware at the Center. The Center's computers did not contain the requirements necessary for the proper operation of the AVL software.

Criteria

For the condition described above, the applicable standard is:

CobiT Control Objective: Acquisition & Implementation 2.15 Application software testing specifies that application testing, integration testing, system testing, and load and stress testing should be performed according to the project test plan and established testing standards before it is approved by the user. Adequate measures should be conducted to prevent disclosure of sensitive information used during testing.

Cause

The software was not adequately tested prior to implementation using computers and networks similar to those at the Center. In addition, proper identification of system requirements and current resources was not performed.

Effect

Software failures prevent the Center from obtaining correct and timely vehicle status information increasing the risk to emergency personnel. In addition, the City has not received the full benefit of its investment in the AVL software developed by a vendor.

Recommendation

The City Manager should require Police and Fire IT functions to involve ITSD in application development and IT purchases. This will enable Police and Fire Department Management to take advantage of the resources that ITSD has to offer and reduce the reliance on outside contractors. As the City restructures under the leadership and direction of the new City Chief Information Officer (CIO) and Chief Technology Officer (CTO), service levels and quality are expected to improve, and processes are expected to be standardized and formalized to align with best practices (e.g. ITIL).

A detailed review of the AVL software issues relating to system reboots should be performed by the Police, Fire and ITSD Department Management.

Acceptance testing should be conducted by the end-user before the AVL software is placed in operation to ensure that it will perform as design.

Management Response

Responsible Party for Implementation

Implementation Date

2.5 – Unrestricted Access to the 9-1-1 CAD Application and Data by programmers

Condition

Seven ITSD system programmers who work on Police, Fire and EMS CAD Systems have unrestricted and unlogged access to the production CAD application and data. This access allows programmers the ability to change any information on the 9-1-1 CAD applications without authorization or detection.

Detection of changes to the CAD Systems is further complicated by the lack of controls for managing change. No formal documentation of changes made to the mainframe production system exists.

Criteria

For the condition described above, the applicable standard is:

CobiT Control Objective: Acquisition & Implementation 5.7 - Testing of Changes specifies that Management should ensure that changes are tested in accordance with the impact and resource assessment in a separate test environment by an independent test group before use in the regular operational environment begins.

CobiT Control Objective: Planning & Organization 4.10 - Segregation of Duties specifies that senior Management should implement a division of roles and responsibilities which should exclude the possibility for a single individual to subvert a critical process. Management should also make sure that personnel are performing only those duties stipulated for their respective jobs and positions.

Cause

ITSD Management has not created a robust testing environment to allow programmers to simulate or re-create issues that the Center personnel may encounter in production. The lack of a true test environment has led to programmers having unrestricted access to the CAD applications. This type of access allows programmers the ability to make changes to CAD application data. Changes to the CAD application data and code are not formally documented because there is no City-wide formal change management procedures requiring documentation of application changes.

Effect

The City's overall system of internal controls is weakened because of a lack of proper segregation of duties. Allowing programmers to have unrestricted access to the production CAD applications could result in unauthorized changes to programs and data. Management of application changes is a fundamental process that, if not done well, can cause damage to the entire emergency operation.

Recommendation

ITSD should remove programmer's unrestricted access to the CAD application and data. Programmer's activities should be restricted to testing programs and files, and all program changes should be formally tested and approved by the end-user before they are moved to production.

Given the risk associated with 9-1-1 dispatching, it is inherent that ITSD implement a change management process to document and control changes to production systems. A change management process would add the following controls:

- Appropriate authorizations
- Separation of duties
- Supervision
- Detection of unauthorized changes

Implementation of a formal change management process has previously been recommended in the Application Change Control audit performed in January 2005.

Management Response

Responsible Party for Implementation

Implementation Date

Appendix A-1

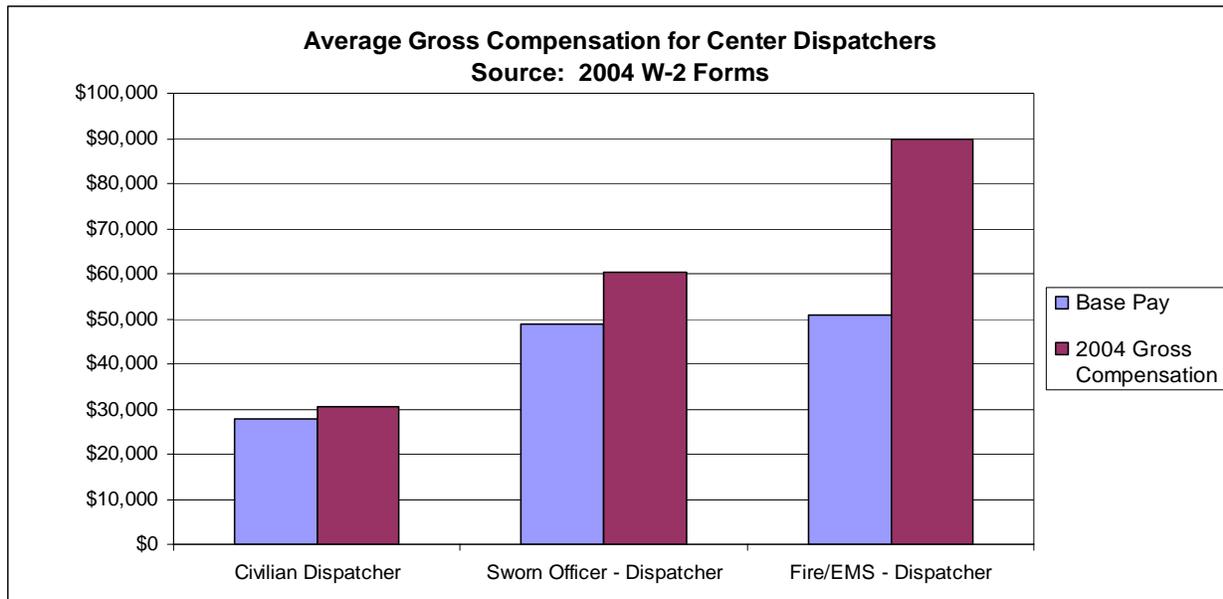
**COSA Communications Center
Potential Savings From Use Of Civilians**

	New Civilian Positions	Eliminated Sworn/Uniform Positions	Net Gain or Lost Positions	Cost of Sworn/Uniform Positions	Cost of New Civilian Positions	Savings From Civilizations of Sworn/Uniform Positions
Positions						
Department Director	1	0	1	\$0	\$114,601 *	(\$114,601)
Chief/Lieutenant	0	2	(2)	\$247,400	\$0	\$247,400
Sworn (Dispatchers)	21	21	(0)	\$1,714,400	\$883,000	\$831,400
Sergeant	4	8	(4)	\$863,800	\$188,000	\$675,800
Police Detective/Cadet	2	2	(0)	\$132,700	\$84,000	\$48,700
Uniform Lieutenant	3	5	(2)	\$510,900	\$141,000	\$369,900
Uniform Dispatchers	31	31	(0)	\$2,832,100	\$1,303,800	\$1,528,300
Total	62	69	(7)	\$6,301,300	\$2,714,400	\$3,586,900

***Note:** Cost of Sworn/Uniform positions includes (salary, social security, retirement benefits and other benefit costs), excluding overtime. Benefit cost were based on fiscal year 2005-2006 data from the COSA SAP System. The estimated Department Director salary was based on the average base salary for a governmental Communications Director position in the San Antonio area.

Source: Average Communications Director base salary was obtained from salary wizard.com. All other salary data was obtained from the COSA SAP System.

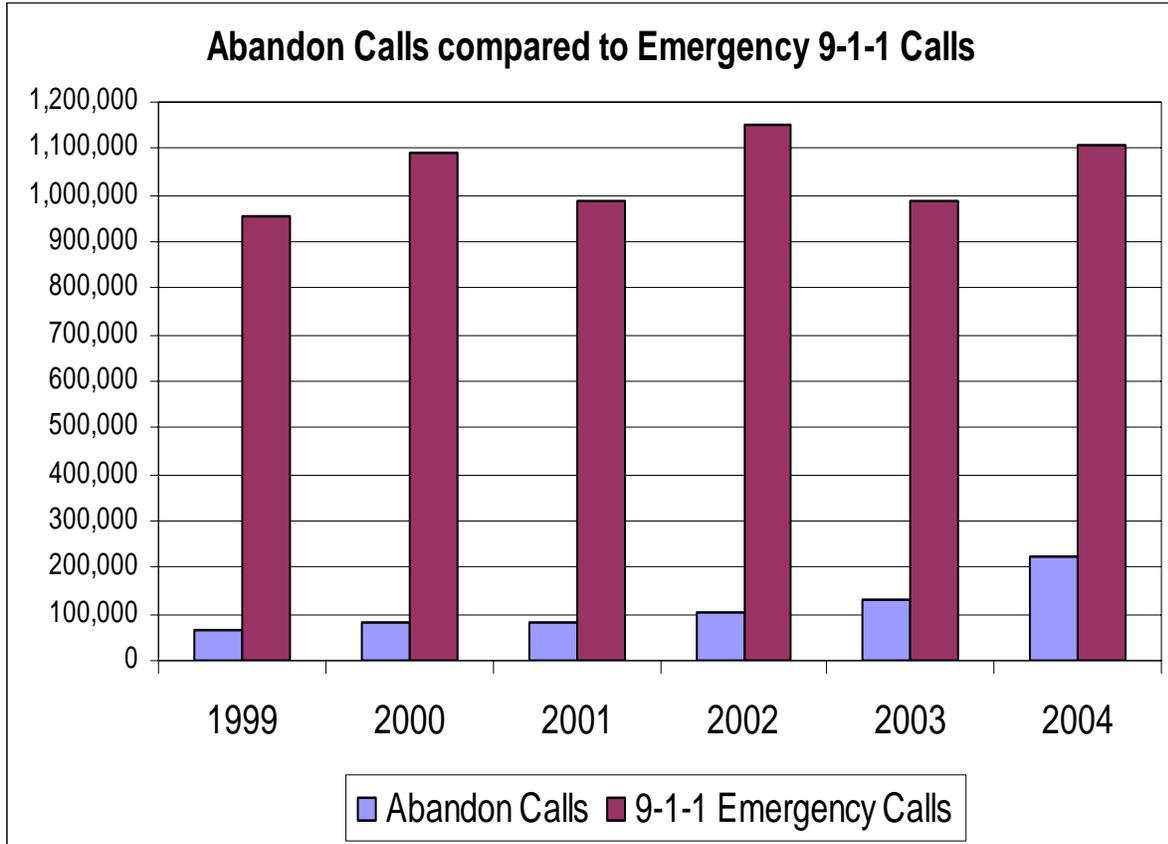
Appendix A-2



***Note:** 2004 gross compensation amount includes salary, overtime and other benefit costs.

Source: SAP System

Appendix A-3



Source: Data provided by Police Center Management

Appendix A-4

Communications Center Statistics Comparisons			
	City of San Antonio Police Department	City of Austin Police Department	City of Dallas Police Department
Population	1,282,800	678,769	1,214,800
9-1-1 Emergency Calls	1,107,038	708,454	1,598,717
Dispatchers	21 sworn, 53 civilian	55 civilian	50 civilian
Call-Takers	53	85 FTE, 30 PTE*	90*
Abandon Rate	20.3%	5.0%	7.9%
Calls per Call-Taker per year	21,289	7,084	17,763

***Note:** Dallas has fully integrated the 911 and 311 call receipt systems. Call-Takers answer both 911 and 311 calls. The Austin 3-1-1 call center will start taking non-emergency calls in 2006.

Source: Data provided by San Antonio, Austin, and Dallas Communications Center Management.

Appendix A-5

Current Or Planned Civilianization Comparison Between Major Metropolitan Cities									
Rank (1)	City Names	Consolidated Organization		9-1-1 Call-Takers		Police Dispatchers		Fire/EMS Dispatchers	
		911/ 311	Police/ Fire/ EMS	Civilian	Sworn/ Uniform	Civilian	Sworn/ Uniform	Civilian	Sworn/ Uniform
1	New York City, NY (2)	-	-	-	-	-	-	-	-
2	City of Los Angeles, CA (2)	-	-	-	-	-	-	-	-
3	City of Chicago, IL	Yes	Yes	Yes	No	Yes (3)	No	Yes	No
4	City of Houston, TX	No	No	Yes	No	Yes (4)	No	No	Yes (4)
5	City of Philadelphia, PA	No	No	Yes	No	No	Yes	No	Yes
6	City of Phoenix, AZ (2)	-	-	-	-	-	-	-	-
7	City of San Diego, CA	No	No	Yes	No	Yes	No	Yes	No
8	City of Dallas, TX	Yes	No	Yes	No	Yes (5)	No	Yes (5)	No
9	City of San Antonio, TX	No	No	Yes	No	Mixed	Mixed	No	Yes
10	City of Detroit, MI (2)	-	-	-	-	-	-	-	-
11	City of San Jose, CA	No	No	Yes	No	Yes	No	Yes	No
12	City of Indianapolis, IN	No	No	Yes	No	Yes	No	Yes	No
13	City of San Francisco, CA	No	Yes	Yes	No	Yes	No	Yes (6)	No
14	City of Jacksonville, FL	No	No	Yes	No	Yes	No	Yes	No
15	City of Columbus, OH	No	No	Yes	No	Yes	No	No	Yes
16	City of Austin, TX	Yes	No	Yes	No	Yes	No	No	Yes

1. Ranking: U.S. Census Bureau for year 2000 as published in April 2, 2001
2. The following cities were excluded because of their complexity, size (New York city and Los Angeles city), incomparable structure (City of Phoenix) and lack of available data (City of Detroit).
3. About 20 Police Officers remain on staff and are being civilianized through attrition.
4. City of Houston's long term goal is to civilianize the Fire Dispatcher positions. Currently, all 92 Police Dispatchers are civilianized but they are supervised by 18 uniform personnel. Fire Dispatcher positions have not been civilianized.
5. City of Dallas plans to civilianize the Police and Fire Dispatchers by the summer of 2006.
6. City of San Francisco has 14 firefighters with a goal of a completely civilian dispatch workforce by June 2005.

Source: Interviews with Austin, Dallas, Houston and Jacksonville Center personnel. Civilianization information for all other cities was obtained from the cities' websites and on-line budget data.

Appendix B – Reference To Reports From Other Cities Identifying Trends And Best Practices

Houston Emergency Center Performance Report, June 2005, prepared by Jefferson Wells International. Internet address: <http://www.houstontx.gov/controller/audit/05-27.pdf>

Review of the Winnipeg Police Service Communications Centre, June 2002, prepared by the Winnipeg Audit Department. Internet address: <http://www.winnipeg.ca/audit/reports.stm>

E911 System Assessment Report, April 2001, prepared by Gartner Consulting. Internet address: http://www.nashville.gov/finance/Internal_Audit/911_Audit.htm

Management Audit of the San Francisco Fire Department, January 2002, prepared by Harvey M. Rose Accountancy Corporation, Internet address: http://www.sfgov.org/site/budanalyst_index.asp?id=7002

9-1-1 Dispatching: A Best Practices Review, March 1998, prepared by the Office of the Legislative Auditor, State of Minnesota. Internet address: <http://www.auditor.leg.state.mn.us/ped/pedrep/9806-all.pdf>

Appendix C - Dispatcher Benefit Comparison For Major Cities In Texas

Table shows benefit comparison for major cities in Texas, including San Antonio.

Source: City of Houston, Houston Emergency Center Performance Review, June 2005, prepared by Jefferson Wells International

Dispatcher Benefit Comparison for Major Cities in Texas					Appendix M-1
	Houston	Austin	Dallas	Ft. Worth	San Antonio
Salary per hour	\$11.83 - \$20.16	\$13.54 - \$21.32	\$14.65 - \$24.17	\$14.92 - \$21.04	\$12.65 - no max Raises are earned through merit increases and not time in grade
Vacation	1-5 years 10 days 5 years 15 days 6-7 years 16 days 8-9 years 17 days 10-11 years 18 days 12 years 19 days 13 years 20 days 14 years 21 days 15 years 22 days 16 years 23 days 17 years 24 days 18+ years 25 days	5 years or less 12 days 5-10 years 15 days 10-15 years 16.5 days 15-20 years 18 days 20+ years 21 days in addition, everyone receives 2 personal days each year	0-4 years 15 days 5-8 years 17 days 9-14 years 18 days 15-18 years 20 days 19+ years 23 days	0-5 years 15 days 6-10 years 17 days 11-15 years 18 days 16-20 years 20 days 21+ years 23 days	6 months-1 year 5 days 1-5 years 12 days 5-10 years 14 days 10-15 years 16 days 15-20 years 18 days 20-25 years 20 days 25+ years 22 days
Paid Holidays	10 days + 1 floating day	10 or 11 days	9 days	8 days	12 days
Sick Leave	65 hours/year non-used hours matched by the city for the next benefit year 1040 hours maximum	1 day/month no limit on accrual	12 days/year 1440 hours maximum	0-5 years 2 days 6-7 years none 8-10 years 5 days 11-15 years 4 days 15-20 years 5 days 21-25 years 2 days 26+ years 7 days no limit on accrual	0-2 years 5 days/year through 10+ years 10 days/year In addition, unused days are bought back by the city at the end of the benefit year. (maximum of 10 days bought back) No accrual.
Shift Differential	\$0.25 for Evening Shift \$0.35 for Night Shift	\$0.65 for Evening Shift \$0.75 for Night Shift	2% of salary	\$0.50 for Evening Shift \$0.75 for Night Shift	\$0.50 for Evening Shift \$0.50 for Night Shift
Longevity	\$2.00 per year of service paid per pay period	5-7 years up to \$500/yr 7-15 years up to \$1000/yr 15+ years up to \$1500/yr	None	1-3 years \$300/yr 3-6 years \$600/yr 9+ years \$900/yr one lump sum payment	None
Language Pay	\$75/month	\$175/month Must speak at least 50% or more of the shift in the secondary language.	2% of salary	\$50/month	\$50/month



Appendix D - City Of Houston - Emergency Center Fiscal Year 2006 Proposed Budget

City of Houston's fiscal year 2006 proposed budget demonstrates the trend towards civilization and cross training of employees

Source: City of Houston, Houston Emergency Center Fiscal Year 2006 Proposed Budget

FISCAL YEAR 2006 BUDGET			
Fund Summary			
Fund Name	: Houston Emergency Center		
Department Name	: Houston Emergency Center		
Fund/Department No.	: 218 / 15		
	<u>FY2005 BUDGET</u>	<u>FY2005 ESTIMATE</u>	<u>FY2006 BUDGET</u>
Beginning Fund Balance	0	0	948,088
Current Revenues	<u>16,473,357</u>	<u>15,592,341</u>	<u>18,403,032</u>
Total Available Resources	<u>16,473,357</u>	<u>15,592,341</u>	<u>19,351,120</u>
Maintenance and Operations	<u>16,856,692</u>	<u>14,644,253</u>	<u>19,351,120</u>
Total Expenditures	16,856,692	14,644,253	19,351,120
Planned Ending Fund Balance	<u>(383,335)</u>	<u>948,088</u>	<u>0</u>
Total Budget	<u>16,473,357</u>	<u>15,592,341</u>	<u>19,351,120</u>
<p>The above summarizes the FY2005 Budget, Estimate and the FY2006 Budget for the Houston Emergency Center (HEC) Fund. Also included are the beginning and ending fund balances, total available resources and total expenditures.</p> <p>The mission of the Houston Emergency Center is to provide the citizens of Houston with the most efficient, accurate and professional service when processing their life-threatening calls. The City of Houston's Houston Emergency Center in coordination with the Office of Emergency Management protects life and property by operating the public safety communications system and by coordinating and managing emergency situations. The Information Technology division is responsible for the administration, maintenance and operations of the police, Fire/EMS computer aided dispatch (CAD) system, radio system and records management systems (RMS).</p> <p>Department Short-Term Goals</p> <ul style="list-style-type: none"> ▪ Maintain 99% Answer Index ▪ Expansion of the Quality Assurance Program ▪ Expansion of the Training Programs to provide ongoing professional-growth opportunities for HEC employees including technical, teamwork enhancement and required certification of all employees. ▪ Cross train employees to improve call flow ▪ Reduction of system outages ▪ Develop an interoperability radio system that will communicate with all City departments and function with County, State and Federal agencies. ▪ Accurate GIS database and MAP. <p>Department Long Term Goals</p> <ul style="list-style-type: none"> ▪ Improve efficiencies of FY05. ▪ Accreditations of Center <ul style="list-style-type: none"> ○ CALEA (Commission on Accreditation for Law Enforcement Agencies) ○ NAEMD (National Academy of Emergency Medical Dispatch) ○ NENA ENP (National Emergency Number Association Emergency Number Personnel) ▪ Establish Houston Emergency Communications State-Certified Academy ▪ Civilization of HEC. ▪ Greater overall system reliability and flexibility to handle future technology and population growth. ▪ Develop a long term strategy to migrate to a 700 MHz radio system. 			

Appendix D - City Of Houston - Emergency Center Fiscal Year 2006 Proposed Budget (Con't)

Houston Emergency Center (HEC) is completely composed of 9-1-1 civilian call operation personnel. In September 2003, the Police and Fire Dispatchers were re-located to the HEC building; however, they still report to the Police and Fire Department Management. The City's long term goal is to provide City-wide emergency response services using civilian Police and Fire dispatchers. Currently, Police Dispatchers are composed of civilian dispatchers with police supervision. The Fire/EMS Dispatchers are all uniform personnel. HEC staffing summary total does not include Fire Dispatchers.

Source: City of Houston, Houston Emergency Center Fiscal Year 2006 Proposed Budget

FISCAL YEAR 2006 BUDGET					
Department Budget Summary					
Fund Name		: Houston Emergency Center			
Department Name		: Houston Emergency Center			
Fund/Department No.		: 218 / 15			
		FY2004 Actual	FY2005 Budget	FY2005 Estimate	FY2006 Budget
Expenditure Summary	Personnel Services	10,746,504	13,508,297	11,664,737	14,124,088
	Supplies	83,369	244,800	224,312	313,300
	Other Services and Charges	1,893,393	3,039,595	2,755,204	4,635,850
	Equipment	0	0	0	213,882
	Non-Capital Equipment	0	64,000	0	64,000
	Total M & O Expenditures	12,723,266	16,856,692	14,644,253	19,351,120
	Debt Service & Other Uses	0	0	0	0
	Total Expenditures	12,723,266	16,856,692	14,644,253	19,351,120
Revenue Summary		12,839,136	16,473,357	15,592,341	18,403,032
Staffing Summary	Full-Time Equivalents - Civilian	190.4	235.7	217.5	246.5
	Full-Time Equivalents - Classified	0.0	0.0	0.0	0.0
	Total	190.4	235.7	217.5	246.5
	Full-Time Equivalents-Overtime	0.0	0.0	22.2	12.5



Appendix E - City Of Austin – Fiscal Year 2005-2006 Proposed Budget For Police And Fire Dispatch Operations

City of Austin fiscal year 2005-2006 proposed budget performance plan shows that the Police Communications area is civilianized..

Source: City of Austin Fiscal Year 2005-2006 Proposed Budget

Police – 2005-06					
Activity: <i>Communications (9-1-1/ Dispatch Operations)</i>					
Activity Code: 21AA					
Program Name: OPERATIONS SUPPORT					
Activity Objective: The purpose of Communications Operations activity is to receive and process emergency and non-emergency calls for police service from the public in order to provide police assistance to persons in need and support police personnel in the delivery of that service.					
Requirements and FTEs from all funding sources		2003-04 Actual	2004 -05 Amended	2004 -05 Estimate	2005-06 Proposed
Total Requirements		\$9,135,248	\$9,393,859	\$10,176,334	\$9,080,488
Civilian		171.00	178.00	178.00	172.00
Sworn		0.00	0.00	1.00	1.00
Full-Time Equivalent		171.00	178.00	179.00	173.00
Activity Performance Measures:					
Performance Measures:	Type	2003-04 Actual	2004 -05 Amended	2004 -05 Estimate	2005-06 Proposed
Cost per 3-1-1 call answered	Efficiency	\$1.31	\$1.07	\$1.19	\$1.08
Cost per 9-1-1 call dispatched	Efficiency	\$7.51	\$9.64	\$8.21	\$8.29
Cost per 9-1-1 call received	Efficiency	\$3.60	\$3.21	\$3.07	\$3.01
Cost per Teleserve Report	Efficiency	\$25.85	\$27.71	\$26.08	\$25.59
Number of Calls Answered in the 311 center	Output	633,045	650,000	654,104	650,000
Number of calls received in the 9-1-1 call center	Output	692,841	650,000	763,648	700,000
Number of dispatched calls for service citywide	Output	381,393	350,000	424,671	400,000
Number of Teleserve reports taken	Output	51,394	52,000	62,396	60,000
Average time to dispatch Priority 1 calls	Result	1:07	1:00	1:02	1:00
Average time to process a 9-1-1 Priority 1 Call	Result	1.12	1.00	1.05	1.00
Services of the Activity:					
Core Services:	Response and direction of emergency and non-emergency incoming calls from the public, media, and field supervisors; Radio communications; Response to warrant checks and other inquiries from outside law enforcement agencies; Maintenance of geographic information base; Production of maps for department use				



Appendix E - City Of Austin – Communications Fiscal Year 2005-2006 Proposed Budget (Con't)

City of Austin fiscal year 2005-2006 proposed budget performance plan shows that the Fire Communications section is operated by sworn personnel (Firefighters).

Source: City of Austin Fiscal Year 2005-2006 Proposed Budget

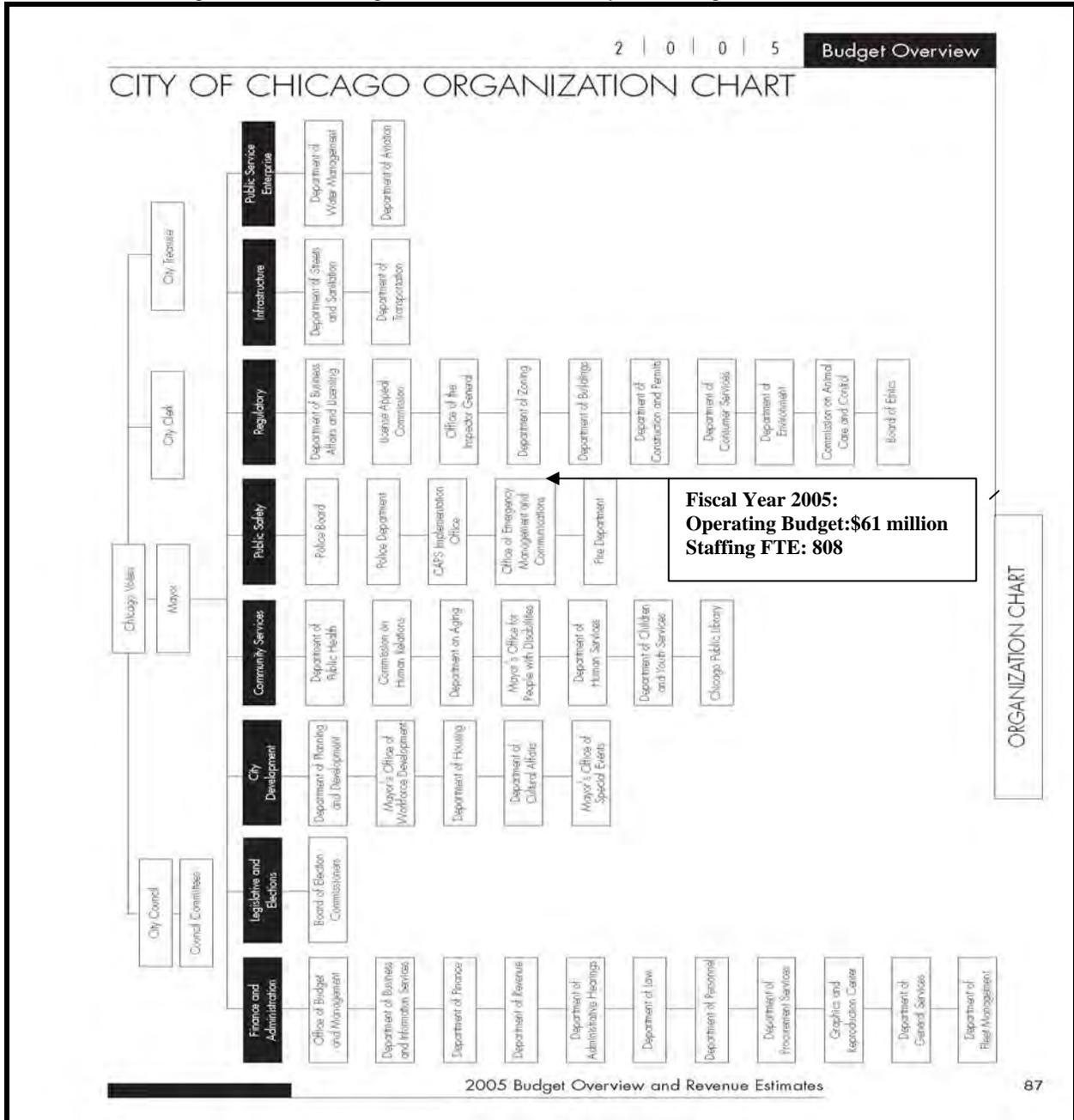
Fire – 2005-06					
Activity: <i>Communications Section</i>					
Activity Code: <i>3DSP</i>					
Program Name: <i>OPERATIONS SUPPORT</i>					
Activity Objective:	The purpose of the Communications Section is to provide integrated communications systems and operations to all users and providers of Fire Department services so they can insure that the requests for services are properly received and responded to.				
Requirements and FTEs from all funding sources	2003-04 Actual	2004 -05 Amended	2004 -05 Estimate	2005-06 Proposed	
Total Requirements	\$2,556,064	\$2,807,496	\$2,450,558	\$3,033,728	
Civilian	3.00	3.00	3.00	3.00	
Sworn	25.25	26.25	30.25	30.20	
Full-Time Equivalents	28.25	29.25	33.25	33.20	
Activity Performance Measures:					
Performance Measures:	Type	2003-04 Actual	2004 -05 Amended	2004 -05 Estimate	2005-06 Proposed
Cost per call processed	Efficiency	32	34	28	34
Total number of incidents processed	Output	74,206	74,800	82,000	86,100
Average AFD dispatch processing time, in seconds, for emergency incidents in the Austin service area (from entry of call into dispatch queue to assignment of first unit)	Result	42	45	40	40
Services of the Activity:					
Core Services:	Emergency Dispatch Services; Emergency Voice & Data Radio Systems Maintenance; Wired/Wireless, Telecommunication Maintenance; RDMT Project Management				
Semi Core Services:	Regional Fire Dispatching Services				
Service Enhancements:	N/A				



Appendix F- City Of Chicago City-wide Organizational Chart

The organizational chart illustrates the City of Chicago's Office of Emergency Management and Communications (OEMC) reporting structure. The OEMC supports public safety services such as 9-1-1 dispatching for Police, Fire and EMS, 311 services, Traffic Management Authority, and City-wide emergencies and disasters. The OEMC employs 436 civilians to operate Police dispatching, 107 civilians for Fire/EMS services, 36 civilians for traffic control and 78 civilians to answer 311 calls. The rest of the positions are for technology, emergency management and administrative services. About 20 commissioned Police Officers remain on staff; through attrition these positions are being civilianized.

Source: 2005 Budget Overview - Organizational Chart – City of Chicago website



Appendix G – City Of Chicago’s Office Of Emergency Management And Communications (OEMC) Website

OEMC website provides further insight into a mature emergency call center. Chicago’s OEMC was the first facility in the United States to consolidate all of its emergency management functions.

Source: City of Chicago, OEMC website as of August 2005.

The screenshot shows the City of Chicago OEMC website. At the top, there is a navigation bar with links for Login, Home, News, Events, City Departments, Site Map, Contact Us, and a search box. Below this is a secondary navigation bar with categories: For Residents, For Business, Exploring Chicago, and Your Government. The main header features the OEMC logo and the text "Office of Emergency Management and Communications". A breadcrumb trail indicates the current location: Home > Your Government > City Departments > Office of Emergency Management and Communications.

The main content area includes a welcome message: "Welcome to the Office of Emergency Management and Communications' Web Site!" followed by a description of the OEMC's role. A "CURRENT THREAT LEVEL" indicator shows "Elevated" with a warning of "SIGNIFICANT RISKS OF TERRORIST ATTACKS". Below this is a section titled "The Latest From OEMC" with a list of recent news items, including "TMA Weekly Traffic & Events Bulletin", "City Leadership Urges Chicagoans to Look After Elderly and Homebound As Summer Heat Precautions Are Reviewed at OEMC", "OEMC Revises Emergency Warning System to All Hazard Warning", "The Chicago Urban Area Security Initiative Grant Program for Eligible 501(c)(3) Nonprofit and Community-based Organizations", and "Chicago's OEMC Hosts First Awards Ceremony Honoring 9-1-1 Call Takers and Dispatchers".

The sidebar on the left contains a "Department Home" menu with links to "About OEMC", "911- Emergency", "Emergency Management", "Community Emergency Response Team", "Local Emergency Planning Committee", "Safety Tips", "Traffic Management Authority", "Archived Press Releases", "311 - City Services", and "Employment". Below the menu are sections for "I Want To..." with various links, "FAQ", and "Contact Info".

At the bottom of the page, there is a URL: http://egov.cityofchicago.org/city/webportal/portalEntit...Yes&Failed_Page=%2fwebportal%2fportalEntityHomeAction.do (1 of 2)8/24/2005 11:40:09 AM

Appendix H - Emergency Communications Department (ECD)

The City of San Francisco's fiscal year 2004-2005 Mayor's Budget shows that all 9-1-1 dispatch services for Police, Fire and EMS throughout the City and County of San Francisco are provided primarily by civilian personnel. There were still 14 firefighters remaining with a goal of releasing them by June 2005.

Source: City of San Francisco Mayor's Budget 2004 – 2005, pages 135 and 136

EMERGENCY COMMUNICATIONS

Mission The Emergency Communications Department (ECD) promotes excellence in public safety and linkage between the residents and visitors of San Francisco's diverse city and its emergency medical services.

Services ECD provides 911 dispatch services throughout the City and County of San Francisco for public safety services provided by police, fire and emergency medical personnel.

For more information, call (415) 558-3800.

Budget Data Summary

	2002–2003 Actual	2003–2004 Budget	2004–2005 Proposed	Change from 2003–2004	
				Nominal	Percent
Total Expenditures	\$36,357,114	\$35,765,255	\$42,305,388	\$6,540,133	18.29%
Total FTE	181.08	186.13	196.66	10.53	5.66%

Budget Issues and Details

Civilian Operation of All 911 Dispatch Duties

- ◆ To promote cost-savings through reduced salary costs, one of the primary goals of the department is to fully integrate civilians to handle 911 operations. Conversion to using civilian dispatchers to handle all aspects of police, fire and medical calls will enable firefighters to return to field operations. In 2003–2004, newly hired civilian dispatchers relieved 10 firefighters who were performing dispatch duties. The 2004–2005 budget earmarks funding for recruiting, hiring and training 20 new civilian public safety dispatchers. This will allow the department to release the remaining 14 firefighters, thereby successfully meeting the goal of a completely civilian dispatch workforce by June 2005, which is estimated to save the city \$2.4 million annually.

Increase Receipt of Wireless Emergency Calls

- ◆ The department currently receives 10,000 wireless 911 calls per month. Improvements in 2003–2004 allowed ECD to receive approximate coordinates of each wireless 911 call. For the 6-month actuals for 2003–2004, ECD received 94 percent of all wireless calls, just shy of the 95 percent performance goal established by the department last year. In anticipation of the increasing volume of wireless 911 calls next year, the department's budget allocates a sufficient level of staffing to address the expected increase in volume as well to meet its performance goal.

Enhanced Training and Continued Dispatcher Education

- ◆ All public safety dispatchers are currently required to attend 48 hours of continuing dispatcher education every two years for a total of 6,800 training hours over a two-year cycle. ECD is committed to providing dispatchers with relevant training that enhances their ability to provide quality service. In 2004–2005, ECD will implement a creative staff training model that also promotes cost savings. The department will move away from the traditional 8-hour training day, which requires backfilling with overtime pay, to providing two 4-hour training modules in order for training to occur during standard workshifts.



CITY OF SAN ANTONIO

P. O. BOX 839966
SAN ANTONIO TEXAS 78283-3966

April 27, 2006

City Auditor
San Antonio, Texas

RE: Management's Corrective Action Plan for the Review of the 9-1-1 Communications Center

City Management, San Antonio Police Department (SAPD), San Antonio Fire Department (SAFD) and Information Technology Services Department (ITSD) have reviewed the audit report titled "Review of the 9-1-1 Communications Center" and herein is a Corrective Action Plan for the recommendations. Having an objective review of this operation unit has resulted in better information for Management to develop operating strategies for the future that will improve service delivery to citizens (effectiveness), operational efficiencies, and human resource management.

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
Executive Summary (ES)					
ES1	Single organizational structure with authority over all emergency response services (Recommendation 1.1, Response Page 2)				
	• Improve efficiency and effectiveness of the dispatching operations	3			
	• Create a career path for civilian Call-takers and Dispatchers	3			
	• Potential for significant annual payroll cost savings	3			
ES2	Improve the internal control environment				
	• Create a redundant Computer Application Dispatching (CAD) System and Network (Recommendation 2.1, Response Page 2)	4			
	• Locate a fully functional back-up facility (Recommendation 2.2, Response Page 2)	4			
	• Restrict access to the Communications Center and its resources (Recommendation 2.3, Response Page 2)	4			
	• Identify and correct hardware capacity deficiencies (Recommendation 2.4, Page 3)	4			
	• Restrict programmer's access to the CAD applications and data (Recommendation 2.5, Response Page 3)	4			

Detail Report

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
1.	Organizational Issues				
1.1	Organizational Structure Effectiveness				
	• Consider implementing a single organizational structure, or	16	Decline		
	• Create a separate Department which would report to the City Executive Team	16	Decline		
	Organizational issues				
	• Formal documented polices and procedures	16	Accept	Assistant Chief Mario Guerra	June 2006
	• Civilianize call center and dispatching positions	16	Partially Accept	Assistant Chief Tyrone Powers	April 2007
	• Compensate personnel equitably	16	Partially Accept	Human Resources	Consistent with civilianization plan
	• Adequately train Call-takers and Dispatchers	16	Accept	Lt. M. King	Completed
	• Develop comprehensive performance metrics	16	Accept	Lt. M. King	Completed
	• Implement a single dispatching system	17	Decline		
	• Adequately staff for call volume	17	Accept	Assistant Chief Tyrone Powers	Undetermined

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
	<p>Action plan: The Police Department and Fire Department feel that combining dispatch centers is neither beneficial nor operationally feasible. Consolidation trends in cities like Houston have been reversed due to added costs and failures. More detailed study is recommended. The Police Department will civilianize the dispatchers but not the supervisors. Evaluation of current progress in reducing drop rate is underway. Projections in proposal of additional personnel will be in the FY2007 budget cycle.</p> <p>The roles and responsibilities related to the call-taking and dispatching of requests for Police or Fire/EMS service are very distinct in nature. While the immediate receipt, processing, and dispatching phases of emergency response initiation share some commonalities, additional concerns and priorities related to patient care come to the forefront <i>after</i> emergency responders have been dispatched. Based on conditions related to each specific incident, the EMS call-taker can request pertinent information from the caller to ascertain what direction and guidance can/should be given toward initiating patient care long before the arrival of emergency responders. In many instances, pre-arrival guidance involves maneuvers related to life-threatening conditions such as airway obstruction, active bleeding, and cardio-pulmonary resuscitation (CPR).</p> <p>Call-taking personnel are provided with concise pre-arrival guidelines that most people, whether civilian or sworn, can learn to utilize efficiently. However, in the City of San Antonio, the efficiency and effectiveness of the pre-arrival program is further enhanced with the utilization of field-experienced, certified/licensed paramedics as call-takers. At the time of this writing, dispatching and call-taking personnel assigned to the SAFD Communications Center had acquired an average of over 10 years of field experience on a SAEMS ambulance, prior to assuming their current duties. With the exception of other large metropolitan entities, the comprehensive patient care knowledge base and intense field experiences acquired and gained by these SAEMS personnel are difficult to duplicate and cannot be overemphasized. Said experience, along with the aforementioned pre-arrival program, have and continue to provide the citizens of San Antonio with the ideal call-taking and dispatching structure.</p> <p>By the end of January 2006, all SAFD dispatch personnel will have attended or re-attended an Emergency Medical Dispatch Priority Course, consisting of call-taking and dispatching procedures related to EMS. By the end of the same time period, approximately one-half of the Communication Center roster (or sixteen personnel) will have also attended the Emergency Medical Dispatch Priority Course, consisting of call-taking and dispatching procedures directly related to Fire Suppression. The goal is that the remaining portion of the Communication Center roster will attend the Fire Suppression portion of the course by the 1st of May 2006.</p> <p>The Fire/EMS Department continues to develop and/or update formal documentation related to Communication Center daily operations, as well as policies and procedures relating to disaster recovery and business continuity plans for mission-critical emergency applications. At the time of this writing, 85% of all relevant documents had been updated and bound for easy access by Communication Center personnel.</p>				
2. Internal Control Issues					
2.1	<p>Lack of Redundancy for the Computer Aided Dispatch (CAD) Application and Network Police, Fire/EMS and ITSD Management should implement a web-based redundant high availability CAD System and Network.</p> <p>Action plan: Police, Fire/EMS and ITSD Management agree with the recommendations of implementing a web-based redundant, highly available CAD system and network. This will be implemented in two phases. Phase One will be web-fronting the current mainframe CAD system. ITSD is in the process of procuring a tool to fulfill this and should be completed by June 2007. Phase Two is a complete project to replace the current CAD system. The project will begin in the first quarter 2007. The project will include defining the requirements of a replacement system, building a project timeline and establishing appropriate funding.</p>				
2.2	<p>Inadequate Alternate Back-up Facility</p>				

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
	<ul style="list-style-type: none"> Police, Fire/EMS and ITSD Management should implement a plan to locate a fully functional enhanced alternate 9-1-1 Center. Police, Fire/EMS and ITSD Management should formally document a disaster recovery and business continuity plan for mission-critical emergency applications. <p>Action plan: The Departments concur with the importance of a well-equipped Alternate-Public Safety Answering Point (Alt. PSAP). To that end, floor space was configured at the Transguide facility on or about 1995. Recently, \$38,000 from the 2005 State Homeland Security Program Grant was allocated to replace obsolete equipment at this location. At the time of this writing, 10 PCs have been purchased, configured, and placed in the Alternate PSAP Office. Additionally, the work area is being assessed on various switches and hubs that will be necessary to convert the site from existing 56 kpbs connection to the dark fiber housed within the building's infrastructure. This upgrade, which replaced end-of-life equipment with newer hardware, will allow better communication between COSA departments and will allow the COSA to gain access to traffic operations information; all to facilitate public safety operations and assist in improving emergency response capabilities. Additionally, the Transguide location is equipped with ten desktop telephone units that are programmed and capable of communicating with the current 800 MHz radio system used by the Police and Fire/EMS Departments.</p> <p>As a back-up to the Alternate PSAP, discussions have taken place between the COSA and Bexar Metro 911 System for the use of their facilities. This location currently serves as an Alt. PSAP for the Bexar County Sheriff's Office and numerous smaller entities throughout Bexar Metro's three-county area of jurisdiction. The Dispatch Center at this location is equipped with sixteen combination calltaker/dispatching positions. Their radio system is compatible with the COSA's 800 MHz system, with talk groups already programmed into the Bexar Metro system. Additionally, this location is equipped with a T1 link and the same telephone system (Positron) as the one utilized by SA Police, Fire/EMS Departments. Further discussions and developments do need to take place related to CAD installation, as well as other computer-based technology.</p> <p>Discussions are on-going with regard to other possible locations for the Alternate PSAP. Locations discussed include the proposed Emergency Operations Center at Brooks City Base and the new SAFD Fire Training Academy. Both of these sites will require additional feasibility study and ultimately, adequate funding.</p>	20	Accept	City Manager Police Chief Fire Chief ITSD	Pending additional funding and discussions
	<ul style="list-style-type: none"> Police, Fire/EMS and ITSD Management should formally document a disaster recovery and business continuity plan for mission-critical emergency applications. 	20	Accept	ITSD Police/Fire	Completed
2.3	<p>Excessive Physical Access to the Center</p> <ul style="list-style-type: none"> The Police Chief and Fire Chief should take immediate steps to ensure that the Center's physical security risks are reduced. Police and Fire Management should implement a process to periodically review access to the Center. <p>Action plan: These items were resolved immediately upon notification by the City Auditor's Office.</p>	21	Accept	Lt. M. King	November 2005
	<ul style="list-style-type: none"> Police and Fire Management should implement a process to periodically review access to the Center. 	21	Accept	Lt. M. King	January 2006
2.4	<p>Hardware Capacity Deficiencies related to the Automatic Vehicle Location (AVL) Software</p> <p>The City Manager should require ITSD to be involved in all information technology (IT) application development, purchases and development of standardized IT processes.</p> <p>Action plan: ITSD is in the process of implementing the fundamentals of Information Technologies Infrastructure Library (ITIL), which establishes best practices for problem identification and resolution. Combined with implementation of change control and release management disciplines, these processes will help us to identify and mitigate problems of this nature.</p>	22	Accept	ITSD	Completed
2.5	<p>Unrestricted Access to the 9-1-1 CAD Application and Data by Programmers</p>				

Recommendation					
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
	<ul style="list-style-type: none"> ITSD should remove programmer's unrestricted access to the CAD application and data. 	24	Accept	ITSD	August 2006
	<ul style="list-style-type: none"> ITSD should implement a formal CAD application change management process. <p>Action plan: ITSD will be implementing Capability Maturity Model (CMM) for all application development and management. This discipline will require defined processes for testing and for appropriate segregation of duties in mainframe and open systems application operations. ITSD recognizes the importance of a comprehensive change management and control system.</p>	24	Accept	ITSD	August 2006

We appreciate the City Auditor's comments on the Review of the 9-1-1 Communications Center. We are committed to address the recommendations in the audit report and the plan of actions presented. In addition, City Management and Police staff will brief the new Police Chief on this audit and its findings.

Sincerely,



Erik Walsh
Assistant City Manager



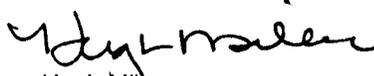
Michael Armstrong
Assistant City Manager
Chief Information Officer



Robert Ojeda
Fire Chief



Tyrone Powers
Assistant Police Chief



Hugh Miller
Chief Technology Officer, Acting