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**Report**

**Risk Assessment of the  
AUSTIN FIRE DEPARTMENT**

**June 22, 2010**

Office of the City Auditor  
Austin, Texas

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# City of Austin

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Date: June 22, 2010

To: Mayor and Council

From: Kenneth J. Mory, City Auditor 

Subject: Risk Assessment the Austin Fire Department

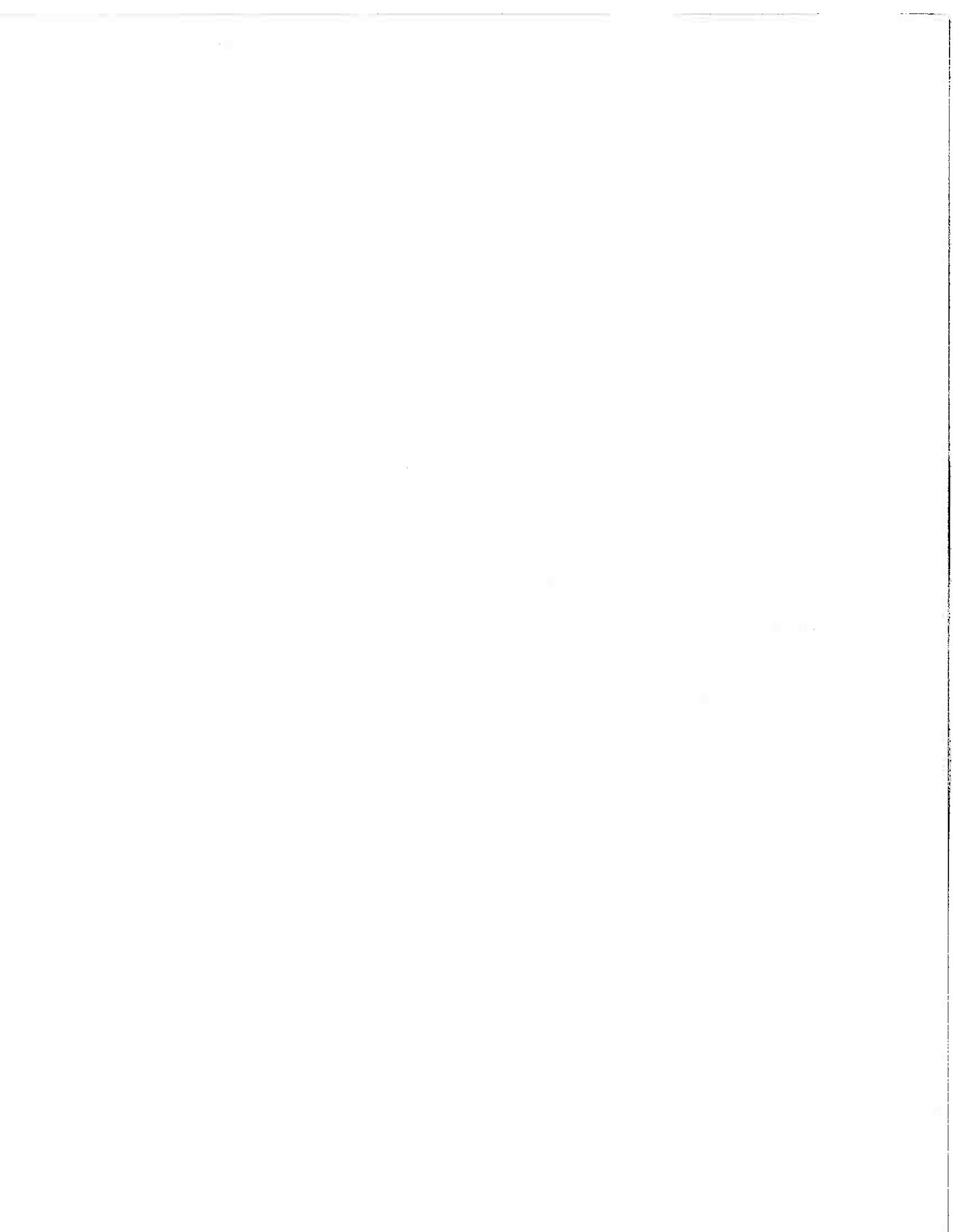
I am pleased to present the results of the risk assessment of the Austin Fire Department (AFD). AFD provides fire protection and medical first response services within Austin and supports emergency service districts around Austin.

With the assistance of the Office of the City Auditor, AFD personnel identified a number of significant potential risks related to the department's mission and firefighter health and safety. Significant risks include apparatus, facilities, equipment, communications, and training. According to AFD staff, these risks are driven by funding, staffing issues, and issues related to growth in the Austin area.

In planning future audits, OCA may seek to undertake projects related to these areas of significant potential risk. These projects will be considered in the context of other Citywide risks and the potential to add value to the City and AFD.

We appreciate the cooperation and assistance we received from AFD during this assessment. Staff at all levels of the organization were informative and demonstrated a strong commitment to achieving the department's mission and goals.

cc: Marc Ott, City Manager  
Michael McDonald, Assistant City Manager  
Rhoda Mae Kerr, Chief, Austin Fire Department  
Harry Evans, Chief-of-Staff, Austin Fire Department



## COUNCIL SUMMARY

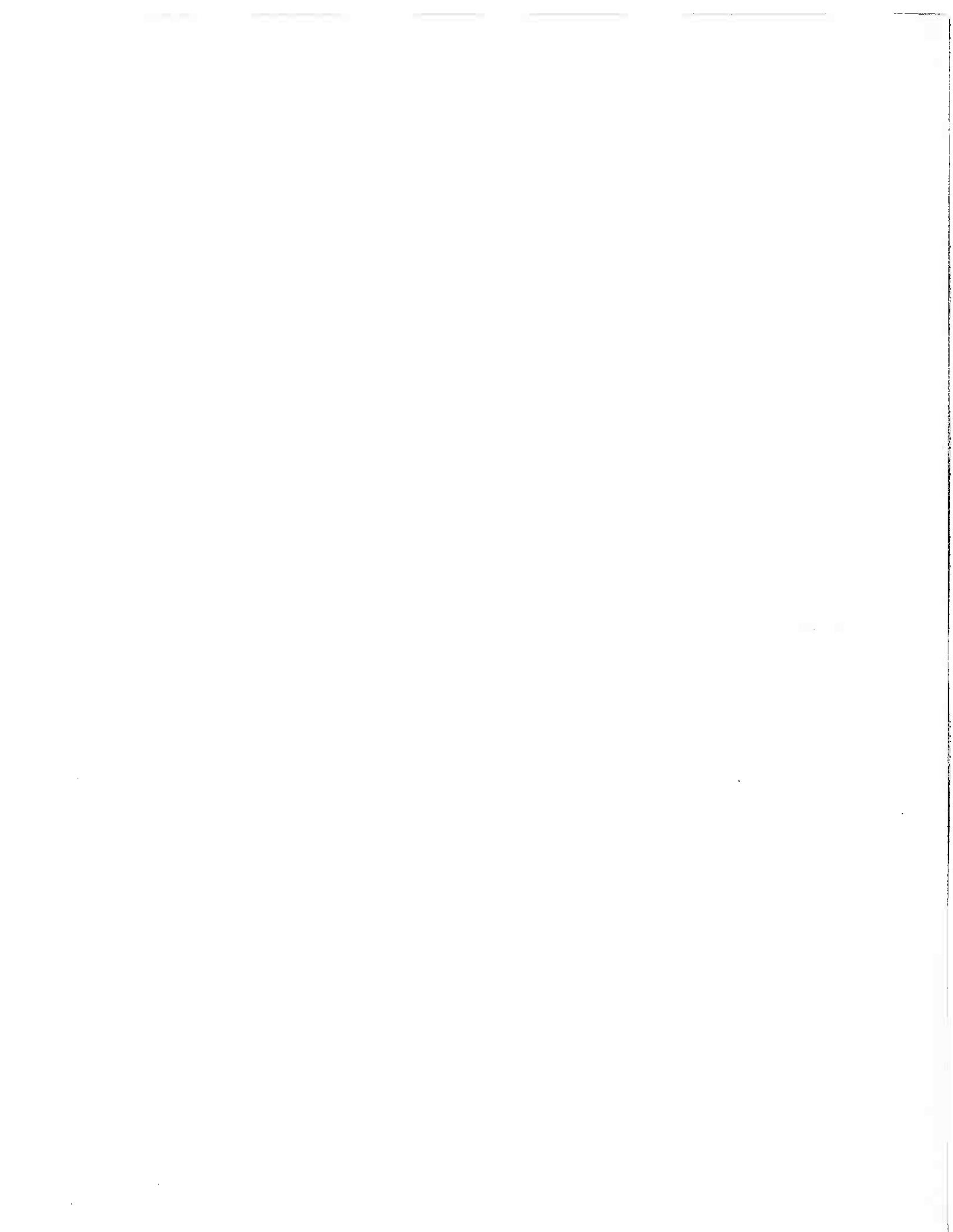
This report presents the results of the risk assessment of the Austin Fire Department (AFD). The mission of the Austin Fire Department is the preservation of life and property. In addition to fire prevention, suppression, and special rescue operations, AFD is the city's first responder in medical emergencies. AFD also provides "mutual aid" response to emergency service districts (ESDs) outside the city limits.

With the assistance of the Office of the City Auditor, AFD identified significant risks related to mission effectiveness and employee health and safety, driven by staffing, funding, and growth issues. Key risk areas include apparatus, facilities, equipment, communications and dispatch, training, staffing and command, and planning and growth issues.

AFD completed a control self-assessment as part of this project, and the controls identified as needing improvement corresponded to the areas of high risk. AFD indicated that they have actions underway to mitigate some of the risks identified in this report and are working to identify others they can address using current resources. Other issues may require City management and Council-level involvement and coordination with other departments.

In planning future audits, OCA may seek to undertake projects related to these risk areas. These projects will be considered in the context of other Citywide risks and the potential to add value to the City and AFD.

In addition to this report, OCA will issue a supplemental report to AFD management that contains more details on survey responses and meeting comments. This report will be available to the Mayor, City Council and the public on request.



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## **BACKGROUND**

The mission of the Austin Fire Department (AFD) is the preservation of life and property. In addition to fire prevention, suppression, and special rescue operations, AFD is the city's first responder in medical emergencies, meaning firefighters arrive on the scene and begin patient assessment and stabilization, usually before the arrival of the ambulance. Medical calls account for approximately seventy percent of AFD emergency response calls. All firefighters are certified as Emergency Medical Technicians-B. Austin/Travis County Emergency Medical Services is a separate City department with paramedics who perform advanced life support and do patient transport.

AFD also provides "mutual aid" response to emergency service districts (ESDs) outside the city limits when requested by the fire departments in that jurisdiction. Those departments also provide mutual aid to AFD.

The Austin Fire Department operates under a collective bargaining agreement with the Austin Firefighters' Association. AFD facilities currently include 43 active fire stations plus an Aircraft Firefighting/Rescue station at Austin-Bergstrom International Airport, and seven office sites. AFD's approved budget for fiscal year 2010 was \$120 million, including 1074 sworn FTEs and 67 civilian FTEs.

## **OBJECTIVES, SCOPE, AND METHODOLOGY**

This risk assessment of the Austin Fire Department (AFD) was included on the Office of the City Auditor (OCA) FY 2010 Approved Service Plan and approved by the City Council's Audit and Finance Committee because of the importance of AFD's mission, the size of its budget, impacts on AFD of growth in the Austin area, and because the department has not been audited previously by OCA.

### **Objectives**

The objectives of this facilitated risk assessment were to

- provide management with information and tools for managing the critical risks that can affect the achievement of the department's goals and objectives, and
- identify issues for potential future audits by OCA, if required.

### **Scope**

The risk assessment encompasses all AFD operations. The risk survey and facilitated meetings (see below) were completed in April and May 2010.

### **Methodology**

To accomplish our objectives, we performed the following steps:

- Administered a department-wide survey on risks facing the department and its employees.
- Facilitated several risk identification meetings with AFD personnel at all levels in the organization.
- Conducted a site tour of several AFD facilities to gain a better understanding of AFD operations.
- Facilitated a control self-assessment of AFD controls by key process owners and subject matter experts.

**Risk Ranking Analysis.** We ranked risks based on the following criteria as measured by survey results and comments received in the risk identification meetings:

- Level of AFD concern
- Management risk focus
- Potential for significant impact on mission effectiveness or firefighter safety

In evaluating management risk focus, we also reviewed the FY 2011 AFD Business Plan. While the results of the survey and the risk identification meetings formed the basis for our evaluation, auditor judgment was also applied to arrive at the final risk rankings. In evaluating potential impact on mission effectiveness and firefighter health and safety, we considered the likelihood of occurrence and potential impact for each of the risk categories. Exhibit 1 on the next page shows the results of this ranking.

The survey responses and comments were self-reported by AFD personnel. We did not complete audit work to verify that the information was accurate or complete or that the risks cited actually exist.

OCA will issue a supplemental report to AFD management that contains more details on survey responses and meeting comments. This report will be available to the Mayor, City Council and the public on request.

This risk assessment was conducted as a non-audit service as defined under the Government Auditing Standards.

## RISK ASSESSMENT RESULTS

**AFD personnel self-identified significant potential risks related to mission effectiveness and employee health and safety, which they believe are driven by staffing, planning, growth, and funding issues.**

AFD's mission is to protect lives and property. The risks identified by AFD personnel during this risk assessment include issues that the department believes could affect the ability of firefighters to safely and effectively carry out this mission. They also include risks that AFD personnel believe could affect the department's preparation level for effectively carrying out the mission, such as staffing and planning issues.

Exhibit 1 below shows the risk areas included in the department-wide risks survey, ranked from highest to lowest risk based on our criteria of AFD concern, management risk focus, and potential impact on department mission and firefighter safety. Areas rated as high risk have a greater potential impact and a higher likelihood of occurrence.

**EXHIBIT 1  
Summary of Risk Ratings**

Risk Rank	Risk Category	Level of Concern	Mgmt. Risk Focus	Impact	Overall Risk Rating
1	Emergency apparatus	2.7	2.8	3.0	2.89
2	Command structure	2.6	2.8	2.8	2.75
3	Staffing and assignments	2.8	2.3	3.0	2.71
4	Communications and dispatch	2.2	2.8	3.0	2.68
5	Emergency service districts (ESDs)	2.4	2.7	2.5	2.54
6	Training & skills development	2.4	2.7	2.5	2.51
7	Employee health & safety	2.2	2.3	3.0	2.50
8	Infrastructure / facilities	3.0	2.0	2.5	2.49
9	Emergency response equipment	2.2	2.0	3.0	2.46
10	Annexations, growth, & density	2.3	2.5	2.5	2.43
11	Hydrants	1.8	2.3	3.0	2.38
12	Medical first response	2.0	2.3	2.8	2.37
13	Balance of resources	2.3	2.0	2.5	2.27
14	Vehicles	1.6	2.0	2.7	2.26
15	Water flow	1.6	2.2	3.0	2.25
16	Pay and promotions	2.0	2.5	2.2	2.22
17	Recruiting and hiring	2.8	1.7	2.0	2.14
18	Personal Protective Equipment (PPE)	1.7	1.3	3.0	2.12
19	Mechanisms to keep policies and procedures current	1.6	1.8	2.0	1.80
20	Ethical standards and compliance	1.7	1.8	1.8	1.77
21	Fraud, waste, or abuse	1.8	2.0	1.5	1.76
22	Mechanisms for reporting inappropriate behavior	1.7	2.0	1.5	1.74
23	Coordination w/ City departments	1.6	1.8	1.5	1.64
24	Fair and equitable treatment	1.2	1.8	1.5	1.51
25	Citizen complaint mechanisms	1.3	1.7	1.0	1.33

**Overall Rating Scale:** 2.5 or over = High; 2.0-2.49 = Med; Under 2.0 = Low

SOURCE: OCA analysis of results of AFD risk survey and facilitated meetings.

**Respondents cited concerns related to apparatus, communications, equipment, and infrastructure that directly affect employee health and safety and the ability to protect public safety.** Crosscutting issues identified by the respondents that affect these risk areas include maintenance and asset management, staffing and funding, and coordination and strategy issues. The following are specific risk issues within each of these direct operational areas:

- **Apparatus.** Apparatus include rescue units and fire trucks, and are essential to the mission of the department. Respondents indicated that while front-line apparatus are of high quality, there are risk issues, including:
  - Functionality issues related to size and capabilities.
  - Apparatus taken out of service for such things as repair and maintenance, training, and public education, affecting area coverage.
  - Reserve units used to replace front-line units are older and less functional and have some safety problems.
  - Excessive downtime for maintenance and repairs.
  
- **Communications and dispatch.** Communications are essential for dispatching crews to the scene and ensuring continued effectiveness throughout the emergency response. Reported risks include:
  - System problems creating dispatch delays.
  - Insufficient tools and staff to adequately handle both City and County dispatch.
  - Impending retirements and loss of institutional knowledge in key technical positions.
  - Shortage of technical staff.
  - The need for strengthened managerial controls.
  - Other issues including with equipment, protocols, scheduling, and effectiveness of crew-dispatch communication.
  
- **Emergency response equipment.** Firefighters depend on various types of equipment such as axes, saws, carbon monoxide monitors and air packs to deal safely and effectively with emergency response. Although a number of respondents indicated that equipment was satisfactory, a number of risks were identified, including:
  - Insufficient equipment and tools in certain areas.
  - Functionality and specification issues.
  - Readiness, maintenance, care, and replacement of equipment.
  - Management systems and controls.
  - Funding and purchasing.
  
- **Infrastructure.** Firefighters spend a significant percentage of their time in fire stations. Respondents cited several concerns related to station conditions and other infrastructure. Risks identified include:
  - Station age and disrepair.
  - Insufficient maintenance programs due to lack of staffing.
  - Diesel exhaust infiltration from apparatus.
  - Health and safety issues in fire stations such as mold, asbestos, lead paint, and pests.
  - Station functionality issues including stations too small to fit full size apparatus and lack of onsite storage for protective gear and equipment.
  - Failing infrastructure such as driveways and bay doors.
  - Problems with communications systems.
  - Challenges balancing the need for adequate infrastructure as growth occurs with neighborhood interests and opportunities for partnering with private developers.

- **Employee health and safety.** Employee health and safety risks crossed several areas, including risks noted already with apparatus safety, fire station habitability, and equipment, as well as personal protective equipment (PPE) issues and exposure risks with medical first response. Other risks include:
  - Insufficient FTEs to achieve the four-person staffing standard on apparatus (this directly affects the ability to fight a fire, since standard procedure requires that a unit have two firefighters to go into a structure and two to stay outside).
  - Concerns about whether physical and mental fitness standards for new cadets are adequate to ensure they can perform necessary tasks.
  - Insufficient physical fitness for the job for existing firefighters and command staff, in part due to lack of a fitness standard for incumbent firefighters.
  - Safety practices not being followed in order to achieve faster response times, including failure to use seatbelts, dressing en-route to emergencies, and unsafe driving practices.
  - Traffic risks at road-side response incidents and from citizens not yielding to emergency response apparatus.
  - Insufficient pre-incident firefighting planning.

**Respondents cited staffing-related risks that impact the department's effectiveness, including command structure, staffing and assignments, and training.** Command and staffing risks were identified by respondents to the department wide survey and were a topic in each of the facilitated risk identification meetings. A wide variety of issues were stated.

- **Command structure.** Trained and experienced leaders setting a positive tone at the top are a key to working effectively and safely in achieving the department's mission. Risks related to command structure include:
  - Impending retirement of personnel in key areas, some command inexperience, and the need for succession planning.
  - Insufficient response coverage coordination, pre-incident planning, asset management, IT systems, and payroll systems.
  - Personnel issues including evaluations, management-staff relations, accountability and ethics related to hiring, promotion, recruiting, and consistency of policy enforcement.
  - Need for leadership on issues and input on priorities.
  - Desire for Chief commitment to taking care of staff.
- **Staffing and assignments.** Having adequate staffing with sufficient expertise is critical to achieving the department's mission. Risks related to staffing and assignments include:
  - Insufficient FTEs to achieve the four-person staffing standard on apparatus.
  - Insufficient staffing in support areas such as communications, maintenance, prevention, and planning and assessment.
  - Staffing ratios being out of balance, for example, non-civil-service staffing to civil service staffing, and Battalion Chief span of control.
  - Lack of management system expertise due to rotation of officers.
  - Scheduling policy issues related to overtime, working at a higher class (at a level above one's current level), working consecutive 24-hour shifts, and dispatch working 24-hour shifts.
- **Training.** Training is essential to ensuring firefighter and command readiness and safety in responding to emergencies. Risks associated with training include:

- Accountability for critical skills.
- Coordination and coverage issues with using apparatus, tools, and staff during training.
- Fire academy cadet recommendations from training staff being overruled by management.
- Insufficient staffing, equipment, and apparatus for training needs.
- Insufficient command and officer training.
- Insufficient advanced development classes to maintain certifications.
- Insufficient training for special operations, apparatus operators, communications and dispatch training, and hazardous materials handling and disposal.
- Insufficient training for staff moving to new assignments.
- The need for more hands-on training, live fire training, and less computer-based training.

**Respondents cited planning and growth risks that include annexations and increased downtown density and agreements with surrounding emergency service districts (ESDs).**

Both growth within the City and commitments to surrounding areas drive the need for additional resources. Those resources are not always readily available, so AFD management is required to make decisions on how to allocate limited resources.

- **Growth, Annexations, and Density.** Growth has occurred in the City both downtown and in the traditional growth areas. Respondents indicated risks related to growth, including:
  - Annexation decisions are made without adequate consideration regarding service level impacts on things such as infrastructure and service to existing areas.
  - Growth and density in areas of town have outpaced the level of specialized training and resources required, especially in areas with aged infrastructure.
  - AFD management needs to explore alternative service delivery models to optimize station location, apparatus, staffing, and service strategies.
- **Emergency Service Districts (ESDs).** As noted in the background of this report, Austin coordinates with ESDs around the Austin area to support combined emergency response in the Austin perimeter. Risks with ESDs include:
  - Coordination and oversight issues.
  - Ensuring effective response coverage within Austin while also supporting ESDs.
  - Insufficient command and response strategies for combined response.
  - Different protocols and lower standards in training and staffing of ESDs compared to AFD.
  - The need for joint training with ESDs, while ensuring such training is high quality.
  - Potential legal exposures related to civil service laws and possible AFD liability if a fire occurs within Austin while a unit is serving another ESD.
  - Concerns that Austin taxpayers are subsidizing ESDs.

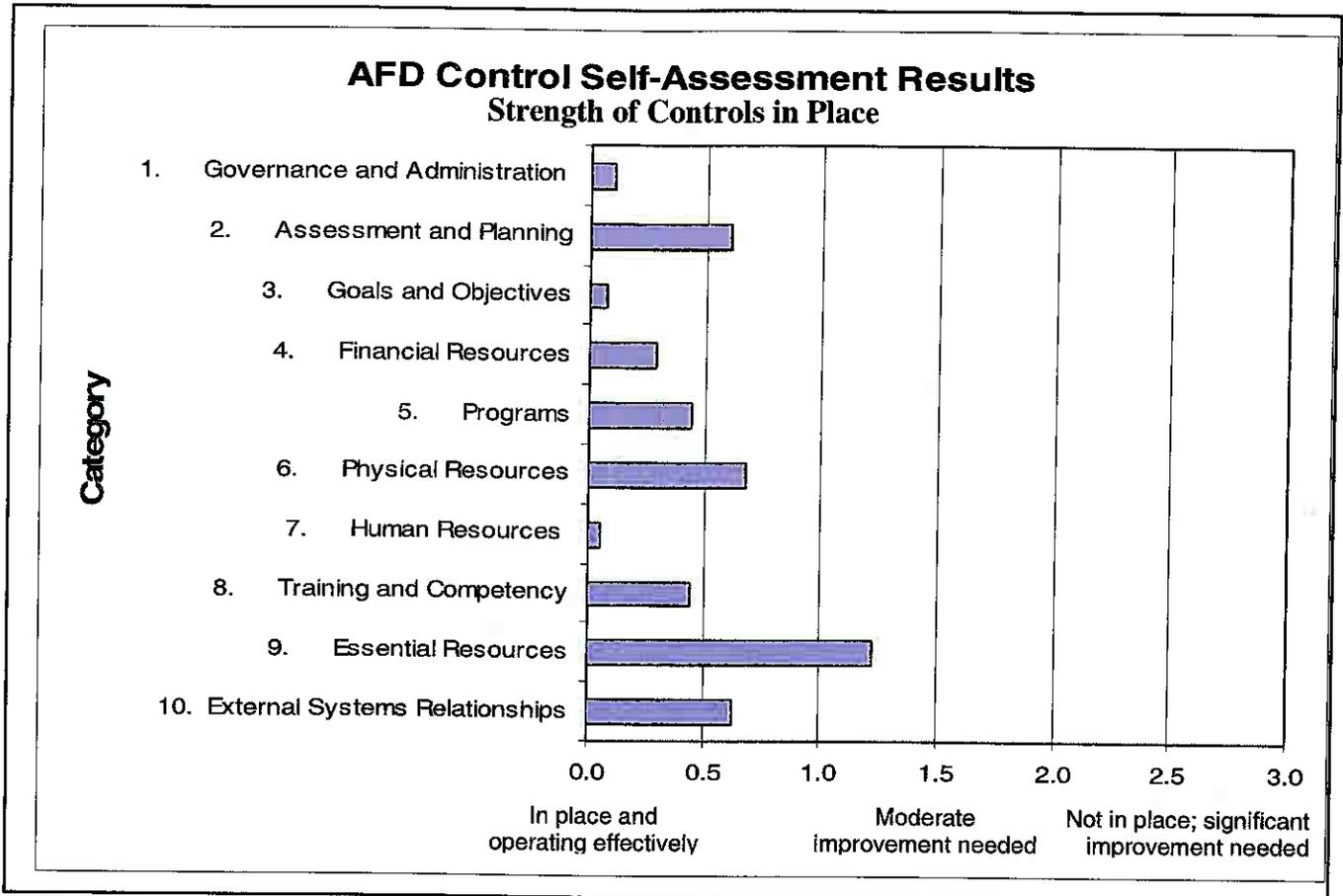
**AFD completed a control self assessment as part of this project and the controls rated as needing improvement corresponded to the areas of high risk.**

Key process managers within AFD conducted a self-assessment of controls using criteria from the Commission on Fire Accreditation International (CFAI). Controls identified as needing the most improvement correspond to areas of high risk in the risk self-assessment. AFD can use the results of both the risk and control self-assessments to continue targeting improvements and monitor the strength of controls over time.

**Based on the results of the self assessment, controls needing improvement include those related to essential resources, external system relationships, physical resources, and assessment and planning.** These areas are aligned with the high risk areas noted earlier in Exhibit 1 of this report, including infrastructure, apparatus and equipment, emergency service districts, and pre-incident planning. (See Exhibit 2.)

- **Essential Resources.** This category includes water supply, communications, administrative support services, and office systems. The administrative support services and office systems were the highest-rated areas, indicating the need for the most improvement.
- **External System Relationships.** This category includes external agency relationships and agreements, such as those AFD has with emergency service districts (ESDs).
- **Physical Resources.** This category includes fixed facilities, apparatus and vehicles, apparatus maintenance, tools and small equipment, safety equipment, and other physical resources. Drivers of higher ratings in these areas were mainly fixed facilities (fire stations and other facilities) and tools and small equipment.
- **Assessment and Planning.** This category includes risk assessment and response strategies, and strategic plans. These areas were all rated as needing improvement.

**EXHIBIT 2**



**Note:** These ratings represent the average of the ratings of components within each category.

**SOURCE:** OCA analysis of AFD Control Self-Assessment results.

**AFD can use the control self-assessment for targeting focused improvements and ongoing monitoring of controls.** In addition, AFD can leverage this self-assessment work in seeking fire department accreditation, as the department’s prior accreditation status has expired. We suggest that the department first conduct a validation step, as some ratings were not consistent with the level of risks reported.

**Based on the results of this assessment there are risks that require additional attention due to the potential to significantly affect AFD operations.**

Management has reported actions underway to address some of the issues identified in this report and is working to identify others that can be addressed using current resources. Other issues may require additional planning and resources to mitigate.

In planning future audits, OCA may seek to undertake projects related to the areas below. This could include audits, special requests, control reviews, assistance or advisory projects, or City Auditor Integrity Unit (CAIU) projects. The projects listed below will be considered in the context of other Citywide risks and the potential to add value to the City and AFD.

- **Condition Assessments.** This may be done in cooperation with outside consultants with expertise in fire operations.
  - **Infrastructure.** Assessment of condition and functionality of fire stations and other facilities.
  - **Apparatus.** Assessment of condition, functionality and utilization of fire and rescue vehicles.
  - **Equipment.** Assessment of sufficiency and functionality of emergency response equipment.
- **Resource Assessments.** Comparison of AFD to other entities, best practices, and benchmarks for funding, staffing, and fees. This could include an analysis of staffing models and staffing ratios.
- **Planning Assessments.** Evaluation of the effectiveness of planning efforts, including:
  - Increased service demands due to annexations and increased downtown density.
  - Emergency Service Districts (ESDs) issues related to standards, strategy, coordination, and legal issues
  - Balance of resources in meeting essential needs while working within the constraints of limited funding, accountability to the public, and the collective bargaining agreement, state and federal laws.
- **Training Assessments,** evaluating the effectiveness of and issues impacting training:
  - Sufficiency of training management, staffing, equipment, and apparatus for training.
  - Sufficiency of training types, content, and methods.

We would like to thank the management and staff of the Austin Fire Department for their cooperation and their commitment to this process. Without their full participation this project could not have been completed.



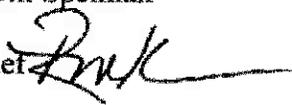
**APPENDIX A**  
**MANAGEMENT RESPONSE**





## MEMORANDUM

**TO:** Audit and Finance Committee Members  
Mayor Pro Tem Mike Martinez  
Council Member Sheryl Cole  
Council Member Laura Morrison  
Council Member Randi Shade  
Council Member Bill Spelman

**FROM:** Rhoda Mae Kerr, Fire Chief 

**DATE:** June 21, 2010

**SUBJECT:** Response to Risk Assessment of the Austin Fire Department

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Austin firefighters provide a wide array of services efficiently and effectively to our citizens. They are well-equipped and well-trained, as demonstrated most recently during the Echelon incident in which our firefighters were thrust onto the national and international stage, and performed magnificently. Some additional examples of our commitment to excellence include the men and women of the Austin Fire Department who take on a vital first responder medical role, are integral to the creation of national fire codes, and have established such impressive standards that we have an arson clearance rate that is well above the rest of the country. We take our responsibility with our regional partners very seriously through aid agreements, emergency dispatching, and joint training.

A significant number of our personnel participated in the City Auditor's risk assessment project – through surveys, face-to-face meetings, and subject matter expert input. The results are not surprising. In fact, they are consistent with many of the challenges raised in current and previous business plans and financial forecasts - four-person staffing, aging infrastructure, compliance with state-mandates, growth, and insufficient support staff. In response to the City's economic realities, we have focused our resources on stop gap measures to respond to these challenges.

The fire service is inherently a risky business – one that we do not take lightly. We invest significant resources to ensure we provide the best training and equipment, as well as the management structure to reduce risk for both firefighters and those we serve.

We welcome this risk assessment as an opportunity to explore ways to further reduce risks to our mission, the public, and our firefighters. As we embark on our comprehensive strategic plan, we intend to utilize all the information collected by the City Auditor's Office to develop strategies for improvements.

