



CITY OF SAN ANTONIO

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August 19, 2014

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SUBJECT: Audit Report of the Fire Department New Building Fire Inspections

Mayor and Council Members:

We are pleased to send you the final report of the Fire Department New Building Fire Inspections. This audit began in December 2013 and concluded with an exit meeting with department management in June 2014. Management's verbatim response is included in Appendix B of the report. The Fire Department management and staff should be commended for their cooperation and assistance during this audit.

The Office of the City Auditor is available to discuss this report with you individually at your convenience.

Respectfully Submitted,

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
City of San Antonio

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CITY OF SAN ANTONIO
OFFICE OF THE CITY AUDITOR



Audit of the Fire Department
New Building Fire Inspections
Project No. AU14-022
August 19, 2014

Kevin W. Barthold, CPA, CIA, CISA
City Auditor

Executive Summary

As part of our annual Audit Plan approved by City Council, and as requested by City management, we conducted an audit of the San Antonio Fire Department's (SAFD's) new building fire inspection process. The audit objective, conclusions, and recommendations follow:

Are controls over the SAFD new building fire inspection program adequate to ensure appropriate and timely inspections?

No, controls are not adequate to ensure appropriate and timely SAFD fire inspections for new building construction. The SAFD lacks the tools and mechanisms to adequately deliver efficient, effective, and seamless fire permit and inspection services. Specifically, SAFD firefighters perform their inspections independent from DSD building inspectors and plan reviewers. There is a lack of communication between the two groups who operationally perform their functions differently. Fire inspectors do not use standardized inspection checklists and are not issued adequate computers (e.g. tablets) to actively update the City's system used for permits and inspections (Hansen system) while in the field. SAFD does not have adequate performance measures to ensure effectiveness and efficiency performing new building fire inspections. Finally, SAFD fire inspectors are not given periodic performance evaluations and their inspections are not subject to quality control reviews.

We recommend that the Chief of the Fire Department:

- Establish a collaborative foundation for DSD fire plan reviews and SAFD fire inspections to be performed in a coordinated and seamless manner to improve the overall fire inspection process.
- Develop inspection checklists and a quality control review program to ensure the quality and consistency of fire inspections.
- Replace the current fire inspector laptops for tablets equipped with GPS software and require fire inspectors to update the Hansen system at the conclusion of each inspection.
- Develop appropriate performance measures in order to provide decision makers with reliable and accurate measures of program outcomes and impacts. Resulting measures should be incorporated into employee performance evaluations.

City management and SAFD management verbatim responses are in Appendix B on page 9.

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Background

The San Antonio Fire Department (SAFD) provides fire prevention, fire suppression, emergency medical service, emergency management, and rescue services to over 1.3 million people covering over 500 square miles. The SAFD is organized into four major areas: Emergency Services, Administrative Services, Support Services, and Fire Prevention.

The Fire Prevention Division, which includes the City's Fire Marshal, is comprised of 27 uniform personnel and four civilian staff who are collectively responsible for inspections, investigations, code enforcement, and education. The Fire Prevention Division's Inspections Section is led by a Division Chief and includes three Captains, nine lieutenants, and three civilian staff who are responsible for the following types of inspections:

1. State required annual inspections of child daycare facilities, foster homes, adult daycare facilities, hospitals, nursing homes, laboratories, clinics and rehabilitation facilities, bonded warehouses, schools, and apartment complexes
2. Above ground and underground fuel storage tanks
3. Waste oil combustible liquid tanks
4. Special events
5. Mobile food vendors
6. Fire lanes
7. Spray paint booths
8. Fire hydrants
9. High risk facilities identified by third-party fire prevention companies
10. New and modified sprinkler systems
11. New and modified fire alarm systems
12. Final fire inspections related to new construction which are required for a Certificate of Occupancy

Development Services Department

As part of the Plans and Permits Section of the Development Services Department (DSD) Building Development Division, the Fire Protection Review Team is responsible for the evaluation of proposed new construction plans for compliance with the City's fire code which encompasses the 2012 International Fire Code and National Fire Protection Agency (NFPA) recommendations. This team also reviews design documents for fire alarm, fire sprinkler, standpipe, fire hydrant, fire main and gaseous suppression systems. Once plans are approved, customers are issued permits which allow them to begin the building process. Throughout the building process, customers contact the Fire Prevention Division

to schedule their fire inspections which could include sprinkler systems, fire alarm systems, fire lane, pressure test, or final fire inspection. The final fire inspection is the last inspection required for customers prior to receiving their certificate of occupancy in order to open for business.

The Inspections Section of the Building Development Division is the primary field enforcement agency for the Development Services Department for all permitted construction activity. The Inspections Section of the Building Development Division is comprised of two managers and 62 field inspectors. As part of the overall development process, building-related code inspections are performed on various aspects of building construction including foundation/framing, electrical, mechanical, and plumbing. See the table below for a breakdown of inspections performed in fiscal years (FY) 2012 and 2013 by inspection type.

Total Number of Inspections (DSD & SAFD)		
Inspection Type	FY 2012	FY 2013
DSD		
Building (foundation/framing)	25,685	27,322
Electrical	35,699	37,109
Mechanical	24,369	23,872
Plumbing	54,606	57,027
Total DSD Inspections	140,359	145,330
SAFD		
Fire Systems/Building Inspections ¹	10,767	11,907
Other Fire Inspections, Cases, Investigations ²	19,741	14,077
Total SAFD Inspections	30,508	25,984
GRAND TOTAL	170,867	171,314

¹ Includes new and modified sprinkler systems, alarm systems, and final fire inspections.

² Includes fire investigations, hazardous material, inspections of food booths, and required annual inspections of apartments, schools, and restaurants, etc.

Audit Scope and Methodology

The audit scope was from October 2011 to September 2013. We performed testing from January 2014 through April 2014.

We interviewed SAFD and DSD management and staff to gain an understanding of the fire inspection process including plan submittals and plan review, granting fire permits, scheduling and performing fire inspections, and the Certificate of Occupancy process for new building construction.

To establish testing criteria, we reviewed the following:

- SAFD policies and procedures
- DSD policies and procedures
- Hansen system reports and queries
- Information Bulletins published by DSD and the Fire Marshal's Office
- Studies performed by independent consultants

During the course of the audit, we reviewed SAFD's Fire Prevention Division training requirements which include the successful completion of the Inspector certification program by the Texas Commission on Fire Protection and a 6-month in-house Inspector training program. We also reviewed DSD's inspector training requirements which include a 12-week training program and a requirement that all DSD inspectors to be certified by the International Code Council (ICC) within one year of employment. Both the Texas Commission and ICC certifications meet the City's requirements for performing fire inspections.

We rode along with SAFD fire and DSD building inspectors and attended monthly inspector meetings to get a better understanding of the similarities and the differences between the two departments.

We interviewed a number of fire protection engineering firms that work closely with SAFD and DSD to gain their perspectives and experiences with the City's fire plan review and inspection process. Furthermore, we interviewed DSD and Fire Department management and staff of other municipalities in order to perform a comparative analysis.

Our audit focused primarily on new building fire inspections and did not include other inspections such as hazardous material inspections, special events, or state required annual inspections.

We relied on computer-processed data in the Hansen System, the City's permitting and inspection system of record. Our reliance was based on performing direct tests on the data rather than evaluating the system's general and application controls. We do not believe that the absence of testing general and application controls had an effect on the results of our audit.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Results and Recommendations

A. New Building Permitting and Inspection Process

The SAFD lacks the tools and mechanisms to adequately deliver efficient, effective, and seamless fire permit and inspection services.

Lack of Performance Measures, Evaluations, and Performance Reviews

Currently, the SAFD only utilizes one performance measure which relates to total fire inspections performed. This is insufficient to provide context to effectiveness and efficiency. Furthermore, SAFD fire inspectors are not given periodic performance evaluations and their inspections are not subject to quality control reviews.

Effective performance measures are generally described as relevant to the program, understandable, comparable to internal or external criteria, reliable and communicated effectively to users. Additionally, measures should be linked to the department's overall mission and allow decision makers to understand the operations and outcomes of the department's activities.

Quality control reviews assist department management in identifying areas that may require training or clarification on applying a certain fire code. Furthermore, fire inspectors should be held accountable for their performance through periodic evaluations which will result in a more effective inspection process.

Failure to establish performance measures and provide periodic quality control reviews hinders the ability to ensure performance and/or continuous improvement objectives are being met.

Lack of Inspection Checklists

SAFD fire inspectors do not use a standardized inspection checklist. An inspection checklist acts as a guide to ensure that items are not missed or overlooked and inspections are conducted under the same criteria. Lacking standardized inspection checklists, accountability is lost and inconsistent inspections result among inspectors.

Insufficient Hardware

SAFD fire inspectors are not issued adequate computers (e.g. tablets) to actively update the Hansen system while in the field.

Currently, fire inspectors are issued a laptop and air card (providing a mobile Internet connection) in order to perform their daily functions. However, the air card loses connection throughout the day, and inspectors do not like to carry bulky laptops with them, thus hampering the inspection process.

For the last three years, DSD inspectors have been using light-weight tablets that keep a constant connection which enable their inspectors to update the Hansen system in real-time with notes (e.g. accurate inspection start and end times). Additionally, the tablets are installed with GPS software which allows DSD supervisors to actively monitor their team's progress.

As a result, the Hansen application is not being updated by SAFD inspectors at the conclusion of each fire inspection. At the end of their shift, the fire inspector updates Hansen from his/her home computer or fire station computer which results in inaccurate start and end times and/or incomplete inspection notes. Our review of Hansen system data revealed that for FY 2013, 73% of SAFD fire inspections were started and completed in less than 1 minute - showing that the data was entered at shift-end rather than during the inspection. This prevents SAFD management from accurately evaluating inspectors' time to complete inspections (which should be neither too short nor too long).

Lack of Coordination with DSD

Fire inspectors are uniformed SAFD firefighters who perform their inspections independently from DSD building inspectors and plan reviewers. There is little if any open communication between the two groups who operationally perform their functions differently.

Lacking open communication, inconsistencies occur between the two groups when interpreting fire codes. SAFD code interpretations that differ from DSD interpretations result in failed inspections and customer frustration (e.g. building delays and cost overruns).

In 2007, DSD was reviewed by Zucker Systems, an independent consultant specializing in planning, building, and engineering departments for cities and counties. Their report concluded that having fire plan reviews and fire inspections performed by separate departments is unusual and recommended DSD institute regular meetings with SAFD to establish a uniform application of the code. This recommendation was not adequately implemented.

Recommendations

We recommend the Chief of the Fire Department:

A.1 Establish a collaborative foundation for DSD fire plan reviews and SAFD fire inspections to be performed in a coordinated and seamless manner to improve the overall fire inspection process.

A.2 Develop inspection checklists and a quality control review program to ensure the quality and consistency of fire inspections.

A.3 Replace the current fire inspector laptops for tablets equipped with GPS software and require fire inspectors to update Hansen at the conclusion of each inspection.

A.4 Develop appropriate performance measures in order to provide decision makers with reliable and accurate measures of program outcomes and impacts. Resulting measures should be incorporated into employee performance evaluations.

Appendix A – Staff Acknowledgement

Mark Bigler, CPA-Utah, CISA, CFE, Audit Manager
Gabriel Trevino, CISA, Auditor in Charge

Appendix B – Management Response



CITY OF SAN ANTONIO

P.O. Box 839966
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August 8, 2014

Kevin W. Barthold, CPA, CIA, CISA
City Auditor
San Antonio, Texas

RE: Management's Corrective Action Plan for San Antonio Fire Department – New Building Fire Inspections

The San Antonio Fire Department has reviewed the audit report and has developed the Corrective Action Plans below corresponding to report recommendations.

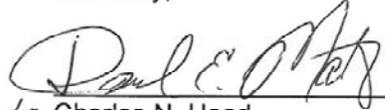
Recommendation					
#	Description	Audit Report Page	Accept, Decline	Responsible Person's Name/Title	Completion Date
1	<p>Lack of Performance Measures, Evaluations, and Performance Reviews</p> <p>Recommendation Develop appropriate performance measures in order to provide decision makers with reliable and accurate measures of program outcomes and impacts. Resulting measures should be incorporated into employee performance evaluations.</p>	Page 7	Accept	Deputy Fire Chief Carl Wedge	<ul style="list-style-type: none"> Quality Control Reviews (Sept 2014) Employee Performance Evaluations (Oct 2014)

Recommendation					
#	Description	Audit Report Page	Accept, Decline	Responsible Person's Name/Title	Completion Date
	<p>Action plan:</p> <p><i>A. Performance Measures:</i></p> <ul style="list-style-type: none"> • The SAFD is establishing cycle time performance goal measure of 95% of inspections performed as scheduled. • The SAFD is establishing an inspection tracking model with the collaboration of the Development Services Department that is similar to the one they use. It will be able to document and track inspection time averages and inspection percentages completed to assist supervisors with gauging staff performance against the department's cycle time goals for inspections. • Completion of the tracking model will be by September 1, 2014. Accurate measures can be expected when all staff has been issued and trained on the new tablet technology being purchased. <p><i>B. Performance Evaluations and Reviews</i></p> <ul style="list-style-type: none"> • The SAFD will develop and utilize a fire inspector specific employee performance evaluation system. The performance criteria will include the three goals of (1) cycle time, (2) consistency and quality of inspections, and (3) a customer service philosophy of facilitation. Inspectors will attend an annual formal planning session where expectations of work performance and behavior are clearly communicated. Evaluations with the employee's supervisor will be conducted at six month intervals. • The SAFD is developing a monthly Quality Control Review checklist form that each supervisor will use to evaluate employees. All inspectors will have a minimum of one inspection every month witnessed by their supervisor who will complete the QCR. The QCR gives the supervisor a review and training opportunity to identify and correct issues prior to the six month evaluation. All QCR's will become part of the employee's Performance Evaluation. • Quality Control Reviews (QCR) will begin in September 2014 • Employee performance evaluations will start in October 2014 with the formal planning session. 				
2	<p>Lack of Inspection Checklists</p> <p>Recommendation Develop inspection checklists and a quality control review program to ensure the quality and consistency of fire inspections.</p>	Page 7	Accept	Deputy Fire Chief Carl Wedige	September 1, 2014
	<p>Action plan:</p> <ul style="list-style-type: none"> • The SAFD currently has written guidelines for all inspection types. Checklists for many inspection types were developed prior to the 2012 code adoption but were not updated. The SAFD will update all inspection guidelines into a checklist format that inspectors can electronically reference when conducting their inspections. • Supervisors will ensure and monitor checklist use during Quality Control Review inspections conducted on a monthly basis. 				

Recommendation					
#	Description	Audit Report Page	Accept, Decline	Responsible Person's Name/Title	Completion Date
3	<p>Insufficient Hardware</p> <p>Recommendation Replace the current fire inspector laptops for tablets equipped with GPS software and require fire inspectors to update Hansen at the conclusion of each inspection.</p>	Page 7	Accept	Deputy Fire Chief Carl Wedige	<ul style="list-style-type: none"> • Tablets (September 1, 2014) • HANSEN upgrades (FY2015)
<p>Action plan:</p> <ul style="list-style-type: none"> • The SAFD ordered 8 tablets in July 2014 to replace laptops. The remainder is expected to be replaced by September 1, 2014. • In conjunction with DSD, SAFD is making several upgrades to the Hansen system to mirror programs implemented by DSD. For example, customers now receive email notifications when key events occur on a permit such as a plan review or an inspection. SAFD is working closely with ITSD to enhance the Inspection Scheduler App, which will allow customers to schedule fire inspections using their Smartphone or computer. This customer service enhancement will be implemented in four phases. Each phase will include additional inspection types and is expected to be completed in early FY2015. In addition, SAFD is working with ITSD and DSD to accept fire system permit applications electronically. This green initiative will save the customer the expense of traveling to the DBS Center and printing plans. 					
4	<p>Lack of Coordination with DSD</p> <p>Recommendation Establish a collaborative foundation for DSD fire plan reviews and SAFD fire inspections to be performed in a coordinated and seamless manner to improve the overall fire inspection process.</p>	Page 7	Accept	Deputy Fire Chief Carl Wedige	Completed
<p>Action plan:</p> <ul style="list-style-type: none"> • The SAFD has been working closely with DSD since the recent management change within the Fire Marshal's Office (May 2014) to establish a coordinated approach to improve the inspection process. • Multiple coordination meetings have been conducted throughout the levels of SAFD management and DSD to strengthen the working relationship and review policies and practices affecting both groups. • Joint information bulletins have been issued that improves customer service and assist in the development process as it relates to Fire review and inspection. • DSD and SAFD have established, and worked with existing, stakeholder groups to review code interpretations and receive input prior to issuance. • The SAFD has ensured that a representative is present, along with DSD, at stakeholder meetings and standing development process committee meetings to answer questions and concerns and show a united commitment to customer service. 					

We are committed to addressing the recommendations in the audit report and the plan of actions presented above.

Sincerely,


for Charles N. Hood

Fire Chief
San Antonio Fire Department

8/8/14
Date



Erik Walsh
Deputy City Manager
City Manager's Office

8/8/14
Date