

**OFFICE OF THE CITY CONTROLLER**



**HOUSTON FIRE DEPARTMENT  
LIFE SAFETY BUREAU PERFORMANCE AUDIT**

**Chris B. Brown, City Controller**

**Courtney E. Smith, City Auditor**



**OFFICE OF THE CITY CONTROLLER  
CITY OF HOUSTON  
TEXAS**

**CHRIS B. BROWN**

June 14, 2017

The Honorable Sylvester Turner, Mayor  
City of Houston, Texas

**SUBJECT: 2017-10 Houston Fire Department (HFD)  
Life Safety Bureau Performance Audit**

Mayor Turner:

The Office of the City Controller's Audit Division contracted the professional services of Vanessa M. Johnson, CPA, LLC to complete a performance audit of the Houston Fire Department's Life Safety Bureau (LSB), which is under the oversight of the Fire Marshal's Office. The major components of LSB operations include inspections, permitting, fire prevention education, code enforcement, and code development. These operations are vital to ensure a safe and secure community for Houston's citizens and visitors.

The primary objectives of this audit were:

- Assess internal controls, structure, operational and management practices;
- Examine operational practices, resources, technology, and training practices;
- Assess the structure and management practices of LSB related to effective resource deployment; and
- Provide practical recommendations for improving coordination and processes, overall cost efficiency and effectiveness of LSB functions.

Our engagement scope included operations and transactions occurring during Fiscal Year (FY) 2015 and FY 2016.

The audit noted the primary strengths of the LSB function as:

- LSB is staffed with certified fire inspectors who are knowledgeable of Fire Code regulations and LSB Standards.
- LSB has certified instructors, referred to as District Training Officers, who educate inspectors on fire code developments.

The attached report identifies twenty-eight (28) opportunities to improve the effectiveness and efficiency of LSB operations. The findings in the report relate to the following ten (10) categories:

| CATEGORIES OF FINDINGS |                          |
|------------------------|--------------------------|
| Communication          | Information Technology   |
| Internal Controls      | Organizational Structure |
| Policies               | Program Design           |
| Recordkeeping          | Reporting                |
| Resources              | Training                 |



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TEXAS**

**CHRIS B. BROWN**

We would like to express our appreciation to the management and staff of HFD for their time and effort, responsiveness, and cooperation during the course of the audit.

Respectfully submitted,

Chris B. Brown  
City Controller

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Houston Fire Dept.  
Life Safety Bureau  
Performance Audit



Report Date: 6.8.17

Performed by  
Vanessa M. Johnson, CPA, LLC



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## EXECUTIVE SUMMARY

### INTRODUCTION

The City of Houston engaged Vanessa M. Johnson, CPA, LLC (VMJ CPA) to conduct an independent performance audit of the Houston Fire Department Life Safety Bureau Division (LSB). We have completed the audit and noted primary strengths of the LSB function:

- LSB is staffed with certified fire inspectors who are knowledgeable of Fire Code regulations and LSB Standards.
- LSB has certified instructors, referred to as District Training Officers, who educate inspectors on fire code developments.

### BACKGROUND

The Fire Marshal's Office is part of the Houston Fire Department's (HFD) Prevention/Planning & Homeland Security Command. The Fire Marshal's Office oversees the Arson and Life Safety Bureaus, as well as certain permitting activities related to fire prevention permits. LSB is responsible for inspection, enforcement, permitting, and code development activities, which are the major components of LSB's operations.

The Office of the City Controller engaged Mir, Fox, & Rodriguez, P.C. in 2005 to conduct a performance audit of LSB. The audit, published in September 2005, resulted in several recommendations to improve internal controls and operational efficiency. Over the past several years, HFD management commissioned various firms to conduct studies of LSB's operations with the most recent being the Response Time and Staffing Analysis Model for HFD by FACETS Consulting in 2016. The FACETS study provided several recommendations to improve LSB's operational practices. Some of the FACETS study observations and recommendations mirror those provided by the Mir, Fox, & Rodriguez audit team in 2005.

During the last few years, LSB has experienced the following structural changes:

- Chief Ford was appointed Fire Marshal, responsible for oversight of the Life Safety Bureau and Public Education in March 2015.
- The Hotel/Motel specialized inspection team was created in October 2015.
- The Research & Development/Code Enforcement team was created approximately 2 years ago.
- The LSB vehicle management was restructured under the City's Fleet Management Department.



- District 4 was added to the General Occupancy Inspection Team.

### AUDIT SCOPE & OBJECTIVES

We conducted the performance audit for the periods of FY2015 (July 2014- June 2015) and FY2016 (July 2015-June 2016). Due to the unavailability of data and inspection records, the scope of our audit was limited in some areas for the FY2015 audit period. The refined objectives of this engagement were to review and test transactions and operational activities in conducting the performance audit to:

1. Assess internal controls, structure, operational and management practices;
2. Examine operational practices, resources, technology, and training practices;
3. Assess the structure and management practices of LSB related to effective resource deployment, and
4. Provide practical recommendations for improving coordination and processes, overall cost efficiency, and effectiveness of LSB functions.

Our audit and work product are intended for the benefit and use of the City of Houston only. The audit was not planned or conducted in contemplation of reliance by any other party or with respect to any specific transaction and is not intended to benefit or influence any other party. Therefore, items of possible interest to a third party may not be specifically addressed or matters may exist that could be assessed differently by a third party.

### PROCEDURES PERFORMED

We conducted our planning and fieldwork from January 2017-March 2017. The engagement team performed the following tasks in conducting this performance audit:

- Held an entrance conference on January 26, 2017 to confirm the engagement agreement, discuss any concerns or issues of management, set expectations, clearly identify the lines of communication, and establish a preliminary timetable to ensure a smooth audit process;
- Conducted interviews with key personnel throughout LSB;
- Conducted necessary research to identify best practices, industry standards, & laws and regulations related to fire prevention programs;
- Performed site visits and walkthroughs at various locations, including schools, warehouses, hospitals, nursing homes, hotels, etc. for observation of procedures discussed with key personnel;



- Reviewed policies, procedures, and key documents, such as the Houston Fire Code, LSB Standards, applicable National Fire Protection Association (NFPA) Standards, City ordinances, Texas Commission on Fire Prevention regulations, LSB Guidelines, and other relevant information for training and fire prevention education;
- Evaluated applicable operational practices, technology tools, and internal controls;
- Performed a risk assessment to identify, assess, and prioritize risks to develop a risk-based approach for audit programs;
- Performed analytical procedures;
- Mapped risks and controls to key processes and performed a gap analysis of the end-to-end process flow of information and transactions;
- Developed sampling plans for testing, including the nature, timing, and extent (NTE);
- Performed tests of controls operating effectiveness;
- Examined pertinent documents and records, training documentation, inspection reports, checklists, photographs, reconciliations, financial records, and other supportive evidence;
- Tested compliance with established or stated policies and procedures;
- Tested compliance with applicable City ordinances, state, and national regulations, and
- Held an exit conference on April 25, 2017.

## AUDIT METHODOLOGY

We conducted this performance audit in accordance with Generally Accepted Governmental Auditing Standards and in conformance with the International Standards for the Professional Practice of Internal Auditing. Those standards require that we plan and perform the audit to obtain sufficient and appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives.

The scope of our work did not constitute an evaluation of the overall internal control structure of LSB or HFD. Management is responsible for establishing and maintaining a system of internal controls to ensure that City assets are safeguarded; financial activity is accurately reported and reliable; and management and employees are in compliance with laws, regulations, and policies and procedures. The objective is to provide management with reasonable, but not absolute assurance that the controls are in place and effective.



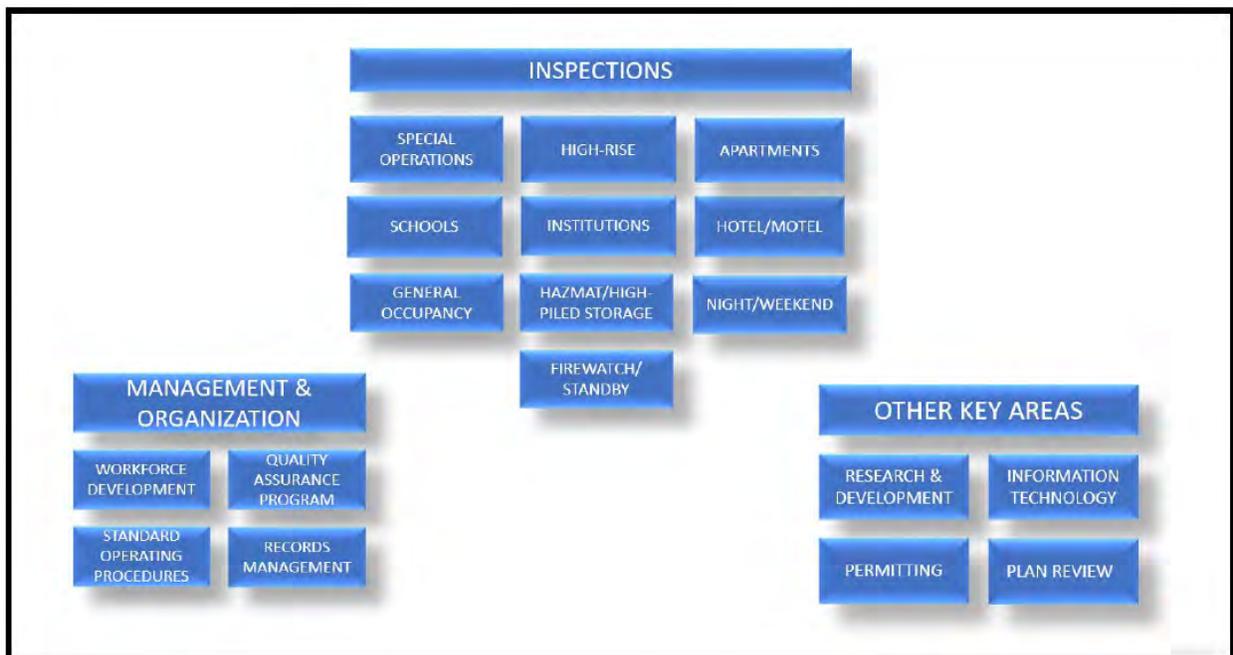
**RISK ASSESSMENT FRAMEWORK**

The steps taken in performing the risk assessment of the performance audit satisfy the International Standards for the Professional Practice of Internal Auditing and Generally Accepted Government Auditing Standards (GAGAS). The risk assessment process was performed as part of our planning and application and development procedures. The risk assessment process consisted of: 1) Understanding the LSB activities and operations, 2) Developing the Risk Profile, 3) Assessing and Prioritizing Risks, and 4) Developing the Risk- Based Audit Plan's specific programs.

**1. Understanding LSB's Activities and Operations**

We began the risk assessment process by gaining an understanding of LSB's internal control environment, key business processes, activities, operations, roles and responsibilities, and interactions with third parties by performing inquiries and interviews with key personnel. In addition, we inspected relevant documentation, reviewed applicable laws and regulations, examined IT systems, applications, and software, and performed site visits to observe operations, equipment and infrastructure, and other critical aspects of LSB. We mapped key business processes and systems to the goals, objectives, and key performance indicators (KPIs) to develop the audit universe (Figure 1) for LSB that was used in developing the Risk Profile.

**FIGURE 1**



## 2. Developing the Risk Profile

Once an understanding of LSB's key business processes was obtained and documented, we identified LSB's specific risks and combined those with the inherent risks that are pervasive within LSB. Utilizing the identified audit universe, we identified the most significant risk categories, grouped identified risks into those categories, and customized risk definitions for each risk category. VMJ CPA's Risk Register and Risk Libraries were leveraged when developing the risk model for LSB.

## 3. Assessing and Prioritizing Risks

In evaluating the impact and likelihood of the risks, both quantitative and qualitative factors were considered. These risk factors (criteria) included the following:

- Complexity of operations
- Public interest
- Financial impact
- Human resources/Workforce
- Regulatory/compliance
- Time since last audit
- Public and firefighter/Emergency Response safety
- Control Environment
- Process/System Maturity and Degree of Change
- Reliance on external parties (this could include other City departments or third parties)
- Information Technology
- Budget Constraints

The risks were then assigned a ranking to assess impact and likelihood. For each process, we established a ranking of the vulnerability of LSB to the various risks within the process and the significance of the impact the risk could have on LSB. An overall ranking of high, medium, or low was assessed for each process. The risk assessment results were the primary driver in developing specific audit programs for the audit areas identified.

## 4. Developing the Risk-Based Audit Plan's Specific Programs

Once the risk assessment results were evaluated, we developed audit programs that focused on evaluating controls and key performance indicators, which mitigate key risks related to LSB's significant



operational processes. The nature, timing, and extent of procedures performed as part of the audit programs considered the results of the risk assessment.

## CONCLUSIONS & SIGNIFICANT ISSUES

We believe that we have obtained sufficient and appropriate evidence to adequately support the conclusions provided below as required by professional auditing standards. Each conclusion is aligned with the related Audit Objective for consistency and reference. For detailed findings, recommendations, management responses, comments and assessment of responses, see the “Detailed Findings, Recommendations, Management Responses, and Assessment of Responses” section of this report.

### CONCLUSION 1 – (AUDIT OBJECTIVE #1)

Based on audit procedures performed, there is a need to strengthen internal controls over quality assurance and recordkeeping; re-evaluate the roles/responsibilities and organizational structure of LSB; and implement best practices for optimum operational and management performance. (See Findings #8, #9, #12, #14, #15, #16, #17, #20)

### CONCLUSION 2 – (AUDIT OBJECTIVE #2)

Based on audit procedures performed, there is a need to develop a comprehensive professional development program; acquire and utilize a comprehensive integrated inspection software and database; ensure resources are made available to personnel to facilitate productivity; and best practices are implemented for optimum operational performance. (See Findings #2, #10, #11, #21, #22, #23, #26, #27, and #28)

### CONCLUSION 3 – (AUDIT OBJECTIVE #3)

Based on audit procedures performed, there is a need to develop a comprehensive risk-based approach to performing inspections so that inspector assignments can target higher risk areas. Moreover, the permitting fee structure should be evaluated to ensure costs are fully recovered for providing fire-watch/standby services. (See Findings #1, #13, #18, #19, and #25)

### CONCLUSION 4 – (AUDIT OBJECTIVE #4)

Based on audit procedures performed, overall, LSB has opportunities to improve communications and coordination throughout LSB and other HFD divisions and City departments, as well as develop standard operating procedures and policies that promote operating efficiently and effectively to execute LSB's initiatives. (See Findings #3, #4, #5, #6, #7, and #24)



We identified in the audit report 28 opportunities to improve effectiveness and efficiency of LSB operations. A summary of those opportunities are listed in Table 1 below:

| TABLE 1 - SUMMARY OF FINDINGS   |           |  |      |
|---------------------------------|-----------|--|------|
| Category                        | Finding # | Title  | Page |
| <i>Communication</i>            | 4         | Lack of Communication Between LSB and Other HFD Divisions                            | 19   |
|                                 | 5         | Fragmented Lines of Interdepartmental Communication                                  | 21   |
|                                 | 6         | Ineffective Communication within LSB   | 22   |
|                                 | 7         | LSB Website Information is Not Current & User Friendly                               | 24   |
| <i>Information Technology</i>   | 28        | Lack of Comprehensive Inspection Software and Database                               | 63   |
| <i>Internal Controls</i>        | 14        | Population of Facilities to be Inspected Cannot be Verified as Complete and Accurate | 35   |
|                                 | 15        | Inspections Performed Inconsistently   | 37   |
|                                 | 17        | Inadequate Quality Assurance Program   | 42   |
|                                 | 20        | No Evidence of Review and Approval for Fire Safety and Evacuation Plans              | 49   |
|                                 | 24        | Apartment Inspection Team Lacks Coordination and Communication                       | 57   |
| <i>Organizational Structure</i> | 8         | Mid-Rise Atrium Inspector is Assigned to an Incompatible Team                        | 25   |
|                                 | 9         | Assistant Fire Marshal and Chief Tasks Are Similar                                   | 26   |
| <i>Policies</i>                 | 3         | Policies and Procedures Not Adequately Defined and Updated                           | 17   |
| <i>Program Design</i>           | 1         | No Comprehensive Risk-Based Approach to Inspections                                  | 12   |
|                                 | 2         | Fire Code Enforcement Program Not Adequately Designed                                | 14   |
|                                 | 19        | No Established Inspection Cycle  | 46   |

identified and corrective actions are appropriate.



TABLE 1 - SUMMARY OF FINDINGS

| Category             | Finding # | Title   | Page |
|----------------------|-----------|---|------|
| <i>Recordkeeping</i> | 10        | Compliance with Texas Commission of Fire Prevention Requirements Not Properly Reflected | 28   |
|                      | 12        | Inadequate Recordkeeping Practices  | 32   |
|                      | 16        | Inspection Records Are Incomplete, Unavailable or Non-Existent                          | 39   |
| <i>Reporting</i>     | 18        | Inspection Reports do not Reflect Current Fire Code Requirements                        | 44   |
|                      | 27        | Number of Completed Inspections Reported is Inaccurate                                  | 61   |
| <i>Resources</i>     | 13        | LSB Consistently Exceeds Approved Budget  | 33   |
|                      | 21        | Transportation Reliability Challenges Exist   | 51   |
|                      | 22        | Inspection Teams Are Understaffed   | 53   |
|                      | 23        | Lack of Resources to Meet Fire Prevention/Life Safety Program Needs                     | 55   |
|                      | 25        | No Coverage During Specific Weekend Hours   | 58   |
|                      | 26        | No Fire Protection Engineers Within LSB   | 60   |
| <i>Training</i>      | 11        | No Professional Development Program   | 30   |

identified and corrective actions are appropriate.



VANESSA M. JOHNSON, CPA, LLC  
INTERNAL AUDIT | SOX | PROCESS IMPROVEMENT



## ACKNOWLEDGEMENT & SIGNATURES

The Audit Team would like to thank LSB for their cooperation, time, and efforts throughout the course of the engagement.

*Vanessa M. Johnson*

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Vanessa M. Johnson, MBA, CPA, CIA  
Managing Director



**DETAILED FINDINGS, RECOMMENDATIONS, MANAGEMENT RESPONSES, AND ASSESSMENT OF RESPONSES****PROGRAM DESIGN****Risk Rating - High****Finding #1: No Comprehensive Risk-Based Approach to Inspections**

**Background:** There are nine (9) different inspection teams within LSB, each having its own approach to performing inspections. Most teams assign inspection locations based on zip codes. Inspectors then, perform their daily inspections based on the last date the location was inspected, or whichever may be considered "easier" to inspect in order to meet inspection goals established by LSB's management. Other team inspections are considered permit driven, meaning inspections are triggered based on when fire prevention permits are purchased.

In mid-2015, the 360 Degree Inspection Program was implemented to assist inspectors in performing targeted inspections based on a risk-based approach. According to LSB, this program required building management of high-risk occupancies, such as schools, high-rises, apartments and institutions, to conduct a self-inspection of their facility (pre-inspection report), including all life safety systems, and then forward the report to LSB. The inspectors were to review the report to assist them in being familiar with the buildings' status regarding the maintenance of required fire protection systems. This information is useful in identifying locations that may need an immediate inspection. Requesting the building information prior to conducting the inspection was to improve the efficiency of the field inspector.

**Finding:** The 360 Degree Inspection Program lacks critical components for a comprehensive risk-based approach to ensure program success. In addition, the program initially operated ineffectively, as inspectors were performing analytical inspections on occupancies (hotels/motels, high-rises, and apartments) where general inspections should have been performed. Analytical inspections consisted of providing checklists to occupancy owners to self-inspect their facilities rather than field inspectors performing general inspections. General inspections consist of inspectors performing inspections of the entire building to ensure code compliance and safety standards are practiced on an ongoing basis.

**Recommendation:** We recommend the 360 Degree Inspection Program be developed into a comprehensive risk-based inspection program to incorporate data from Fire Suppression reporting to assist in performing targeted inspections on higher risk locations. In addition, performing a risk



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assessment on all inspection teams to gather factors on the number of fire incidents for specific occupancy types, repeat violations, insurance ratings on buildings, most populated areas within the city, etc. will provide valuable information when assessing and prioritizing locations. Some specialized teams have characteristics that may warrant a different methodology to be utilized within the risk assessment, such as the Hazmat/High-Piled Storage Inspection Team.

All approaches and methodologies to the inspection process should be documented and evaluated on a periodic basis to assess risk assessment procedures that may be impacted by the growth, process changes, or other relevant risk factors. This process will also facilitate consistency and efficiency within the teams.

**LSB's Management Response:** Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly a scheduling engine was developed that prioritizes and schedules all future inspections. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## PROGRAM DESIGN

### Risk Rating - High

#### Finding #2: Fire Code Enforcement Program Not Adequately Designed

**Background:** The City's Building Code Enforcement Branch (BCE) of the Houston Permitting Center and LSB work jointly with several key processes to ensure compliance with established safety laws and regulations pertaining to buildings and its occupants. According to BCE guidelines, a Certificate of Occupancy (COO) must be obtained before a commercial building or an individual lease space within a commercial building may be occupied, or if changes to an existing occupancy classification are made. BCE receives all applications for COO requests, in addition to, all architectural and construction plans for proposed buildings, new developments, and major modifications to existing buildings.

BCE forwards plans to the Fire Marshal's Plan Review Team (part of LSB) where a review of the building's fire protection systems (fire alarm systems, sprinklers, and standpipes) are reviewed to ensure compliance with the Fire Code. In addition, the Plan Review Team performs onsite consultations and inspections with building developers and construction contractors to discuss plans, address issues that arise related to the design or placement of fire protection systems, and ensure the systems were installed as designed on approved plans.

However, the Plan Review Team's processes are limited to review and inspection of only certain fire protection systems (fire alarms, sprinklers, and standpipes). There is no comprehensive plan review and inspection of all occupancy types requiring fire protection systems and certain fire prevention permits prior to the issuance of the COO. The code enforcement program (Houston Fire Code) is not adequately designed to ensure compliance with applicable fire protection laws and LSB objectives prior to the issuance of building occupancy certificates.

**Finding:** Chapter 1, Section 105.3.3 of the International Fire Code (IFC) states the following:

*"The building or structure shall not be occupied prior to the fire code official issuing a permit and conducting associated inspections indicating the applicable provisions of this code have been met."*

Chapter 1, Section 105.3.3 of the International Fire Code (IFC) was amended in the 2006 and 2012 Houston Fire Code (HFC) to state the following:

*"Occupancy prohibited before approval. The building or structure shall not be occupied prior to the building official issuing a certificate of occupancy in accordance with the Building Code."*



The reference to the Fire Official issuing a permit and conducting associated inspections indicating applicable provisions of the Fire Code have been met was eliminated. With this provision removed, the code enforcement program is not adequately designed to minimize the risk of buildings that are not Fire Code compliant operating without the required fire prevention permits and inspections.

Moreover, during our onsite inspection walkthroughs with field inspectors, we observed locations where fire apparatus accessibility was inadequate, building exit signage was incorrect, and required fire prevention permits were not acquired/maintained.

There are nine (9) inspections teams within LSB enforcing the Fire Code for various occupancy types, which include, but are not limited to, schools, hospitals, hazardous material warehouses, apartments, airports, high-rises, hotels/motels, day cares, nursing homes, shopping centers, and major event venues. There are no requirements for comprehensive reviews and inspections to be performed by LSB prior to COO issuances. However, the Hazmat/High-Piled Inspection Team, is the one team within LSB that performs comprehensive reviews and inspections prior to COO issuance. It was noted that the Plan Review Team sometimes notifies inspectors on the various occupancy inspection teams of new construction, but notification is not performed on a consistent basis.

**Recommendation:** We recommend LSB take a proactive approach to fire prevention by designing the fire code enforcement program to require the necessary fire prevention permits to be obtained by building owners and inspections performed by LSB prior to issuance of the COO. Joint efforts can be made to ensure compliance with Fire Code and Building Code regulations by both LSB and BCE, respectively. LSB should perform comprehensive plan reviews and inspections on all occupancy types requiring fire protection systems.

In addition to the current review and inspection process, other fire protection features should be approved and inspected related to fire department access roads to ensure apparatus accessibility, hydrant spacing to ensure an adequate distribution of water supply throughout the property for new buildings, appropriate exit signage, etc., instead of after-the-fact when the structure is complete and the COO is issued.

The Hazmat/High-Piled Storage Inspection Team within LSB performs comprehensive plan reviews and inspections of hazmat/high-piled storage facilities prior to COO issuance, which is a best practice that should be performed for all occupancy types.

**LSB's Management Response:** An ordinance/operational process change must be implemented to require a final inspection from the Houston Fire Marshal's office prior to occupancy or conducting



business in any commercial building.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** September 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## POLICIES

### Risk Rating - High

#### Finding #3: Policies and Procedures Not Adequately Defined and Updated

**Background:** The Houston Fire Department has established guidelines for each of its divisions, which include guidelines for reviewing and updating policies and procedures. HFD Guideline Volume No. 1 Reference No. I-45, Section 6.01 states "All guidelines will be reviewed and revised as necessary, or at least every five years."

In addition to the HFD Guidelines, LSB has its own set of guidelines and Fire Marshal Directives (FMDs) that provide instruction on performing the daily activities of LSB operations.

**Finding:** Policies and procedures are not adequately defined and periodically evaluated and updated to reflect changes in key processes and activities. Below are the results of the review of policies and procedures:

- Six (6) of the fifteen (15) LSB Guidelines has not been updated since 2002 (15 years)
- One (1) LSB Guidelines has not been updated since 2003 (14 years)
- One (1) LSB Guideline since 2004 (13 years)
- Two (2) LSB Guideline since 2008 (9 years)
- One (1) LSB Guideline since 2009 (8 years)
- One (1) LSB Guideline since 2010 (7 years)
- Fire Marshall Directives had not been updated since 2006 (11 years).

Moreover, we performed a gap analysis over documented policies and procedures compared to operational practices and found that documented procedures are outdated due to regulatory changes or change in processes. Policies and procedures that are documented are not adequately defined to provide clear guidance or instructions to carry out the daily activities of LSB in an efficient and effective manner.

During the audit, we were provided with proposed updates for some of the guidelines that are currently under review. However, overall, there are no comprehensive standard operating procedures to provide guidance on internal control activities by supervisors and management, inspection performance, documentation and record keeping guidelines, and overall management of LSB initiatives and processes.



**Recommendation:** The LSB Guidelines and Fire Marshall Directives should be reviewed and updated at least annually to ensure documented processes and key activities within LSB operations remain current. Guidelines should be sufficiently documented and contain detailed instructions to enable management and staff to properly carry-out the operations of LSB. We recommend developing a standard operating procedures manual for the entire LSB Division, rather than certain teams within LSB. Operating procedures should include documented operational guidelines for all teams, including, but not limited to, internal control activities, risk management, best practices, and use of information technology, monitoring/quality assurance, and both internal and external LSB communications.

**LSB's Management Response:** As a policy, development of a functional Life Safety Bureau division manual will be initiated along with a requirement for annual revisions to ensure such manual remains current. Any necessary policy revisions made throughout the year will be communicated via memorandum and deficiencies will be addressed through annually updated policies and training.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** September 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## COMMUNICATION

### Risk Rating - High

#### Finding #4: Lack of Communication Between LSB and Other HFD Divisions

**Background:** Public Education provides education on fire prevention awareness to the community through various programs and activities, such as “Get Alarmed Houston!” Smoke Alarm Program, the SAFE Congregation Program, and through speaking events and presentation. In the past, Public Education was a part of LSB; however, it has been restructured as its own separate division within HFD in Public Affairs. The Public Education Team has developed a risk assessment process using geographic information systems (GIS) to determine areas throughout Houston that have the most fire-related incidents. The data gathered from the GIS dashboard is used to determine the areas in which the team should focus their fire prevention awareness efforts.

The Fire Suppression Division consists of firefighters and emergency response units, which perform rescue missions, extinguish fires, and protect the public from hazardous incidents. When calls are dispatched and Fire Suppression responds to emergencies, these incidents are captured systematically when firefighters enter the incident information into their database. However, this information is not made available to LSB. On the other hand, the inspection reports generated by LSB for various locations are not made available to Fire Suppression.

**Finding:** There is a lack of communication between LSB and other HFD divisions to exchange pertinent information that could benefit the efficiency and effectiveness of operations of Fire Prevention (and HFD holistically). Currently, LSB is not incorporating the metrics for higher risk areas prepared by the Public Education Team into its risk-based approach to perform targeted inspections.

The Suppression Division within HFD currently does not have access to inspection reports generated by inspectors within LSB. There appear to be no smooth channels of communication and a lack of collaboration between the Divisions to exchange critical information that can increase operational effectiveness and efficiency.

**Recommendation:** In the short term, we recommend conducting scheduled periodic meetings between supervisors and Chiefs within LSB and the Suppression Division management to discuss strategies, goals/objectives, and any process changes.

In addition, utilizing metrics provided by the Public Education Team could be beneficial to assist LSB specialized inspection teams in performing targeted inspections for higher risk locations. A longer-term



solution is the acquisition of an integrated software solution that would allow information exchange and access to pertinent data.

**LSB's Management Response:** To improve inter-divisional communication channels, the LSB is evaluating a plan to assign inspectors to each operational fire district throughout the city. The goal is to provide Fire prevention information and training. The implementation of a new Inspection Module and new Records Management System (RMS), scheduled for completion within the next 18-24 months, will allow the LSB to actively share inspection information with Suppression and other divisions in real-time.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2019

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## COMMUNICATION

### Risk Rating - High

#### Finding #5: Fragmented Lines of Interdepartmental Communication

**Background:** LSB and BCE support each other in various key processes to achieve the goals and objectives of LSB operations. Plan documents for new construction and major modifications to existing buildings are submitted to BCE for review and forwarded to the LSB's Plan Checking Team for review of fire protection systems. BCE also performs a review of proposed amendments to the Fire Code whenever a new Fire Code is adopted to ensure there are no provisions that inadvertently impacts the Building Code compliance. Moreover, LSB uses the ILMS database, which was originally designed for the Building Code Enforcement Department, to perform research, prepare for inspections, and maintain inspection documents.

**Finding:** Communication channels between the two departments are not strong and effective. For example, there are instances where Certificate of Occupancies (COO) are issued, but LSB is not notified so that inspections can be performed timely.

Currently, LSB's plan review teams do not have access to files once reviewed and approved. Plan records are maintained with BCE.

**Recommendation:** LSB should have at a minimum read-only access to approved plans in order to operate efficiently on its respective teams. In addition, communication protocols should be established and documented to ensure fire prevention is aware of new construction projects and new COOs issued.

**LSB's Management Response:** To foster better communication between LSB and other City departments, LSB has created a Business Analyst position. This resource will act as liaison between LSB and other departments to facilitate improved knowledge-sharing between the departments to gain better understanding of each other's needs and to more effectively resolve issues. Additionally, the LSB will increase involvement in the construction document review process.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



**COMMUNICATION****Risk Rating - High****Finding #6: Ineffective Communication Within LSB**

**Background:** There have been issues throughout LSB where goals/objectives or process changes from leadership may not have been communicated timely or accurately to ensure proper implementation. It was also reported, based on comments from Inspectors/Supervisors/Chiefs, that feedback may not have been properly communicated or communicated at all to LSB leadership.

**Finding:** There have been no meetings between the Fire Marshal, supervisors, and higher-level management in over a year to discuss goals, objectives, structural and process changes, etc. Additionally, while there are anecdotal references to previous periodic meetings with higher-level management, no meeting minutes are maintained. It was noted that Advisory Committee meetings are being held with volunteered Inspectors, Senior Inspectors, and Chiefs to discuss various topics.

**Recommendation:** We recommend that division-wide meetings should be held with all personnel at least semi-annually to convey information about LSB performance and other HFD information. Meeting topics can include, process changes, inspection performance metrics review, announce and/or celebrate promotions/retirements within LSB, present accolades to high performing inspectors, discuss goals/objectives and strategic plans, solicit ideas for ways to improve operations, and upcoming special projects that inspectors may be interested in working with to improve LSB operations. This could be a great way to boost employee morale and operational effectiveness. Advisory Committee meetings should also be assessed to determine effectiveness for LSB initiatives.

**LSB's Management Response:** The LSB will evaluate the internal communication process to ensure employees are able to easily communicate official business with coworkers and management. The LSB division manual will include mission and vision statements to communicate the overarching goals of the division. The LSB will hold monthly division staff meetings designed to disseminate information, discuss operational issues and generate new ideas.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017



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**Assessment of Management's Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



**COMMUNICATION****Risk Rating - High****Finding #7: LSB Website Is Not Current and User Friendly**

**Background:** The Houston Fire Department has a website to facilitate communication and provide valuable information to the public related to HFD services, operations, and processes. The Fire Marshal's Office has its own section within the website to provide information related to fire prevention and life safety operations and processes.

**Finding:** The LSB website is not updated to reflect 2012 HFC amendments and current inspection team information. In addition, navigating in the website is not user friendly for applicants, website visitors, and/or other parties interested in obtaining information related to LSB and its processes.

We visited the HFD website, Fire Marshal's Division, to obtain information related to LSB processes and key contacts. Information is provided, but located in various places, which makes the information hard to find for someone that needs to understand the LSB processes and procedures. When we tried to access the Inspection Teams' information, this information was not available. Furthermore, the Standards and Code Section does not show the current 2012 HFC code with the local amendments.

**Recommendation:** The website should be updated to reflect current information and properly designed so that site visitors can navigate efficiently to obtain information needed about LSB's processes and key contacts for the different inspection teams.

**LSB's Management Response:** LSB website improvement project will be initiated within the next quarter where a team of select LSB resources (business analyst, inspectors and permit CSRs) will review the current content and make recommendations on the improvements that should be made to the website. Improvements that do not require funding will be implemented immediately and funding related improvements will be prioritized and added to the funding requests in the current or future budget cycle.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## ORAGANIZATIONAL STRUCTURE

Risk Rating - High

### Finding #8: Mid-Rise Atrium Inspector Is Assigned to an Incompatible Team

**Background:** Mid-rise atrium buildings are buildings with an opening extending vertically and connecting three or more stories, and where the highest floor used for human occupancy is 75 feet or less above grade plane. Similar to high-rise buildings, all mid-rise atrium buildings shall comply with all applicable Fire Codes, Building Codes and City ordinances that require alarm or sprinkler retrofit. The Mid-rise atrium inspector and evacuation trainer work together in ensuring Fire Code compliance.

**Finding:** The mid-rise atrium inspector is currently operating under the Special Operations Team. Based on our review of the inspection process for mid-rise atriums, mid-rise atrium inspections are not related to the activities performed under the Special Operations Team.

**Recommendation:** We recommend the mid-rise atrium inspections be performed as part of the High-Rise Inspection Team due to the same nature and extent of processes involved. The mid-rise atrium evacuation trainer is organized as part of the High-Rise Team. To be consistent, the mid-rise atrium inspector should also report to the High-Rise Inspection team.

**LSB's Management Response:** The mid-rise atrium inspections will be positioned as part of the High-rise Inspection Team.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** June 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.

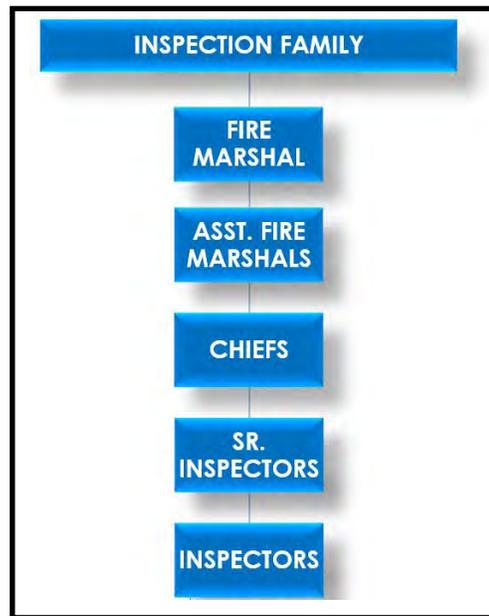


**ORGANIZATIONAL STRUCTURE**

**Risk Rating - High**

**Finding #9: Assistant Fire Marshal and Chiefs Tasks Are Similar**

**Background:** There are currently 4 levels of supervision/management within the LSB Inspection Family:  
 1) Sr. Inspector, 2) Chief, 3) Assistant (Asst.) Fire Marshal, and 4) Fire Marshal.



Each level within the Inspection Family has outlined roles and responsibilities summarized as follows:

- Inspectors: This position is responsible for conducting fire and life safety inspections as required by the Houston Fire Code and by state laws affecting fire and life safety.
- Senior (Sr.) Inspectors: This is an upper supervisory position that is responsible for the command and direction of Inspectors.
- Chiefs: This is a middle management position that is responsible for the command and direction of Sr. Inspectors.



- Assistant (Asst.) Fire Marshals: This is an upper management position involving the command and direction of classified and non-classified personnel related activities, and all associated administrative duties.
- Fire Marshal: This is an executive level management position involving the administration of all Fire Prevention inspection personnel, Arson investigation personnel, and all related activities and special details.

**Finding:** After reviewing the Inspection Family roles and responsibilities and interviewing personnel on what their daily activities consists of, it appears that the Chiefs and Asst. Fire Marshals perform much of the same tasks, which could lead to redundancies and inefficient management practices.

**Recommendation:** We recommend an evaluation of Chiefs and Asst. Fire Marshals' roles and responsibilities to determine if positions should be redefined to ensure effective management practices. Sr. Inspectors are the first line of supervision that manages the daily field operations and inspector assignments. Chiefs should continue to focus on executing strategy, developing risk assessments, performance metrics, comprehensive quality assurance programs, professional development education and training programs, and heading special projects that arise within the division. A flatter organizational structure could improve communication effectiveness and allow major LSB functions to report directly to the Fire Marshal for better opportunities for collaboration and coordination among the various inspection teams.

**LSB's Management Response:** Management agrees that the roles and responsibilities of the Chiefs and Assistant Fire Marshal's should be evaluated to determine if positions should be redefined to ensure effective management practices. Over the next quarter, the Fire Marshal will lead a project to document and assess the roles and responsibilities of all direct reports to determine what changes to the organization's structure may be necessary to remove redundancies and improve the effectiveness of the management staff.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RECORDKEEPING

### Risk Rating - High

#### **Finding #10: Compliance with Texas Commission of Fire Prevention Requirements Not Properly Reflected**

**Background:** The Texas Commission on Fire Prevention (TCFP) is a state agency that is part of the Texas fire protection community. According to TCFP, the commission's statutory authority and role within this community is to serve Texas fire departments by 1) providing training guidelines and assistance to the fire service, and 2) enforcing statewide fire service standards. State law requires regulated fire protection personnel in certain disciplines, such as fire inspection, to be certified by TCFP. Certified personnel must maintain knowledge on its discipline by earning continuing education credits for each license renewal year, as outlined in the Texas Administrative Code (TAC).

**Finding:** We obtained and reviewed the continuing education requirements outlined by TAC to evaluate LSB compliance with program requirements. We randomly selected inspectors to verify current license status and continuing education (CE) support for credits reported as earned during the periods under audit. We were not able to confirm whether or not the LSB's Continuing Education Program is in compliance due to insufficient record keeping practices. The only supporting documentation provided were roster sheets and screenshots of the name of the course and credits earned that were entered into the CE tracking database. Records are maintained by class, instead of by inspector. The program is not designed to determine which classes are considered Level 1 or Level 2 classes as outlined by the requirements of TCFP. According to the requirements, no more than four hours per year in any one subject of Level 1 training may be counted toward the continuing education requirement for a particular certification. Level 1 training is defined as training intended to maintain previously learned skills as stated in the commission certification curriculum manual for the certifications held.

**Recommendation:** From review of hours entered for the same course title and basic code training, the program should be reviewed to ensure compliance with TCFP requirements are being met. Upon completion of earning credits for a course taken, a certificate of completion should be issued to inspectors and maintained on file that documents the title of the course, date course was taken, inspector's name, instructor's name and certification number, level of training (Level 1 or Level 2), and number of credits earned. Records should be maintained by inspector to easily reference all courses taken for any given license period. In addition, the LSB Guideline for District Training Officers (DTOs)



should be updated to reflect the current requirements and procedures of the program.

**LSB's Management Response:** The Texas Commission on Fire Prevention requirements changed recently and LSB is working with HFD's Professional Development Division to ensure we are adhering to any changes in TCFP requirements. We will ask the Chief Compliance Officer to conduct a review of CEP to provide recommendations on what changes are required to ensure that Inspector continuing education hours are properly tracked and are in compliance with the Texas Commission on Fire Prevention.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## TRAINING

### Risk Rating - High

#### Finding #11: No Professional Development Program

**Background:** Fire Inspectors are promoted to positions in LSB based on passing exam requirements establish by the State. There are no other requirements needed related to skill proficiency in basic software applications, such as Microsoft Office, or managerial/project management experience for supervisory roles.

**Finding:** There is no established professional development program to assist inspectors with developing computer and application/software skills with basic programs, such as Microsoft Excel/PowerPoint, and project management and leadership skills when promoted to supervisory/management positions.

From interviewing personnel throughout the Division and reviewing position requirements, professional training and development programs are not required to ensure all personnel are proficient in using basic applications, such as Microsoft Excel and PowerPoint. Based on examining Excel documentation related to inspection supports, there are inspectors without the proficiency skill set needed to operate in a digital age of touch screen tablets, e- signature software, excel spreadsheets, etc., and paperless environments. In addition, there are no requirements for inspectors to have managerial skills training when promoted to supervisory/ managerial positions.

**Recommendation:** Professional training and development should be established as part of a comprehensive training program. Inspectors need to be adequately trained and equipped with the skills to transition into roles that require more than an understanding of the Fire Code and LSB Standards. If the vision of the department is to utilize technological innovations to streamline processes to improve operational efficiency, training will need to be a priority to transition inspectors to this mindset for these initiatives to be effective.

#### LSB's Management Response:

Fire Prevention Management is in the process of developing a comprehensive training program to be rolled out in FY18 that will include the following:

- Training Program –The program will included basic management training, formal training on



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code interpretation and application from national code experts, as well as, local officials. Formal training seminars from outside agencies have been on-going since 2016 with organizations, such as the Harris County Fire Marshal's Office and local Sprinkler and Fire Alarm companies, which provide joint training for hands on activities. The Training Program will include Officer Development and Diversity Training, Communication Skills (verbal and written) and Legal Aspects of Code Enforcement for all members. At the conclusion of each training session, all inspection personnel will be required to demonstrate an appropriate knowledge level in the topic presented by testing on the subject matter.

- **Knowledge Evaluation Survey** – This will be required for all levels of inspection personnel. The purpose of this survey is two-fold. First, to determine the subject areas where the group's knowledge is weak. The second purpose is to prioritize the training areas identified so that the areas where many individuals are weak, we can provide the needed training and mentoring.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2019

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RECORDKEEPING

### Risk Rating - High

#### Finding #12: Inadequate Recordkeeping Practices

**Background:** LSB currently does not have an integrated document management system for maintaining inspection records to evidence inspections performed. Some records are maintained on the shared drive or within the ILMS database. Other inspectors maintain files in desk drawers or file cabinets within their offices. In 2016, the Fire Marshal issued an Inter-office Memorandum stating all inspection records are to be scanned into the ILMS database.

**Finding:** Records are either non-existent or scattered in various places (i.e. in the ILMS database, in individual inspector file cabinets or desk drawers, or other office locations). The current system of record keeping is inadequate to support and document whether inspections were performed according to Fire Code requirements and LSB Standards.

**Recommendation:** We recommend establishing and documenting an effective record management program that includes records storage, access policies, disposition, maintenance, and other effective record management practices. As part of quality control procedures, supervisors should ensure all records are complete, accurate, and maintained in the database.

**LSB's Management Response:** A near-term ILMS technology enhancement will be implemented to ensure proper interfaces, reports and record-keeping are initiated. Emphasis placed on accountability by identifying the reports and training needs at both the managerial and supervisory levels. The FD will coordinate with HITS for deployment of INFOR within 18 – 24 month period to address full life-cycle permitting and inspection requirements. The department will support the program with defined and incorporated funding to fully implement technology changes into the budget to ensure the division reaps the full benefits of the solution.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** September 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RESOURCES

### Risk Rating - High

#### Finding #13: LSB Consistently Exceeds Approved Budget

**Background:** LSB provides various fire prevention and life safety services to the public to facilitate safety. These services are provided based on several permits that must be purchased by third parties, depending on the nature of activities performed. LSB has over 80 types of fire prevention permits. Specifically, fire- watch/standby permits are purchased by third parties in the event an inspector is needed onsite to monitor activities at special events or locations that may present a fire hazard to the public. Inspectors performing fire-watch/ standby services are paid overtime since most of these services are provided after-hours or in excess of inspectors' regularly scheduled work hours.

**Finding:** In FY2015, the overtime budget for classified personnel was \$1.8 million. The actual expense amount was \$2.6 million, which was \$800,000 over budget. In FY2016, the overtime amount budgeted for classified personnel was approximately \$1.4 million. The actual expense amount was approximately \$3 million, which was \$1.6 million over budget. LSB's overtime is driven by external factors, such as third parties requesting fire- watch/standby inspectors for major events, site inspections, or other requests that require standby inspectors. These overtime costs should be covered by the third parties requesting standby inspectors.

**Recommendation:** We recommend that LSB evaluate the fire prevention permitting fee structure to ensure all costs for providing fire-watch/standby services are sufficiently covered.

**LSB's Management Response:** To fully meet the objectives of the LSB, the department has moved forward with several critical technology enhancements, interfaces and reports to enhance efficiencies within the division. Changes in the deployment of resources and improved controls to eliminate inefficiency have been recommended and will be implemented at the launch of the Risk Based Inspection program. The necessary funding to ensure goals are met and the program is sustained will be based on evaluation of current conditions and workforce development and incorporated into the annual budget.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017



**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.

identified and corrective actions are appropriate.



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## INTERNAL CONTROLS

### Risk Rating - High

#### **Finding #14: Population of Facilities to be Inspected Cannot be Verified as Complete and Accurate**

**Background:** The city of Houston has thousands of buildings subject to inspection by LSB.

There are approximately 630 identified high-rise locations throughout the city of Houston. However, with the constant growth of the City, the process is not adequately defined to ensure all new high-rise buildings are included in LSB's master list. In addition, it cannot be verified that all existing high-rise buildings have been identified. The master list of buildings was inherited by the current supervisor of the High-Rise Inspection Team who maintains the list on a monthly basis by adding new locations that are accidentally found by inspectors in the field or occasionally when BCE notifies the team a COO has been issued for a high-rise building.

The Institutions Inspection Team maintains separate master lists for each institution type, which includes hospitals, boarding homes, nursing homes, and correctional facilities.

The Hotel/Motel, Apartments, Schools, General Occupancy, and Nights/Weekend teams do not maintain master lists of its occupancy types. The General Occupancy Team consists of various occupancy types, including day cares, churches, shopping malls, dry cleaners, warehouses, etc. No information was provided to quantify the number of buildings that exists for these occupancy types. The Hazmat/High-Piled Storage team did not maintain a master list for the periods under audit. However, this specialized team created a Hazmat Working List in late 2016 when all inspection teams were directed to identify all hazardous material and high-piled storage facilities that would be subject to inspection by the Hazmat/High- Piled Storage Inspection Team. The project is still ongoing by the Hazmat/High- Piled Storage Inspection Team and expected to be completed in 2018.

**Finding:** The number of facilities/buildings that should be inspected cannot be verified as complete and accurate. We performed verification procedures to ensure completeness and accuracy of the master listings provided for the different occupancy types. However, the verification procedures failed, as internal controls are not in place to adequately verify completeness and accuracy of the master listings that were provided. For some inspection teams, a master listing was not maintained and monitored. For purposes of the audit, we used information that was provided.



**Recommendation:** Because LSB currently lacks a sufficient database to manage inspection location information, we recommend all teams create a master list of locations subject to inspections. This is a guideline specified in the 360 Degree Inspection Program implemented for a short time in 2015. Once a master list is established, develop a set of robust internal controls to strengthen the verification process of all occupancy types to ensure the completeness and accuracy of the lists on an ongoing basis. Internal control procedures could include periodically comparing BCE's records of buildings with LSB, obtaining and comparing credible external resource data to master lists, and ensuring list are maintained only by designated personnel. The listing should be verified with other sources at least on a monthly basis to ensure completeness and accuracy until the process is mature enough to warrant a change in frequency of the verification procedures. The verification process should be properly documented for control purposes.

**LSB's Management Response:** Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly a scheduling engine was developed that prioritizes and schedules all future inspections. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017. When the fully automated model is rolled out, the master commercial property list will be continuously updated as inspections occur, new businesses come online and old businesses are closed.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## INTERNAL CONTROLS

### Risk Rating - High

#### Finding #15: Inspections Performed Inconsistently

**Background:** The Inspection Reports/Notices of Violations used by inspectors are designed to serve as exception reports that specifically list the building components that were not in compliance with the Fire Code. The reports do not provide information on the areas that were in compliance. Because of the report design, it makes it difficult to determine what building components were checked as part of the inspection process. Additionally, inspections are not performed consistently by each inspector and documented sufficiently to indicate procedures performed.

**Finding:** Inspections are not being performed consistently to ensure the minimum requirements of the Fire Code are being met.

We randomly selected inspection files for each occupancy type to review Inspection Reports/ Notices of Violations, checklists used, photographs of violations, email correspondence, and any other supporting documentation to evidence the inspection process and procedures performed. In addition, we randomly sampled 13 locations to visit and observe the inspection process.

We noted that the inspectors are very knowledgeable about the Fire Code and common violations found within the different occupancy types. However, each inspector has his/her own way of inspecting, which increases the risk of inconsistencies among each inspection team. Based on the inspector, there may be little to no documentation of the inspections, as some inspectors use personal notepads during the inspection to document violations. More experienced inspectors commented that since they are familiar with the process, no checklists are needed. Consequently, during our walk-throughs, personnel of facilities inspected commented on the frustration that is experienced when different inspectors for the same location are not consistent in their inspection process. Teams, such as Hazardous Materials, stated checklists are not used due to the nature and complexity of inspections performed.

Some inspection files contained checklists (with notes) that are consistently used by inspectors, mainly with the Institutions Team, to evidence all areas inspected. The High-Rise team has checklists, but we could not determine that all inspectors consistently use the checklist. The Apartments Inspection Team has three versions of a checklist used by its inspectors. However, in the 53 apartment files selected for testing the checklists were not included in the supporting documentation. It was noted that they are



being used, but not kept once the Inspection Report/Notice of Violation is generated.

**Recommendation:** We recommend inspection checklists be developed and utilized by inspectors when performing inspections to ensure that the Fire Code minimum requirements are met for the locations under inspection and inspections are consistently performed by each inspector. The checklists should be customized for each specialized team as needed, reflect current code requirements, and LSB/NFPA Standards. In addition, the completed checklist documentation should be signed and dated by the inspector completing the inspection and included as part of the building's inspection file to evidence what was inspected and violation(s) found in order to generate the Inspection Report/Notice of Violation.

Since the Inspection Reports/Notice of Violations are not designed to include both compliance and non-compliance components, using a checklist rather than a personal notepad to document violations and note areas inspected can evidence that a thorough inspection was completed. Supervisors should be reviewing the completed checklists in conjunction with the Inspection Report/Notice of Violation to verify a quality inspection was performed. In addition, we also recommend taking photographs of violations identified during inspections to support Inspection Reports/Notices of Violations issued.

**LSB's Management Response:** The latest version of the International Fire Code will be incorporated into the RMS, currently ILMS, to insure inspectors are able to access relevant codes when drafting reports. Management will work to ensure the Fire Code and the Municipal Code is aligned when the Fire Code changes, update the Fire/Municipal reference table and develop training material for completing citations. Management will formalize a process for all new LSB members and designate a training lead to oversee entire LSB onboarding process. The LSB leadership will ensure to host regularly schedule meetings with team-specific topics; develop a standardized agenda with set topics; utilize online platform as a repository for prevention-specific training.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RECORDKEEPING

### Risk Rating - High

#### **Finding #16: Inspection Records Are Incomplete, Unavailable or Non-Existent**

**Background:** Overall, LSB has very poor record keeping practices to document inspections were completed and that they were performed in accordance with the Houston Fire Code and LSB Standards. This can be attributed to a lack of an adequate document management system.

**Finding:** We randomly selected inspection files for each occupancy type to review Inspection Reports/ Notices of Violations, checklists used, photographs of violations, email correspondence, and any other supporting documentation to evidence the inspection process and procedures performed.

**Hotel/Motels:** For the FY2015 (July 2014-June 2015) audit period, a population of inspections completed could not be readily identified for the audit due to poor record keeping practices of the Bureau. LSB doesn't have a comprehensive data management system for adequate record keeping. The Hotel/Motel Inspection Team was created in October 2015 and in prior months, hotel/motel inspections were the responsibility of the General Occupancy Inspection Team. Information, such as the number of hotel/motel inspections completed could not be identified, which limited the audit scope for the FY2015 audit period. Furthermore, inspection data reported in the ILMS database does not agree to inspection data reported on the individual inspector spreadsheets. The ILMS databases reported thirty-nine (39) general inspections were performed for FY2016 (July 2015-June 2016), whereas the inspectors spreadsheets only recorded nineteen (19) general inspections performed for the FY2016 audit period. We reconciled the data and identified forty-six (46) general inspections were performed for FY2016.

**Apartments:** There are more than five thousand (5,000+) apartment locations within the Houston city limits subject to inspection by HFD Fire Prevention. Information that was provided was incomplete and lacked key information such as address, contact information, project number, date last inspected, and/or complex name. Of the 5,000+ locations identified:

1. 4,818 locations had no inspection dates reported.
2. 512 locations were identified as having 'No Information'.
3. 44% (14 of 32) of sample items selected for FY2016 are not evidenced as being inspected.

**Airports:** There were no general inspection reports provided to evidence inspections performed at the



three major airports in Houston: Bush Intercontinental, Hobby, and Ellington. We visited Bush Intercontinental and met with the inspector that explained the process for inspecting the airport locations. Nothing was officially provided to the inspector or the prior inspector to outline the responsibilities of an airport inspector. There is no type of strategy/approach to performing inspections. Additionally, it was noted that there is only one inspector for the three airports. Based on verbal guidance from a prior inspector, any designated area with direct access to the runways is to be inspected. This includes the following:

1. All terminals at Bush Intercontinental (10th busiest in U.S.), Hobby Airport, and Ellington Field;
2. Office spaces within all terminals on all levels at all airports;
3. All parking garages at all airports;
4. Every shop, restaurant, retail store, airline lounge, etc. in all terminals at each airport;
5. Fuel Farms at all airports;
6. Fuel tankers at all airports;
7. All FBO's (Fixed Based Operators) and all private hangers on all airport properties; and
8. All helipads/heliports within the City of Houston (Approx. 83).

**Mobile Food Units (MFU):** Inspection checklists used during the inspection serves as the report that an inspection was performed by LSB. The checklist is stamped, signed, and dated on the second page and provided to the MFU owner as evidence the inspection was performed. A copy of this approval is not maintained by LSB to adequately evidence the inspection was performed. Only an approval time and date is entered into the ILMS database to evidence the inspection was performed.

**Recommendation:** We recommend that LSB establish and define record keeping policies for key activities and processes.

**LSB's Management Response:** As part of the current efforts to improve the LSB's inspection program, all LSB inspectors will be required to do the followings (as it relates to notices of violations):

- (1) Store all notices of violation in the system of record, currently ILMS.
- (2) Consistently log their daily activities in ILMS so that these records can be easily located.

An inspections reporting dashboard is currently being developed for Chiefs and Seniors to be able to better monitor what inspections are being performed. A process will be developed for Seniors to



conduct audits of completed inspections to ensure completeness and accuracy of the final reports.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## INTERNAL CONTROLS

### Risk Rating - High

#### Finding #17: Inadequate Quality Assurance Program

**Background:** Quality control procedures are critical to the LSB fire prevention and life safety processes to ensure standards are maintained and performance measures are adequately met. A comprehensive Quality Assurance Program provides credibility and accountability for LSB operations.

**Finding:** The internal control environment for quality assurance is not operating effectively to ensure quality inspections are performed and in a timely manner to detect errors in the inspection process. In addition, reviews are not performed to ensure open inspection projects are closed timely and sufficiently documented when completed.

There is a lack of evidence to support supervisors are reviewing inspection files to ensure quality inspections were properly performed. There are established guidelines (LSB Guideline V-03) that provide high-level instructions on properly performing inspections. However, it lacks detailed operating procedures to adequately address a comprehensive quality assurance program.

It was reported that there is a lack of understanding by supervisors and management around the processes and activities involved for the various types of inspections and plan reviews performed on the Special Operations team. Special Operation inspectors responsible for the airports and major event venues, such as the Toyota Center, NRG Stadium, and George R. Brown Convention Center have field offices located at the various locations. There are no secondary or quality assurance reviews by supervisors to ensure inspectors are performing thorough inspections according to the Fire Code and Standards for general inspections, permit inspections, or special event plan reviews. Supervising personnel may not have the competence to perform internal control procedures for quality assurance due to lack of understanding of the activities involved throughout the process.

During our interview process, some supervisors stated that no quality review is performed because the expectation is established that inspectors should be performing their jobs responsibly, and if not, it is the inspector's fault. This mentality throughout LSB "blame-shifts" responsibility to others and creates an atmosphere where there is a lack of accountability for job performance.

**Recommendation 18:** We recommend updating current LSB Guidelines in order to develop a more



robust quality assurance program that outlines in detail the requirements of supervisors and Chiefs to perform quality reviews. Accountability for performance should be promoted throughout LSB. The quality assurance program should involve periodic self- audits of the fire prevention inspection process that are documented to evidence quality reviews are performed. Quality review procedures should involve:

1. Ensuring checklist are consistently used by inspectors to satisfy minimum code requirements were evaluated;
2. Verifying inspection files contain complete information, such as photographs, email correspondence, Fire Protection Engineer Reports, permit copies, site plans, and other necessary documents to support inspection activities, inspection reports, and notices of violations;
3. Ensuring follow-ups/re-inspections are performed timely and projects are completed within targeted time frames; and
4. Ensuring completed inspection files are properly uploaded to designated shared drives or database that can be easily accessible, as needed, by the inspection teams.

**LSB's Management Response:** We agree, all supervisors were given training in guidelines, accountability and management training every Tuesdays and Wednesdays by the Fire Marshal, HFD's Training Academy and outside trainers at the CAPE Center to ensure they provided accountability, Quality Assurance and Quality Improvement. However, supervisory personnel didn't adhere to the guidelines that were in place. We will start the training classes again to ensure our Quality Assurance Programs are in place and adhered to.

The Fire Chief in connection with the Fire Marshall will take steps to eliminate or correct the prevailing management style to get the supervisors out of their offices and into the field and afford them the ability to manage the inspectors and to hold supervisors accountable.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** November 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## REPORTING

### Risk Rating - High

#### Finding #18: Inspection Reports Do Not Reflect Current Fire Code Requirements

**Background:** The City of Houston adopted the 2006 International Fire Code (IFC), effective on December 31, 2010 with amendments for the Houston Fire Code (HFC). On February 1, 2016, the 2012 amendments to the IFC were adopted by the City of Houston. When this adoption took place, the ILMS database was not updated to reflect those changes, mainly due to the associated costs to update the system. Consequently, the ILMS database continues to generate reports using the 2006 Fire Code, which is not the current Fire Code adopted by the City.

**Finding:** Inspection reports do not reflect current fire code requirements. Part of our procedures performed during the audit consisted of sampling inspection reports and reviewing the Houston Fire Code. We found that there were some violations included on inspection reports that should reference the 2012 HFC provisions due to changes from the 2006 HFC. The inspection reports generated with 2006 HFC references are provided to facility/building owners or representatives for code enforcement, which is not an effective practice to properly enforce the Fire Code.

**Recommendation:** The ultimate solution would be to acquire a software specifically designed for the fire prevention inspection process that would include the current Fire Code amendments. However, at minimum, inspectors should document the current code requirements within the comment section of the inspection reports/notices of violations that differ from the 2006 Fire Code that is configured in the ILMS database so that facility/building's owners or representatives have the proper code reference information to remediate violations. Supervisors should review reports/notices to ensure proper code references are documented in the report as part of the quality review procedures.

**LSB's Management Response:** The latest version of the International Fire Code will be incorporated into the RMS, currently ILMS, to ensure inspectors are able to access relevant codes when drafting reports. Management will work to ensure the Fire Code and the Municipal Code is aligned when the Fire Code changes, update the Fire/Municipal reference table and develop training material for completing citations. A standardized use of Key Codes and developed training materials will ensure data integrity and inspector accountability.



**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** August 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## PROGRAM DESIGN

### Risk Rating - High

#### Finding #19: No Established Inspection Cycle

**Background:** There are thousands of buildings to be inspected by LSB within the Houston city limits. Due to the number of locations to be inspected and the staff limitations experienced by LSB, all buildings cannot be inspected every year. Establishing inspection cycles is a best practice performed by other fire departments with similar challenges. Inspection cycles facilitate the inspection process to ensure all buildings are inspected on a periodic basis.

**Finding:** There are no established inspection cycles for apartments, hotel/ motels, airports & heliports, mid-rise atriums, general occupancy buildings and hazmat/high- piled storage facilities. Inspection cycles for these occupancy types have not been established to ensure buildings are inspected on a periodic basis.

**Hotel/Motels:** For FY2016, a total of 46 general inspections were identified as performed for the 425 Hotel/Motel Occupancy types that we identified from the data provided. Analytical inspections were excluded from the population for audit purposes. Analytical inspections consisted of inspectors providing inspection checklists to hotel/ motel owners to self-inspect their facilities. The inspectors may or may not have received these checklists back. Since the inspections did not consist of Fire Inspectors performing the inspections, they were not included in the population.

**Apartments:** With over 5,000 apartment locations identified, the inspection rate averaged 5% (263 of 5000 locations) during FY2015 and FY2016, respectively based on data provided. This excluded analytical inspections performed.

**Airports/Heliports:** There is only one inspector assigned to 3 airports. Based on LSB, it could take years to properly inspect all airports. Currently, there is no inspection schedule established.

**Hazmat/High-Piled Storage:** In the past, inspections were permit driven based on the order in which the permits were received. The inspections were not based on an inspection schedule. A fire incident occurred in the Spring Branch area of Houston in 2016 related to a warehouse that stored hazardous materials that prompted immediate attention by all inspection teams to identify all hazardous material facilities that should be periodically inspected. The warehouse that caught fire had not been inspected in 8 years before the incident. The Hazmat/High-Piled Storage Team is currently identifying buildings



to be inspected so that an inspection schedule can be established.

**General Occupancy:** Various occupancy types are inspected by this team. As mentioned previously, there is no complete listing of all buildings that should be inspected by the team. Inspections are permit driven. This team also has the responsibility of inspecting hazardous material warehouses that maintain hazmat below established thresholds. No inspection schedules are in place to ensure periodic inspections are performed.

**Mid-rise Atriums:** There is only one inspector assigned to perform mid-rise atrium inspections. There are 152 identified locations for mid-rise locations. The number of inspections performed for the periods under audit could not be verified. We randomly sampled fifteen (15) locations to determine when the last inspection was performed. One (1) location hadn't been inspected in 7 years. Two (2) locations didn't have any information on file to support an inspection had ever been performed. Six (6) locations were last inspected in mid-2014.

**Recommendation:** We recommend that an inspection schedule is established and documented to ensure all locations are inspected on a periodic basis for all occupancy types. This schedule should be evaluated as part of the risk assessment process that should be performed on a periodic basis.

Fire Inspectors should always perform general inspections on all locations. Inspection checklists can be provided to building owners /representatives to educate and help them prepare for general inspections, but should not be used to document an inspection was performed. In addition, we also recommend taking photographs of violations identified during inspections to support Inspection Reports/Notices of Violations issued.

**LSB's Management Response:** Over the last months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly, a scheduling engine was developed that prioritizes and schedules all future inspections over a reasonable annual cycle. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017.

**Responsible Party:** Fire Marshal



**Estimated Date of Completion:** July 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.

identified and corrective actions are appropriate.



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## INTERNAL CONTROLS

### Risk Rating - High

#### **Finding #20: No Evidence of Review and Approval for Fire Safety and Evacuation Plans**

**Background:** HFC Chapter 4, Section 404.2 states "When required by the fire code official, and where local Fire Marshal approvals are required by regulatory agencies, an approved fire safety and evacuation plan shall be prepared and maintained." A properly developed fire plan provides instructions for responsible parties on how to notify building occupants of an emergency and when to evacuate, if necessary, in the event of a fire emergency. HFD's LSB Division is responsible for ensuring that each building requiring a Fire Safety & Evacuation Plan complies with the Fire Code.

**Finding:** There was no evidence to support that all required occupancies' Fire Safety & Evacuation Plans were properly reviewed and approved by the appropriate Fire Official(s).

**Institutions:** These facilities are regulated by other third parties that require evidence that the Fire Marshal has inspected its facilities, which includes reviewing plans. These facilities initiate a "Shelter in Place" protocol in the event of a fire emergency, which is different from other occupancies. We selected 10 hospitals, 10 nursing homes, and 5 correctional facilities for audit testing purposes. The results showed files contained outdated plans or no plans at all. Site visits and additional requests were made to the institutions to obtain current Fire Safety and Evacuation Plans to evaluate Fire Code compliance. For the plans received, all were in compliance with Fire Code or in the process of being updated.

**High-Rise:** Thirty-two (32) samples of high-rise buildings were selected for review of the Fire Safety & Evacuation Plan and Fire Official review and approval. Eleven (11) files were not located to evidence a review or approval of a Fire Safety & Evacuation Plan. Eleven (11) Fire Safety and Evacuations Plans, dating back to 2009, had not been reviewed in the established 2-year review period. In addition, the current plan template documents a last revision date of November 20, 2012.

Other occupancies do not have a documented formal process to review and approve Fire Safety & Evacuation Plans. Based on observations and inquiries with inspectors, they are only checking to ensure building owners/ representatives have a plan in place and the required number of fire drills are performed.

**Recommendation:** All required occupancies should have a documented review and approval process of Fire Safety and Evacuation Plans to ensure they are in compliance with the current Fire Code.



Either complete plans or approvals should be maintained as part of the location's file to monitor compliance on a periodic basis. This too should be included as part of the quality review procedures.

In addition, the standard plan template utilized for high-rises need to reflect a current version date, in reference to the 2012 Fire Code that was adopted in February 2016, even if there are no changes to the requirements. The documented process of reviewing and approving Fire Safety & Evacuation Plans performed by the High-rise Inspection Team is a best practice that should be performed across all teams where review and approval of plans are required by the Fire Officials.

**LSB's Management Response:** Standardized workflow and documentation process will be developed and procedures that align with code requirement will be written, published and incorporated into the training.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** October 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RESOURCES

### Risk Rating - High

#### **Finding #21: Transportation Reliability Challenges Exist**

**Background:** The LSB Guideline Volume 5, Reference No. V-12 Assignment of Vehicles, states that "Vehicles will be assigned to members by rank and seniority, in the Division, based on the totality of the vehicle assignment policy." It was reported that efforts have been made to change the policy to give priority to field inspectors for new vehicles due to the critical need of reliable transportation to perform inspections and maintain productivity in the field. Any remaining vehicles would be distributed to Senior Inspectors and Chiefs, respectively. Moreover, vehicles older than six (6) months old are not considered new and members are not held to the four-year retention requirement.

**Finding:** We observed the transportation challenges that inspectors face while out in the field performing inspections and the impact it has on the efficiency of operations. In addition, inspectors commented on the frustration of not having reliable transportation to perform inspections timely. Based on our observations of 10 vehicles used by field inspectors while performing onsite walk-throughs, the oldest vehicle dates back to 2004. The vehicles have average mileage of over 130,000 miles. LSB vehicle fleet reports identified 67% of the vehicles currently in use to be greater than 7 years old.

**Recommendation:** Inspectors should be provided with reliable transportation to facilitate productivity in performing field operations. Inspectors in the field should be given first consideration for new vehicles, as reliable transportation is needed to perform their job functions and to meet established inspection goals set by management.

**LSB's Management Response:** Management agrees with your finding and recommendation. In 2016, an attempt was made to update the auto policy to ensure the inspectors out in the field had reliable transportation to maintain productivity in performing field operations. The policy required all new vehicles to be distributed from the inspector's rank first then supervisors which include the Chief Inspectors and Senior Inspectors. However; the updated policy recommendation was not approved. Inspectors in the field should be given first consideration for new vehicles, as reliable transportation is needed to perform their job functions and to meet established inspection goals set by management. The proposed policy change will be revisited with the newly appointed Fire Chief.



**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** October 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.

identified and corrective actions are appropriate.



## RESOURCES

### Risk Rating - High

#### Finding #22: Inspection Teams Are Understaffed

**Background:** There are nine (9) specialized inspection teams within LSB: 1) High- Rise, 2) Apartments, 3) Schools, 4) General Occupancy, 5) Institutions, 6) Hotel/ Motels, 7) Nights/ Weekends, 8) Hazmat/ High-Piled Storage, and 9) Special Operations.

**Special Operations-Airports:** There is only one (1) inspector assigned to all three airports in Houston: Bush Intercontinental, Hobby, and Ellington. Bush Airport is approximately 25 square miles in size (16,000 acres). Comparable airports have up to 13 inspectors assigned to one airport of that size.

**Apartments:** There are over 5,000 apartments in the city of Houston. There are thirteen (13) assigned inspectors divided between the North and South teams: five (5) inspectors for North and eight (8) inspectors for South. The monthly goal for inspections is 470 apartment inspections per month. It was noted that there have been issues in the past where inspectors are not performing the required number of inspections, consequently causing inefficiencies and ineffectiveness to meet inspection goals. In addition, there have been transfers and vacant positions on the teams that impact achieving inspection goals.

**High-Rises:** There are 630 identified high-rises throughout the city of Houston. The High-Rise Inspection Team has six (6) inspectors assigned to perform general inspections and four (4) inspectors assigned to perform evacuation training and plan reviews. Each inspector on the team is required to perform either four (4) general inspections or four (4) evacuation trainings per month. However, based on data provided, for FY2015, a total of 149 inspections were performed for high-rise occupancy types. For FY2016, a total of 168 inspections were performed for high-rise occupancy types.

Special Operations, hotel/motel, and the general occupancy inspection teams also lack enough inspectors to meet the inspection demands. Moreover, when LSB responds to fire incidents by performing targeted occupancy-type inspections throughout the year and utilizing inspectors from the various teams, it impedes the progress and makes the inspection process stagnant for those inspectors by taking them away from performing their regular inspections. Consequently, this affects operational performance of the inspections teams.

**Finding:** Inspection teams are highly understaffed in relation to the number of buildings to be



inspected and the inspection goals set forth by LSB in order to meet the growing demand of building inspections throughout the city of Houston.

**Recommendation:** A staffing analysis should be performed to determine additional staffing needs for the various inspection teams. Appropriate inspection goals set by management combined with sufficient staffing, can positively impact the quality of the inspections performed and decrease the level of risks related to operational effectiveness.

**LSB's Management Response:** A manpower analysis for the division will be completed by July 2017 to determine our ability to meet demand. The analysis will focus on utilization rates, by inspection teams, given the number of identified properties and their expected capacity to perform inspections. In addition to shifting resources from inspection teams with excess capacity to those with less capacity, an operational plan that will include HFD's Emergency Operations Division in the inspection process is in development. The operations crew will conduct safety surveys inspections. The City of Houston Fire Department will be conducting an annual safety survey inspection of facilities in each fire company's first alarm territory. The purpose of this survey inspection is to establish the minimum requirements consistent with the nationally recognized level of life safety and property protection from the hazards of fire, explosions or dangerous conditions in new and existing buildings, structures and premises and to provide safety to emergency responders.

Alvarez & Marshal will study this area and make recommendations for manpower.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RESOURCES

### Risk Rating - High

#### **Finding #23: Lack of Resources to Meet Fire Prevention/Life Safety Program Needs**

**Background:** In order to efficiently and effectively enforce Fire Code requirements and perform the duties of their position, inspectors need the necessary equipment and resources to adequately satisfy performance measures. Laptops are not always reliable and in working condition for inspectors to use when performing field operations, which affects adversely productivity.

Inspectors currently use their own personal resources to get business cards, so that they can present themselves in a professional manner when working with customers. In addition, inspectors are not equipped with the new 2012 adoption of the Houston Fire Code. Only Chiefs and supervisors were provided with the 2012 Fire Code amendments. It was reported that due to budget constraints, copies of the 2012 HFC amendments were not provided to inspectors. This is one of the most important resources inspectors should have in the field when enforcing the code.

**Finding:** LSB inspectors are not adequately equipped with the equipment, supplies and research materials (i.e. current Fire Code) to meet the fire prevention/life safety program needs. Moreover, inspectors are not provided with business cards or informational flyers to exchange basic information to facility owners/representatives when out in the field or attending business meetings. Additionally, it was noted that there are 125 tablets that were purchased in 2016 that are currently being stored in a warehouse.

**Recommendation:** Inspectors should be supplied with basic supplies, such as business cards and have access to the currently adopted Fire Code, so they can properly perform their job duties. Inspectors should be provided with reliable computer equipment while working in the field to maintain productivity during field operations. We also recommend LSB apply for available grants to take advantage of opportunities to obtain financial resources to fund projects for LSB initiatives to offset budget constraints. Examples of various grant opportunities that are available to help meet the needs of LSB are listed below:

- FEMA Fire Prevention & Safety Grant - The Fire Prevention & Safety (FP&S) Grants are part of the Assistance to Firefighters Grants (AFG) and support projects that enhance the safety of the public and firefighters from fire and related hazards.



- FEMA Fire Prevention & Safety Grant - The Fire Prevention & Safety (FP&S) Grants are part of the Assistance to Firefighters Grants (AFG) and support projects that enhance the safety of the public and firefighters from fire and related hazards.
- FM Global Fire Prevention Grant Program - Funding requests are considered to help support organizations working to combat fire for a wide array of fire prevention, preparedness and control efforts. Funds can be used for pre-fire planning (computer software programs, laptops) and fire prevention education/training (community outreach initiatives, workshops, and publications).
- Firehouse Subs Public Safety Foundation Grants - Firehouse Subs Public Safety Foundation program is established to assist emergency service entities obtain life-saving equipment, as well as fire prevention, safety, and disaster preparedness educational tools.

Applying for grants is a very rigorous process that would take a dedicated team to ensure the process is properly completed. Creating a project team of select field inspectors, Senior Inspectors, and Chiefs to define and document specifications of LSB's needs would be recommended to ensure the specific needs of the program are properly presented.

**LSB's Management Response:** We agree, as part of a needs analysis that is being conducted now, a survey will be conducted of all members of LSB to determine the equipment required to perform their inspections. The results will be compared to the equipment that is actually in place now. We will plan for and budget for the necessary equipment needed. Additionally, LSB will assign the business analyst resource to identify any relevant grants that the division can pursue to accelerate the availability of funds to purchase the equipment needed.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** September 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## INTERNAL CONTROLS

### Risk Rating - High

#### **Finding #24: Apartment Inspection Team Lacks Coordination and Communication**

**Background:** The Apartment Team is divided between North and South, which are managed by two supervisors: one supervisor for Apartment Team-North and one supervisor for Apartment Team-South. Coordination and communication for inspecting apartment complexes between the teams does not appear to exist, which creates organizational silos. In addition, management styles are different for each team and operational practices differ, which causes inconsistencies in performance capabilities for the Apartment Inspection Team holistically.

**Finding:** The Apartment Inspection Team lacks coordination and communication to effectively operate and exchange information on best practices to ensure inspections are consistently performed for all apartment locations.

**Recommendation:** We recommend that periodic meetings should be held on an ongoing basis between the two apartment teams to coordinate more effective operational practices and exchange pertinent information, such as inspection approach, methodologies, and quality assurance control measures, etc., that can lead to best practices between the teams to enhance consistency, productivity and credibility. Standard operating procedures should also be developed to facilitate coordination of the two Apartment Inspection Teams. The evaluation should also be made to determine whether or not the team should remain split between north and south to provide the most effective solution.

**LSB's Management Response:** A process change has been implemented with the recent assignment of a new Chief Supervisor. Regularly scheduled team meetings have begun and will continue as part of the process improvement. The meetings will focus on coordination, efficiency, training and inspection practices.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## RESOURCES

### Risk Rating - High

#### Finding #25: No Coverage During Specific Weekend Hours

**Background:** The Nights/Weekends Inspection Team performs the following types of inspections:

- General inspections of Group A (Assembly) occupancies operating during the evening/night which include: night clubs, bars/taverns, restaurants, and after hours clubs;
- General inspections of Group B occupancies with occupant loads under fifty (50) with primary operations during the evening/night;
- Permit inspections of Group A (Assembly) occupancies, requiring a Place of Assembly operational permit for occupant loads over fifty (50+);
- Complaint inspections of all occupancy types received from HFD response personnel, citizen initiated complaints, and complaints received from other City of Houston departments; and
- Occupant load checks of Group A occupancies to verify non-overcrowding compliance during high occupancy business hours.

Specifically on weekends, inspectors' primary duties are to respond to complaints that come through the HFD dispatch office or other means. These complaints may be from the general public, City Council members, HPD, HFD and other agencies.

**Finding:** Calls that are received from the Office of Emergency Communications (OEC) between the hours of 2:00 AM to 7:00 AM on Saturdays and the hours of 3:00 AM to 11:00 AM on Sundays currently are not managed by the Weekend Team, as there is no one on duty during those hours. In 2016, the inspector that worked the shift retired and the shift remains unfilled. These are hours when after-hour clubs and other nightly venues are open, posing potential risks to the City. We obtained the number of calls received during those periods, but were unable to determine which calls specifically were for the LSB Weekend Team.

**Recommendation:** We recommend either extending the shift hours for the Weekend Team or assigning an inspector to that shift to ensure full 24-hour coverage on weekends.

**LSB's Management Response:** Shift schedules that optimize coverage and minimize labor costs will be evaluated. Demand for coverage will be evaluated but at the moment there is no plan to cover the



weekend hours of Saturday between 0200 and 0700 and Sunday between 0300 and 1100. If required, an on call inspector will be assigned to cover need on a case by case basis.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** N/A

**Assessment of Response:** Management should perform an evaluation of the times there is no coverage by Inspectors to determine if an on-call Inspector should be assigned and implement a plan accordingly.



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## RESOURCES

### Risk Rating - High

#### Finding #26: No Fire Protection Engineers Within LSB

**Background:** Fire Protection Engineers are responsible for reviewing plans related to advanced fire protection systems for various building structures. LSB programs similar in size to HFD have Fire Protection Engineers on staff to review complex plans and perform other plan review tasks. Reviewing plans take specialized skills and without it could cause inefficiencies to surface, especially on the Hazmat/High- Piled Storage Inspection Team since plan checking procedures are performed on this inspection team within LSB.

**Finding:** There are no Fire Protection Engineers within LSB to review complex plans related to Hazardous Materials/High-Piled Storage and other occupancy types.

**Recommendation:** We recommend making it a requirement for hazmat/ high-piled storage plan reviewers to be certified as Fire Protection Engineers, or employing/contracting Fire Protection Engineers. The additional skill could increase productivity within the team and allow for a more comprehensive review of plans for all occupancy types in the early development and construction phases of new buildings.

**LSB's Management Response:** As part of the LSB program improvement strategy, the need for an in-house Fire Protection Engineer will be evaluated.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2018

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## REPORTING

### Risk Rating - High

#### **Finding #27: Number of Completed Inspections Reported is Inaccurate**

**Background:** The Houston Fire Department is accredited by the Commission on Fire Accreditation International (CFAI). Every year an Annual Compliance Report (ACR) must be submitted to maintain accreditation, and every five (5) years from the initial accreditation date a Self-Assessment Report must be completed to renew the accreditation.

According to CFAI, the accreditation report submitted to CFAI enables the commission to award accreditation status to HFD. Part of the requirements to retain accredited agency status is HFD's commitment to keep the commission staff informed of any significant changes or developments in activities, direction, or programming. This is accomplished by the preparation and submission of an annual compliance report. The accreditation report is the internal control document of CFAI that establishes HFD's benchmarks. The ACR is the document used by CFAI to monitor HFD's status as it relates to HFD's standards, procedures and practices as well as the progress made toward completing all strategic and specific recommendations.

**Finding:** The number of inspections completed that was reported in the Annual Compliance Report in 2015 and the Self-Assessment Report in 2016 for the 5- year accreditation renewal were unusually high and could not be supported.

We obtained and reviewed the ACR for 2015 and the Self-Assessment Report for 2016. We only examined the report as it relates to LSB operations. The number of inspections completed during the report periods were unusually high, considering the information and other documentation reviewed as during our audit procedures. We requested the support for the number of inspections reported in the accreditation reports, but the support was not provided. We were informed that during the reporting period, the inspection activities were pulled from the Web Focus Reporting System and included any type of activity associated with an address that had activity, which could have been a phone call, meeting, etc. This caused the number of inspections to be inflated and not represent the actual inspections performed. We were told that the process has changed since the last self-assessment report to more accurately reflect inspection numbers.

**Recommendation:** We recommend that the new process for calculating inspections completed for performance metrics only include general inspections actually performed by each inspector and not



non-inspection data, such as analytical inspections, follow-ups, consultations, phone calls, etc.

**LSB's Management Response:** As part of the ongoing project to improve LSB inspection program, the Web Focus reports were reviewed and some were determined to be inadequate. LSB is in the process of creating an Inspections Performance Dashboard that tracks all inspections and follow-ups by team and inspector. This dashboard is in the initial stages of being implemented. The full implementation is projected to be in July 2017. Additionally, training will be provided to the Chiefs and Seniors on how to access reports directly from the HPC Data Mart which contains more accurate reports until the LSB Inspections Performance Dashboard is completed.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2017

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## INFORMATION TECHNOLOGY

### Risk Rating - High

#### Finding #28: Lack of a Comprehensive Inspection Software and Database

**Background:** LSB currently utilizes the ILMS database designed for BCE to leverage its processes. The system is not a suitable or reliable system for LSB because it does not provide adequate reporting for monitoring inspections performed or provide a complete listing of locations by occupancy type. In addition, data entry errors performed by other personnel with system access outside of LSB impacts data integrity and reliability. Furthermore, the ILMS database doesn't capture the necessary information for inspection reporting purposes.

It was noted that LSB purchased 84 licenses of Firehouse, a records management software solution. However, those licenses are not being utilized by LSB, despite payment of annual maintenance fees of \$7,560. Firehouse is also used by Fire Suppression within HFD.

LSB's 2016 Self-Assessment Report for accreditation renewal prepared by HFD stated that the ILMS has produced expired permitted locations, which require an inspection to determine the need of an operational permit. Moreover, the LSB has utilized the ILMS and Webfocus program to generate and analyze LSB inspection activities, including inspections and inspection follow-ups. However, this system previously failed to meet the needs of LSB, as the system was often unavailable and lacked the search capability necessary to easily reference and track inspection activities. LSB plans to improve the ILMS information system to include the ability to isolate violations, identify potential problem locations, re-call inspection history, and identify violations.

**Finding:** LSB lacks a comprehensive inspection application that captures the end-to-end inspection process and manages the daily operations, including inspection planning, field activities, and reporting.

**Recommendation:** HFD and LSB management should determine if any additional time and resources should be invested into the ILMS database that is not designed to be used by LSB. The financial resources that it will take to upgrade the ILMS database should be used to acquire a software adequately designed for end-to-end LSB inspection activities. We recommend that LSB assess whether or not Firehouse will be used for the inspection process. If it is determined that Firehouse will not be used, payment of maintenance fees should cease immediately and a comprehensive and integrated software package should be acquired to meet LSB needs.



The need for a comprehensive and integrated software solution has been a recurring recommendation from multiple audits. However, LSB has continued to rely and invest resources in the ILMS database that has not proven to sufficiently meet its operational and reporting needs.

**LSB's Management Response:** Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. In addition to rolling out the risk based inspection program, the consulting firm assessed LSB's existing technology landscape and has developed a roadmap to move LSB towards a new inspection application. The implementation of the new inspection application is expected to occur over the next 18-24 months.

**Responsible Party:** Fire Marshal

**Estimated Date of Completion:** July 2019

**Assessment of Response:** Management's response, as presented, sufficiently addresses the issues identified and corrective actions are appropriate.



## **EXHIBIT 1**

# **MANAGEMENT RESPONSES AND IMPLEMENTATION DATES**



# CITY OF HOUSTON

## Fire Department

*Promoting Excellence as the World's Largest Accredited Municipal Fire Agency*

**Sylvester Turner**

Mayor

Samuel Peña  
Fire Chief  
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### **Finding #1: No Comprehensive Risk-Based Approach To Inspections**

#### **HFD Response:**

Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly a scheduling engine was developed that prioritizes and schedules all future inspections. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017.

Responsible Party

Fire Marshal

Implementation Date

August 2017

### **Finding #2: The Fire Code Enforcement Program Is Not Adequately Designed To Ensure Compliance Prior To the Issuance of Building Occupancy Certificates.**

#### **HFD Response:**

An ordinance/operational process change must be implemented to require a final inspection from the Houston Fire Marshal's office prior to occupancy or conducting business in any commercial building.

Responsible Party

Fire Marshal

Implementation Date

September 2017

**Finding #3: Policies and Procedures Are Not Adequately Defined and Updated.**

**HFD Response:**

As a policy, development of a functional Life Safety Bureau division manual will be initiated along with a requirement for annual revisions to ensure such manual remains current. Any necessary policy revisions made throughout the year will be communicated via memorandum and deficiencies will be addressed through annually updated policies and training.

Responsible Party  
Fire Marshall

Implementation Date:  
September 2017

**Finding #4: There Is a Lack of Communication Between LSB and Other HFD Divisions.**

**HFD Response:**

To improve inter-divisional communication channels, the LSB is evaluating a plan to assign inspectors to each operational fire district throughout the city. The goal is to provide Fire prevention information and training. The implementation of a new Inspection Module and new Records Management System (RMS), scheduled for completion within the next 18-24 months, will allow the LSB to actively share inspection information with Suppression and other divisions in real-time.

Responsible Party  
Fire Marshal

Implementation Date  
July 2019

**Finding #5: There Are Fragmented Lines of Interdepartmental Communication That Impact the Effectiveness of LSB Operations.**

**HFD Response:**

To foster better communication between LSB and other City departments, LSB has created a Business Analyst position. This resource will act as liaison between LSB and other departments to facilitate improved knowledge-sharing between the departments to gain better understanding of each other's needs and to more effectively resolve issues. Additionally, the LSB will increase involvement in the construction document review process.

Responsible party  
Fire Marshal

Implementation Date  
August 2018.

**Finding #6: Internal Communications within LSB is not always the most effective.**

**HFD Response:**

The LSB will evaluate the internal communication process to ensure employees are able to easily communicate official business with coworkers and management. The LSB division manual will include mission and vision statements to communicate the overarching goals of the division. The LSB will hold monthly division staff meetings designed to disseminate information, discuss operational issues and generate new ideas.

Responsible Party

Fire Marshal

Implementation Date

August 2017.

**Finding #7: The LSB Website Is Not Updated with Current Information and Navigation For Information is Inefficient.**

**HFD Response:**

LSB website improvement project will be initiated within the next quarter where a team of select LSB resources (business analyst, inspectors and permit CSRs) will review the current content and make recommendations on the improvements that should be made to the website. Improvements that do not require funding will be implemented immediately and funding related improvements will be prioritized and added to the funding requests in the current or future budget cycle.

Responsible Party

Fire Marshal

Implementation Date

August 2018.

**Finding #8: The Mid-Rise Atrium Inspector Is Not Properly Structured On the Appropriate Inspection Team.**

**HFD Response:**

The mid-rise atrium inspections will be positioned as part of the High-rise Inspection Team.

Responsible Party

Fire Marshal

Implementation Date

June 2017.

**Finding #9: Tasks of the Assistant Fire Marshals and Chiefs Seem To Be Similar, Which May Cause Redundancies and Inefficient Management Practices.**

**HFD's Response:**

Management agrees that the roles and responsibilities of the Chiefs and Assistant Fire Marshal's should be evaluated to determine if positions should be redefined to ensure effective management practices. Over the next quarter, the Fire Marshal will lead a project to document and assess the roles and responsibilities of all direct reports to determine what changes to the organization's structure may be necessary to remove redundancies and improve the effectiveness of the management staff.

Responsible party  
Fire Marshal

Implementation Date  
August 2018.

**Finding #10: The Continuing Education Program Does Not Properly Reflect Compliance With the Texas Commission on Fire Prevention Requirements.**

**HFD's Response:**

The Texas Commission on Fire Prevention requirements changed recently and LSB is working with HFD's Professional Development Division to ensure we are adhering to any changes in TCFP requirements. We will ask the Chief Compliance Officer to conduct a review of CEP to provide recommendations on what changes are required to ensure that Inspector continuing education hours are properly tracked and are in compliance with the Texas Commission on Fire Prevention.

Responsible Party  
Fire Marshal

Implementation Date  
August 2017.

**Finding #11: Lack of a Professional Development Program**

**HFD's response:**

Fire Prevention Management is in the process of developing a comprehensive training program to be rolled out in FY18 that will include the following:

- (1) Training Program –The program will included basic management training, formal training on code interpretation and application from national code experts, as well as, local officials. Formal training seminars from outside agencies have been on-going since 2016 with organizations, such as the Harris County Fire Marshal's Office and local Sprinkler and Fire Alarm companies, which provide joint training for hands on activities. The Training Program will include Officer Development and Diversity Training,

Communication Skills (verbal and written) and Legal Aspects of Code Enforcement for all members. At the conclusion of each training session, all inspection personnel will be required to demonstrate an appropriate knowledge level in the topic presented by testing on the subject matter.

- (2) Knowledge Evaluation Survey – This will be required for all levels of inspection personnel. The purpose of this survey is two-fold. First, to determine the subject areas where the group's knowledge is weak. The second purpose is to prioritize the training areas identified so that the areas where many individuals are weak, we can provide the needed training and mentoring.

Responsible party  
Fire Marshal

Implementation Date  
July 2019.

**Finding #12: Inadequate Record Keeping Practices.  
HFD's Response:**

A near-term ILMS technology enhancement will be implemented to ensure proper interfaces, reports and record-keeping are initiated. Emphasis placed on accountability by identifying the reports and training needs at both the managerial and supervisory levels. The FD will coordinate with HITS for deployment of INFOR within 18 – 24 month period to address full life-cycle permitting and inspection requirements. The department will support the program with defined and incorporated funding to fully implement technology changes into the budget to ensure the division reaps the full benefits of the solution

Responsible party  
Fire Marshal

Implementation Date  
September 2018.

**Finding #13: LSB Consistently Exceeds Budgeted Costs.  
HFD's Response:**

To fully meet the objectives of the LSB, the department has moved forward with several critical technology enhancements, interfaces and reports to enhance efficiencies within the division. Changes in the deployment of resources and improved controls to eliminate inefficiency have been recommended and will be implemented at the launch of the Risk Based Inspection program. The necessary funding to ensure goals are met and the program is sustained will be based on evaluation of current conditions and workforce development and incorporated into the annual budget

Responsible party  
Fire Marshal

Implementation Date  
August 2017.

**Finding #14: The Number of Facilities/Buildings That Should Be Inspected Cannot Be Verified As Complete and Accurate**  
**HFD's Response:**

Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly a scheduling engine was developed that prioritizes and schedules all future inspections. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017. When the fully automated model is rolled out, the master commercial property list will be continuously updated as inspections occur, new businesses come online and old businesses are closed.

Responsible party  
Fire Marshal

Implementation Date  
July 2017.

**Finding #15: Inspections Are Not Being Performed Consistently To Ensure the Minimum Requirements of the Fire Code Are Being Met.**  
**HFD's Response:**

The latest version of the International Fire Code will be incorporated into the RMS, currently ILMS, to insure inspectors are able to access relevant codes when drafting reports. Management will work to ensure the Fire Code and the Municipal Code is aligned when the Fire Code changes, update the Fire/Municipal reference table and develop training material for completing citations. Management will formalize a process for all new LSB members and designate a training lead to oversee entire LSB onboarding process. The LSB leadership will ensure to host regularly schedule meetings with team-specific topics; develop a standardized agenda with set topics; utilize online platform as a repository for prevention-specific training.

Responsible party  
Fire Marshal

Implementation Date  
August 2018.

**Finding #16: Inspection Records Are Incomplete/Insufficient, Unavailable, or Non-Existent To Support Inspections Performed.**

**HFD's Response:**

As part of the current efforts to improve LSB's inspection program, all LSB inspectors will be required to do the followings (as it relates to notices of violations)

1. Store all notices of violation in the system of record, currently ILMS.
2. Consistently log their daily activities in ILMS so that these records can be easily located.

An inspections reporting dashboard is currently being developed for Chiefs and Seniors to be able to better monitor what inspections are being performed. A process will be developed for Seniors to conduct audits of completed inspections to ensure completeness and accuracy of the final reports.

Responsible party  
Fire Marshal

Implementation Date  
August 2017.

**Finding #17: Inadequate Quality Assurance Program**

**HFD's Response:**

We agree, all supervisors were given training in guidelines, accountability and management training every Tuesdays and Wednesdays by the Fire Marshal, HFD's Training Academy and outside trainers at the CAPE Center to ensure they provided accountability, Quality Assurance and Quality Improvement. However, supervisory personnel didn't adhere to the guidelines that were in place. We will start the training classes again to ensure our Quality Assurance Programs are in place and adhered to.

The Fire Chief in connection with the Fire Marshall will take steps to eliminate or correct the prevailing management style to get the supervisors out of their offices and into the field and afford them the ability to manage the inspectors and to hold supervisors accountable.

Responsible party  
Fire Marshal

Implementation Date  
November 2017.

**Finding #18: Inspection Reports Do Not Reflect Current Fire Code Requirements.**

**HFD's Response:**

The latest version of the International Fire Code will be incorporated into the RMS, currently ILMS, to insure inspectors are able to access relevant codes when drafting reports. Management will work to ensure the Fire Code and the Municipal Code is aligned when the Fire Code changes, update the Fire/Municipal reference table and develop training material for completing citations. A standardized use of Key Codes and developed training materials will ensure data integrity and inspector accountability.

Responsible party

Fire Marshal

Implementation Date

August 2017.

**Finding #19: There Is No Established Inspection Cycle**

**HFD's Response:**

Over the last months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. Through this effort, the team has created a master commercial property list utilizing data from numerous internal and external data sources. A mechanism to assess risk was developed and a risk score was calculated for each address. Lastly a scheduling engine was developed that prioritizes and schedules all future inspections over a reasonable annual cycle. This model is in the process of being rolled out in a limited capacity until the fully automated model can be implemented. The implementation of the fully automated model is scheduled to be completed by July 2017.

Responsible party

Fire Marshal

Implementation Date

July 2017.

**Finding #20: All Fire Safety & Evacuations Plans Requiring Approval Are Not Evidenced As Being Reviewed and Approved By the Fire Official To Ensure Compliance With the Fire Code.**

**HFD's Response:**

Standardized workflow and documentation process will be developed and procedures that align with code requirement will written, published and incorporated into the training

Responsible party

Fire Marshal

Implementation Date

October 2017.

**Finding #21: Inspectors have transportation reliability challenges that impact the operating efficiency when out in the field performing inspections.**

**HFD's Response:**

Management agrees with your finding and recommendation. In 2016, an attempt was made to update the auto policy to ensure the inspectors out in the field had reliable transportation to maintain productivity in performing field operations. The policy required all new vehicles to be distributed from the inspector's rank first then supervisors which include the Chief Inspectors and Senior Inspectors. However; the updated policy recommendation was not approved. Inspectors in the field should be given first consideration for new vehicles, as reliable transportation is needed to perform their job functions and to meet established inspection goals set by management. The proposed policy change will be revisited with the newly appointed Fire Chief.

Responsible party  
Fire Marshal

Implementation Date  
October 2017.

**Finding #22: Inspection Teams Are Understaffed.**

**HFD's Response:**

A manpower analysis for the division will be completed by July 2017 to determine our ability to meet demand. The analysis will focus on utilization rates, by inspection teams, given the number of identified properties and their expected capacity to perform inspections. In addition to shifting resources from inspection teams with excess capacity to those with less capacity, an operational plan that will include HFD's Emergency Operations Division in the inspection process is in development. The operations crew will conduct safety surveys inspections. The City of Houston Fire Department will be conducting an annual safety survey inspection of facilities in each fire company's first alarm territory. The purpose of this survey inspection is to establish the minimum requirements consistent with the nationally recognized level of life safety and property protection from the hazards of fire, explosions or dangerous conditions in new and existing buildings, structures and premises and to provide safety to emergency responders.

Alvarez & Marshal will study this area and make recommendations for manpower.

Responsible party  
Fire Marshal

Implementation Date  
July 2018.

**Finding #23: LSB Inspectors Are Not Adequately Equipped With Resources To Meet the Fire Prevention/Life Safety Program Needs.**

**HFD's Response:**

We agree, as part of a needs analysis that is being conducted now, a survey will be conducted of all members of LSB to determine the equipment required to perform their inspections. The results will be compared to the equipment that is actually in place now. We will plan for and budget for the necessary equipment needed. Additionally, LSB will assign the business analyst resource to identify any relevant grants that the division can pursue to accelerate the availability of funds to purchase the equipment needed.

Responsible party  
Fire Marshal

Implementation Date  
September 2017.

**Finding #24: The Apartment Inspection Team Lacks Coordination and Communication.**

**HFD's Response:**

A process change has been implemented with the recent assignment of a new Chief Supervisor. Regularly scheduled team meetings have begun and will continue as part of the process improvement. The meetings will focus on coordination, efficiency, training and inspection practices.

Responsible party  
Fire Marshal

Implementation Date  
July 2017.

**Finding #25: There Is No Coverage During the Weekend Hours of Saturday Between the Hours of 2am-7am, and Sunday Between the Hours of 3am-11am.**

**HFD's Response:**

Shift schedules that optimize coverage and minimize labor costs will be evaluated. Demand for coverage will be evaluated but at the moment there is no plan to cover the weekend hours of Saturday between 0200 and 0700 and Sunday between 0300 and 1100. If required, an on call inspector will be assigned to cover need on a case by case basis.

**Finding #26: There Are No Fire Protection Engineers Within LSB.**

**HFD's Response:**

As part of the LSB program improvement strategy, the need for an in-house Fire Protection Engineer will be evaluated.

Responsible party  
Fire Marshal

Implementation Date  
July 2018.

**Finding #27: The Number of Completed Inspections Reported Is Inaccurate.**

**HFD's Response:**

As part of the ongoing project to improve LSB inspection program, the Web Focus reports were reviewed and some were determined to be inadequate. LSB is in the process of creating an Inspections Performance Dashboard that tracks all inspections and follow-ups by team and inspector. This dashboard is in the initial stages of being implemented. The full implementation is projected to be in July 2017. Additionally, training will be provided to the Chiefs and seniors on how to access reports directly from the HPC Data Mart which contains more accurate reports until the LSB Inspections Performance Dashboard is completed.

Responsible party  
Fire Marshal

Implementation Date  
July 2017.

**Finding #28: Lack of a Comprehensive Inspection Software and Database.**

**HFD's Response:**

Over the last 4 months, an LSB project team has been working with an external consulting firm, Alvarez & Marsal, to design, develop and implement a risk based inspection program. In addition to rolling out the risk based inspection program, the consulting firm assessed LSB's existing technology landscape and has developed a roadmap to move LSB towards a new inspection application. The implementation of the new inspection application is expected to occur over the next 18-24 months.

Responsible party  
Fire Marshal

Implementation Date  
July 2019.

## **EXHIBIT 2**

# **ACKNOWLEDGEMENT STATEMENT**

# Acknowledgement Statement

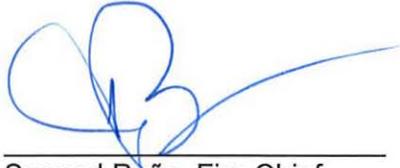
June 8, 2017

Chris B. Brown  
City Controller  
Office of the City Controller

**SUBJECT: HFD LIFE SAFETY BUREAU PERFORMANCE/COMPLIANCE AUDIT REPORT-  
ACKNOWLEDGEMENT OF MANAGEMENT RESPONSES**

I acknowledge that the management responses contained in the above referenced report are those of the Houston Fire Department. I also understand that this document will become a part of the final audit report that will be posted on the Controller's website.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Samuel Peña', with a long horizontal flourish extending to the right.

---

Samuel Peña, Fire Chief  
Houston Fire Department

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