



# Annual Report Regarding Findings in Conducting Inspections

## Introduction

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Texas Government Code, Section 417.0081(c), requires the State Fire Marshal's Office (SFMO) to submit an annual report to the Governor, Lieutenant Governor, Speaker of the House of Representatives, and appropriate standing committees of the legislature regarding the State Fire Marshal's findings in conducting inspections. This report is in response to that requirement.

The SFMO has been inspecting state-owned properties for decades and inspecting buildings leased by the state since 2012 under this authority. The greater part of this report will address the fire safety status of state-owned and state-leased buildings under the charge of the Texas Facilities Commission (TFC). This report also includes information on the inspection of state-owned buildings that are not under the control of TFC. It is SFMO's goal to ensure that all state-owned and state-leased buildings provide a safe environment for state employees and the citizens that they serve.

Calendar year 2013 marked the first full year that the SFMO has conducted legislatively mandated inspections in buildings leased by the state. These inspections were prioritized and conducted on a risk analysis basis developed in consultation with the Texas Facilities Commission and the State Office of Risk Management (SORM).

During this same reporting period, the SFMO conducted inspections, for a fee as authorized by statute, of certain non-state-owned facilities as authorized by Government Code, Chapter 417.008 (f).

Beginning on November 8, 2012, the SFMO began using the 2012 edition of National Fire Protection Association (NFPA), *Life Safety Code*® (NFPA 101). The State Fire Marshal uses other NFPA fire codes and standards for guidance in assessing and directing remediation of fire and life safety hazards. This action is taken under the authority of the Texas Government Code, § 417.008 and § 417.0081, and the Texas Administrative Code, 28 TAC § 34.301 ff.

## Executive Summary

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Achieving full compliance with fire and life safety standards in TFC owned and managed buildings continues to be a challenge. SFMO continues to work with TFC and SORM to educate and change the behavior of tenants who are not complying with life safety standards. In addition, though no longer mandated by statute, the SFMO reports observed violations of the TFC's tenant manual. While funding and staffing continue to be a challenge, SFMO is working with TFC to identify the facilities and deficiencies that pose the greatest risk, to ensure that available funds are spent as effectively as possible to identify and resolve life safety risks.

SFMO's efforts in the inspection of spaces leased by TFC have been quite successful. Early coordination with local AHJs, as well as cooperation from TFC, has led to an effective process for inspecting leased buildings and enforcing the *Life Safety Code*. SFMO continues to collect the data and information it needs to develop a comprehensive risk-ranking program similar to the one used to schedule inspections for TFC-owned facilities. SFMO collects most of this data during the inspection process and uses it to more effectively prioritize scheduling of subsequent inspections.

It is important to note the contrast in enforcing the *Life Safety Code* in state-owned buildings versus its enforcement in TFC leased buildings. SFMO has limited enforcement authority in state-owned buildings. Privately owned buildings are subject to local building and fire ordinances and contractual obligations, whereas state-owned buildings are not. SFMO continues to work with TFC, SORM, and occupying state agencies to make the most effective use of the resources available, to ensure that state buildings are a safe environment for state employees and the public. Many building owners have been willing

to make necessary changes once they are made aware of the risks to not only the state agency tenants but other tenants as well.

Historically, SFMO has regularly inspected slightly less than three-quarters of the total state building inventory under the charge and control of the Texas Facilities Commission or leased for the use of a state agency by them. In the 2012 report, SFMO stated that it was planned to begin regular inspections of all such state-owned or leased buildings. While the SFMO made progress toward this goal, inspecting 20.7% more of the buildings, there remains room for improvement in meeting the goal of consistent, regular inspections of all state-owned or leased buildings.

Under current conditions, if SFMO inspects state-owned residential and other high-risk facilities on a one- to three-year cycle, all other buildings would likely be inspected only once every 14 years. SFMO has determined that 14 years is an excessive length of time for any building to go without an inspection. More frequent inspections have been shown to reduce fires<sup>1</sup>. SFMO's goal is to inspect all facilities no less than once every five years; however, this would require greater resources than SFMO currently has available. A five-year inspection cycle would require SFMO to hire four additional inspectors. In 2013, the SFMO requested four additional life safety inspectors. Two additional inspectors were approved in September of 2013.

The SFMO conducted over 1,669 inspections encompassing 5,847 individual structures in calendar 2013. This compares with 4,802 individual structures inspected in 2012. The State Fire Marshal's Office has identified 2,434<sup>2</sup> facilities owned or occupied by State of Texas agencies constituting as many as 19,000 individual state-owned or state-occupied structures. As there is no comprehensive database of state-owned properties, SFMO continues to collect information during each inspection to update our consolidated list of individual buildings.

<sup>1</sup> Hall, et al., *Measuring Code Compliance Effectiveness for Fire-Related Portions of Codes, Final Report*, National Fire Protection Association & Fire Protection Research Foundation, 2008

<sup>2</sup> Data compiled by Roger Young, Program Specialist, Texas Department of Insurance, State Fire Marshal's Office

A recurring theme throughout this report is the availability of useful data<sup>3</sup>. Information provided for current inspections is based on findings that are anecdotal information, since SFMO's current inspection database does not permit queries for detailed information on inspection findings and enforcement rates. SFMO continues to study upgrade options for its inspections database that would enable SFMO to track detailed inspection finding information and compliance rates. An updated inspections database will more readily provide detailed information, which will make the execution of SFMO's risk analysis and ranking systems more efficient and accurate. Information on the number and types of state-owned and state-leased buildings to date has been compiled from multiple sources and has varied in detail. One of the continuing issues with scheduling inspections of TFC leased spaces on a risk-based priority is that the information currently available on these facilities is sparse and often outdated. SFMO therefore can only collect detailed information useful for a risk analysis after inspecting the site.

Additional meetings and discussions with other governmental entities have produced some further promising results that may translate into more robust and useful data collection and a dataset that can be queried for inspections, and from which risk rating analysis can be performed.

For an brief explanation of the risk assessment algorithm, see Appendix A.

<sup>3</sup> Campbell, R., *U.S. Structure Fires in Office Properties*, National Fire Protection Association, 2013

Throughout this report, reference will be made to deficiencies found during life safety inspections. Following is a table of the most common violations found:

**Top 10 Fire Code Violations in State Buildings**  
*Reference numbers correspond to 2012 Life Safety Code (NFPA 101)*

<b>1</b>	Lack of annual inspections of fire alarm and fire sprinkler systems and systems that have either been red or yellow tagged for years.	<i>4.6.12.1</i>
<b>2</b>	Key operated locks in conjunction with panic hardware.	<i>7.2.1.7/7.2.1.5.3</i>
<b>3</b>	Inoperative exit signs and emergency lighting units or no exit signs and emergency lighting.	<i>7.2.1.5.6/7.2.1.6.2</i>
<b>4</b>	The use of swipe cards to exit a building and no motion sensor or button.	<i>7.2.1.5.6/7.2.1.6.2</i>
<b>5</b>	The use of extension cords and the improper use of power strips.	<i>9.1.2</i>
<b>6</b>	Stairwell doors missing latching hardware or equipped with panic device fire exit.	<i>7.2.1.7.2</i>
<b>7</b>	Fire doors not properly closing and latching.	<i>4.6.12.1/7.2.1.8.2/ NFPA 80</i>
<b>8</b>	UL labels either painted over or missing all together on fire doors.	<i>8.3.3.2.3</i>
<b>9</b>	Portable fire extinguishers not being properly serviced.	<i>4.6.12.1</i>
<b>10</b>	The lack of GFCIs on vending machines, water fountains and within 6 feet of the sinks within countertops.	<i>9.1.2/NFPA 70 NEC</i>

# Texas Facilities Commission-Owned Buildings

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## Procedure

Working through a recently renewed memorandum of understanding (MOU) with TFC and SORM, SFMO regularly inspects state-owned buildings and monitors fire safety improvements. Each agency assumes certain responsibilities through the MOU, and the agencies meet quarterly to ensure ongoing cooperation and progress.

In accordance with Texas Government Code, Section 417.0081(b), SFMO schedules periodic inspections of TFC buildings using a risk based approach. SFMO uses a Fire Risk Ranking method to assign buildings a “relative risk” value that is used to determine the frequency of inspection for individual buildings.

A building’s relative risk value takes into account a number of factors: building use; occupant load; building height; fire protective systems and features; and findings from previous SFMO inspections. SFMO’s risk ranking system assigns various weights to these factors to determine the relative risk value for the building. Facilities with a higher relative risk would be inspected more frequently than those with a low relative risk. SFMO also provides information from the risk ranking system to TFC and SORM to keep them up to date on which facilities need the most attention with regard to fire and life safety concerns.

During 2013, SFMO worked with SORM, TFC, and the General Land Office (GLO) to improve the quality of building data available to perform the risk analysis. Although the risk analysis has improved, the process is still limited by lack of data, including a method



for providing notice to SFMO when a new building is anticipated for construction or is acquired.

SFMO coordinates with TFC building management when scheduling inspections, in order to ensure access to all building areas and necessary equipment. After the inspection is completed, SFMO provides inspection reports to TFC and SORM. SFMO may also provide a copy directly to the heads of agencies occupying the buildings. At that point it is TFC's responsibility to generate work orders to correct any findings, coordinating with occupants as necessary, or to request additional funding for repairs that may not be possible in their current budget.

## Findings

The following buildings, among others, have been identified as having a high potential risk based on the SFMO's risk ranking system:

<b>Current Risk Rank</b>	<b>Previous Risk Rank</b>	<b>Facility Name</b>
1	1	Lyndon B. Johnson Building
2	4	William B. Travis Building
3	3	Department of State Health Services, Tower Building
4	2	William P. Hobby Building
5	7	Price Daniel Sr. Building
6	9	Steven F. Austin Building
7	8	John H. Winters Building
8	5	Robert. D Moreton Building
9	6	Brown-Heatly Building
10		William P. Clements Building

These buildings have several common features and deficiencies that contribute to their elevated level of risk. All of these buildings, with the exception of the John H. Winters Building, are high rise structures that pose a number of unique challenges for life safety and fire protection. These buildings are also all very large buildings with high occupant loads. SFMO inspections have found numerous code violations in these buildings, including compromised fire barriers; improper locking systems that can hinder egress; and deficiencies in building fire alarms, fire sprinklers, and fire suppression systems.

The top three buildings on this list all feature notable issues that result in significantly higher levels of risk than do other state buildings. The Department of State Health Services' Tower Building is the only high rise building in the group of TFC-managed facilities that lacks any fire sprinkler system coverage. Sprinkler systems are a crucial part of the overall fire protection scheme in high rise structures. There are also a number of deficiencies with regard to the building's egress facilities, including excessive dead end corridors and unsealed penetrations. The Lyndon B. Johnson Building is at an elevated level of risk because of incomplete sprinkler protection (the entire fourth floor lacks protection), compromised fire barriers, and non-compliant locking and security arrangements throughout the building that may prevent occupants from exiting the building in a timely manner. The William P. Travis Building rose on the risk list due primarily to improvements made at the William P. Hobby Building. SFMO understands that correction of many of these issues is dependent on funding and may be in varying stages of corrective action based on availability of appropriated funds.

The most prominent issues throughout state-owned buildings include the potentially unsafe use of space by building tenants. Improper use of extension cords, power strips, and food warming and cooking equipment are the most common findings. According to statistics from the National Fire Protection Association, electrical distribution and cooking equipment are identified as the source of nearly a third of all office property fires<sup>4</sup>.

Cooking equipment is the leading cause of fires in the workplace, accounting for 28.9 percent of fires identified as to cause<sup>5</sup> in office buildings. Cooking and food warming equipment should only be present in designated areas. A third of all office fires originating from cooking equipment occurred outside of a kitchen or designated cooking area. Work spaces often contain a large amount of combustibles that create potential for ignition and can contribute to the severity of a fire incident.

The second leading cause of fires in office spaces is electrical distribution equipment. Building electrical systems and equipment are designed for specific maximum loads. When the design loads are exceeded, wiring and other components can overheat and

<sup>4</sup> Ibid

<sup>5</sup> *Nonresidential Building Fires (2009–2011)*, Topical Fire Report Series, Vol. 14, Issue 5, National Fire Data Center, Department of Homeland Security, Emmitsburg, MD, June 2013

start a fire. The most common finding during SFMO inspections is interconnected power strips. Occupants typically do this to increase the number of receptacles available for use. Doing so puts strain on the building's electrical system as well as the power strips themselves. There have been a number of recent events in state buildings where an overloaded power strip has failed. Unfortunately there has been at least one incident involving injury to a state employee and damage to state property. Extension cords are also commonly used to provide power to appliances in areas of an office where there is no nearby receptacle. Extension cords are not designed to be under continuous electrical load and should not be used in the place of permanent wiring. When additional receptacles are needed in an area, building management should be contacted to install the proper fixtures. The use of cooking equipment and other personal electrical appliances that draw large current loads, such as personal refrigerators and space heaters, may also contribute to electrical distribution fires. Office building electrical systems are designed for a specific load that typically consists of computers, printers, and other miscellaneous office appliances. When each occupant has their own microwave, toaster, coffee pot, heater, or refrigerator, the design loads are typically exceeded and can cause stress on the building's electrical system over time.

Additionally, increased numbers of appliances in individual work spaces contribute to an overall increase in temperature. As a consequence, TFC may be in a continual battle to provide a comfortable working environment. Overall, this creates an increased cost to operations of the buildings and an increased expense to the state.

Obtaining compliance in this area continues to be a challenge because of a lack of education on these issues, turnover in agencies, and the frequent reconfiguration of office spaces. SFMO, TFC, and SORM have been working together over the past year to develop programs to address these tenant issues. SORM has produced a video on workplace fire safety that is available for safety officers from state agencies to distribute to their staff. Often, employees are not aware of the hazards associated with misusing the electrical facilities in their workspaces. Hopefully, this video will prompt employees to evaluate their individual work areas and make changes where necessary. TFC has also recently updated its tenant manual to add further clarification on the proper use of electrical utilities, and the misuse of unauthorized appliances. SFMO has included more detailed information on tenant-related issues in inspection reports, so that TFC can directly issue notices to the

leadership of tenant agencies, informing them of fire code violation issues. TFC will copy SFMO and SORM on these notices so that SFMO can follow up directly with agency leadership, with the hope of achieving greater compliance.

Timely correction of code violations in TFC owned and managed buildings has historically been a challenge. SFMO's primary mechanism for enforcing the code is through Government Code § 417.008. Generally, the SFMO does not directly enforce an order requiring remedial action. Enforcement of a Fire Marshal's Order issued in accordance with § 417.008 may require assistance from the Office of the Attorney General to secure an injunction. This process is not only extremely time consuming and costly, but also impractical for correcting the majority of noncompliant conditions found in the course of a typical inspection. The SFMO seeks to obtain compliance with resolution of identified deficiencies through communication with the stakeholders in the affected agency. If a dangerous condition is identified and the affected agency will not make a credible effort to correct the deficiency, the Fire Marshal has the authority to enforce correction of the condition under Texas Government Code, Section 417.008, though this action, as yet, has not been necessary. Additionally, TFC and occupying agencies are often limited in terms of available funds for costly corrections, and in some cases, there has been confusion as to which agency is responsible for correcting certain problems (TFC or the tenant agency). As a result, there are numerous inspection findings that have remained uncorrected over several years.

A good example of this is the William P. Hobby Building in Austin. Admittedly, TFC is working through a list of approximately 100 violations, the fire alarm and fire sprinkler systems remain tagged, including both yellow and red tags. Some tags date back seven years. The Hobby Building is the home of the State Fire Marshal.

# Texas Facilities Commission-Leased Buildings

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## Updates on Challenges Foreseen in the 2012 Report

In the 2012 report, SFMO identified a number of potential challenges involved with the inspection of leased buildings.

The risk-related information currently available on state-leased buildings continues to be limited, making it impractical to schedule inspections on a comprehensive risk-based method. SFMO continues to schedule initial inspections of the leased inventory with priority given to the spaces with the largest amount of square footage leased, and those buildings that may be located in the geographical area of other inspection priorities. As the inspections are conducted, SFMO is continuing to collect further information on the buildings, as well as inspection findings to be incorporated into the risk-based method for prioritizing further re-inspections, once the entire inventory has been inspected.

There were some initial concerns that SFMO inspectors coming into local jurisdictions with established fire code enforcement programs might create a number of issues, including conflicts between state and local inspectors, and conflicting requirements for building safety features. To date there have been no major conflicts with local code enforcement officials. There have been a few incidents where the SFMO standard of inspection has required features beyond the locally adopted codes; however these situations have all been resolved without conflict.

While the mandatory inspection of TFC leased facilities has resulted in significant additional workload, adding over 10 million square feet of inspections to SFMO's list of

regularly conducted inspections, SFMO inspectors have scheduled these new inspection duties around existing responsibilities and other annual or ongoing inspections. The peril is that these additional inspections, without an expanded workforce, will result in longer periods between inspections.

## **Procedure**

Many buildings that are leased by TFC for state agencies contain other tenant areas as well. SFMO has limited its primary inspections to the actual space occupied by state agencies and does not inspect areas occupied by other tenants. SFMO also inspects each building's fire protection systems and means of egress features used by state agencies that may be outside of the space that they occupy, such as stairwells, corridors, and exterior exit doors.

Section 417 of the Texas Government Code directs SFMO to prioritize inspections of TFC leased facilities using a risk based methodology. Fire risk assessments, including the fire risk ranking method SFMO plans to use for prioritizing inspections of leased facilities, require detailed data and information in order to be effective. The current information available from TFC on the leased building inventory is very limited and is not conducive for use in a fire risk ranking system or other risk assessment methodologies. SFMO continues the inspection of the entire leased building inventory while collecting detailed information on each building in the process. This information will be incorporated into a database and fire risk ranking system that will be used for prioritizing future re-inspections of leased facilities. This risk ranking system will be similar to the one currently used for TFC owned and managed buildings.

TFC has agreed to advise SFMO when a lease is being renewed, when an agency is seeking new quarters, or when new space is needed. This allows SFMO to inspect prospective properties before a lease is signed and will help determine a schedule for re-inspecting the buildings.

## **Findings**

SFMO inspectors have found that routine maintenance of life safety features and equipment has been lacking in the majority of leased facilities despite the fact that many of these buildings are inspected by local jurisdictions. These features and systems include fire alarm systems, fire sprinkler systems, portable fire extinguishers, fire doors, emergency

lighting facilities, and illuminated exit signs. The *Life Safety Code* requires the periodic inspection, testing, and maintenance of these systems to ensure that they will operate effectively when needed. The improper use of electrical facilities by tenants (use of extension cords, interconnected power strips, etc.) has also been widespread, similar to the challenges faced in TFC owned and managed facilities. A list representing top fire code violations found by SFMO inspectors in state buildings appears in the executive summary.

When noncompliant conditions are found during inspections, TFC provides a written notification to building owners that they may be in violation of the terms of their lease agreement unless the items noted in SFMO's report are satisfactorily addressed. Additionally, SFMO inspectors provide a copy of their findings to the local authority. In the event that an owner does not provide a timely response or chooses not to address the noted fire and life safety issues, TFC will issue an official notice of default and may terminate the lease if the owner continues to be uncooperative. The vast majority of owners have been cooperative and addressed any SFMO inspection findings in a timely manner; there have however been a few facilities with major life safety issues that have resulted in relocation of state employees to other facilities.

In the following section, reference is made to "yellow tag." The yellow tag is a visual indication that the fire alarm, fire sprinkler, or fire extinguisher has a deficiency that could result in underperformance of the system in the event of a fire. Such conditions consist, but are not limited to, pipe sizes too small, inappropriate head spacing, annual performance testing failed, etc. On the other hand, a red tag indicates a deficiency from which the system tagged cannot operate as designed or may possibly fail to operate at all. Yellow tagged systems may continue to operate but should be repaired within a reasonable period of time, generally 14 days.

The following list contains highlights of inspection findings during the past year:

- The Department of Assistive and Rehabilitative Services leased space at 4102 Navarro in Victoria. The fire sprinkler system was yellow tagged for deficiencies for *two years*. The owners were slow to take the corrective action cited in the fire sprinkler inspection report. The owners were unresponsive to

SFMO requests for status updates on resolution of the problems. The case was finally closed after proper documentation was provided.

- Office of the Attorney General, 3460 Northeast Parkway, San Antonio. There have been four inspections of the facility and either there is an electrical issue or an exit sign issue. Fifth inspection still pending.
- Department of Family and Protective Services, 8930 Fourwinds Drive, San Antonio. There have been four inspections of the facility – latching devices not functioning on stairwell doors, lack of fire exit hardware on stairwell doors, and fire sprinkler system yellow tagged. Fifth inspection still pending.
- State Offices of Administrative Hearings, 10300 Heritage Blvd, Suite 250, San Antonio. There have been two inspections of the facility, - there are still unapproved or absent devices on exit doors, combustible storage underneath stairwell, stairwell not constructed with a fire rated window and door assemblies, and electrical issues. Third inspection still pending.
- Office of the Attorney General, 10010 San Pedro Avenue, Suite 701, San Antonio. There have been two inspections of the facility – agency moved into this location within a month prior to SFMO inspection and did not consult SFMO to note any deficiencies – dead end corridor of 57 feet within OAG suite, several stairwell doors not latching, stairwells lack information on stairwell identification, stairwell doors lack fire rated hardware, storage in stairwell, the high-rise building lacks a complete fire sprinkler system (only has a standpipe system), and penetration throughout stairwells. Third inspection still pending.
- Office of the Attorney General, 403 South W.W. White Road, Suite 350, San Antonio, Texas. There have been five inspections of the facility – stairwells discharge into the interior of building, latching device not functioning on stairwell door on third floor, stairwell door can be locked against egress on second floor, stairwell door lacks fire rated hardware on second floor, and unsealed penetrations and electrical issues in third floor mechanical room. Sixth inspection still pending.



- DADS, DARS, DFPS, DSHS and HHSC, 173 Wildcat, Del Rio. There have been two inspections of the facility – vending machine lacking GFCI protection. Third inspection still pending.
- Department of State Health Services, 1401 Las Vacas Street, Del Rio. There have been two inspections of the facility – fire alarm system last inspected in September 2009 and red tagged in November 2010 and several electrical issues. Third inspection still pending.
- DADS, DARS, DFPS, DSHS, and HHSC, 112 Joe Carper Drive, Uvalde. There have been three inspections of the facility – TFC contacted SFMO for inspection prior to moving into location, pending violations still exist from initial inspection, exit sign in training room directs occupants away from the exit door and electrical issues. Fourth inspection still pending.
- Health and Human Services leased space at 608 E. Loop 336 in Conroe. Owners were slow to correct deficiencies in the fire sprinkler system which had been yellow tagged since March 2012.
- TFC-leased Department of Public Safety office at 309 W. 7<sup>th</sup> Street in Fort Worth. The building has numerous fire sprinkler system yellow tag issues, the fire alarm system has a yellow tag and the means of egress from the DPS office does not meet the *Life Safety Code* requirements.
- TFC-leased Texas Department of Criminal Justice (TDCJ) office at 1201 N. Watson Road in Arlington. The building has all stairwells discharging inside the building and lacks both emergency lighting and a fire alarm system. The building owner continues to work with the tenant to resolve these issues.
- TFC-leased building at 622 S. Oakes in San Angelo. The fire sprinkler system has been yellow tagged for a considerable length of time and, although a plan has been developed to correct the problems, the fact that the building is owned by the city has further delayed corrective action.

- TFC-leased building at 3401 North A. Street in Midland. The building has unmaintained fire doors and exit hardware. SFMO was notified that the corrections had been made; however, on a follow-up inspection, it was found that the correction had not been made.

Previous years' reports contained references to state agencies moving due to failure of the local building owner to correct deficiencies. The SFMO Inspectors continue to have limited success in obtaining progress reports and timelines from lessor building owners on corrective measures that are required to correct the noted deficiencies.

Regardless of the exceptions mentioned above, enforcement of the *Life Safety Code* has been extremely successful. While SFMO's tools for enforcement are as limited as they are for TFC owned and managed facilities, the private building owners have numerous additional incentives to correct noncompliant findings that are not present for TFC owned and managed facilities. Private building owners must often answer to local code officials who have a significant number of tools available to gain compliance, ranging from fines to the direct authority to condemn an unsafe building. Building owners also face a financial incentive in the form of their lease agreement. If building owners do not provide a code compliant facility, TFC may terminate the lease and the building owners would lose an important customer.

## State-Owned Buildings Not Under the Control of the Texas Facilities Commission

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### Procedure

Although Section 417 of the Texas Government Code grants the SFMO authority to inspect buildings “under the charge and control of the Texas Facilities Commission,” it is important to note that not all state-owned buildings are under TFC’s control. Some examples of these buildings include buildings housing the following agencies:

- Texas Department of Transportation
- Texas Department of Public Safety
- State Preservation Board
- Texas Historical Commission
- Texas Workforce Commission
- Teacher Retirement System
- Employees Retirement System
- Texas Parks and Wildlife Commission
- Texas A&M Forest Service
- State Universities
- Texas School for the Blind and Visually Impaired
- Texas School for the Deaf
- Texas Department of Criminal Justice
- Texas Juvenile Justice Department
- Texas Military Forces
- State Supported Living Centers and Hospitals
- Finance Commission of Texas
- Texas Board of Professional Engineers
- The Alamo

Buildings under the control of TFC represent only a small portion of state-owned buildings. TFC maintains 64 buildings and 18 parking garages totaling 10,868,307 square feet. Based on data collected from the General Land Office, Department of Public Safety, Department of State Health Services, Department of Criminal Justice, Parks and Wildlife Department, Department of Transportation, and the Texas Higher Education Coordinating Board, there may be as many as 19,000 *individual*, state-owned buildings totaling in excess of 303 million square feet. During a recent review of state buildings, it was often found that a single address listed for an agency might encompass many individual buildings.

Currently, SFMO regularly inspects only a portion of these buildings, including those of state universities, state supported living centers and state hospitals, Texas Department of Criminal Justice (TDCJ), Texas Juvenile Justice Department (TJJD), and certain state preservation board facilities, including the Capitol. The number of buildings inspected on a recurring basis is just over 11,000 individual buildings.

Other agencies' facilities have undergone inspections on a one-time basis, including the Texas Board of Professional Engineers, Department of Public Safety, Texas Historical Commission, Teacher Retirement System, and the Employees Retirement System. Some agencies have also had one-time inspections conducted in a limited number of their facilities, including the Texas Department of Transportation, Texas Workforce Commission, and the Texas Military Forces. In addition to the one-time and recurring inspections, SFMO estimates that at least 3,600 state owned buildings have never been inspected. This number does not include buildings that may have been acquired by, for instance, state universities between one inspection visit and the next. Acquisition often occurs without any information being passed on to the SFMO and the building or buildings are discovered on a subsequent inspection.

A 1978 study conducted by the National Fire Protection Association and the Urban Institute recommended that all public buildings be inspected on an annual basis, since more frequent fire inspections have been shown to result in lower fire rates. This is merely a recommendation; while research shows that more frequent inspections yield better results, a best-practice inspection frequency has not been established (Hall et al. 2008 <sup>6</sup>). If SFMO

<sup>6</sup> Hall, et. al.

were to inspect each state-owned building and space leased by TFC, the number of inspectors would need to be increased nearly threefold. Fire departments throughout the country face similar challenges and annual inspections of all facilities within a jurisdiction are rarely achieved.

SFMO's ultimate goal is to inspect all state owned facilities on a regular basis. In lieu of inspecting all facilities annually, SFMO uses a risk-based approach for establishing a schedule for inspecting all state owned facilities. SFMO currently employs 14 inspectors who can each inspect 576 buildings per year (average of 48 buildings per month). However, SFMO inspectors devote 50 percent of their available time to state-owned and state-leased buildings inspections and the remaining time is used for re-inspections and other statutorily required inspections, meaning that SFMO will be able to conduct approximately 288 building inspections per inspector per year, 4032 total inspections of state-owned or leased buildings per year. This represents a 27.2 percent increase in inspection capacity over the previous year. SFMO has used the increase in capacity primarily to complete risk-significant inspections and to complete initial inspections on buildings that have been uninspected, some for an extended period of time.

SFMO has used the available information to schedule the inspection of the following state-owned facilities that represent the greatest risk:

- All TDCJ and TJJD facilities will be inspected once every three years. Detention facilities are unique, in that the fire and life safety program aims to protect occupants in place, rather than to remove them from the building. According to this schedule, SFMO would inspect 1200 buildings at detention facilities each year.
- Patient contact areas of state supported living centers, state hospital facilities, and other Health and Human Services Commission facilities that serve patients will be inspected each year. These facilities provide long-term psychiatric care for patients who may not be capable of self preservation and may also need to be protected in place. SFMO estimates that this schedule would require the inspection of approximately 935 buildings each year.

- University dorms will be inspected every other year, at a rate of approximately 507 buildings per year. University dorms are residential occupancies, often with high occupant loads, where occupants are transient in nature and may not be completely familiar with a building and its emergency features and procedures.
- Residential facilities under the charge of Texas Parks and Wildlife will be inspected once every three years or approximately 164 buildings per year.
- TFC-leased facilities will be inspected once every seven years, once the entire inventory has undergone initial inspections; this is the typical length of a TFC lease for space occupied by state agencies. Under this schedule, SFMO will inspect approximately 114 buildings per year.

After accounting for the critical facilities listed above and other inspection duties, SFMO will be able to conduct annual inspections of approximately 1,112 other state-owned buildings not included in the list given above. If we assume, conservatively, that there are approximately 16,000 (which is a conservative estimate as there may be as many as 19,000) total buildings, this means that these buildings will be inspected once every 8.2 years rather than as much as every 14 years.

SFMO feels that this reduction from 14 years represents a significant improvement. SFMO recommends that each building (including TFC leased facilities) should be inspected on a cycle that is at least once every five years. As previously noted in this report, studies show that more frequent inspections reduce the number of fires. Fire safety inspections not only assess the safety of the building and its components, they also promote prevention efforts by providing an opportunity to educate building occupants and management on how they can contribute to a safer environment. A five-year schedule allows SFMO to stay up to date with any building renovations and will keep occupants familiar with SFMO inspectors and life safety guidelines. However, SFMO still remains slightly resource-limited. A five-year inspection cycle could be achieved with 16 inspectors; SFMO currently employs 14 inspectors.

## Findings

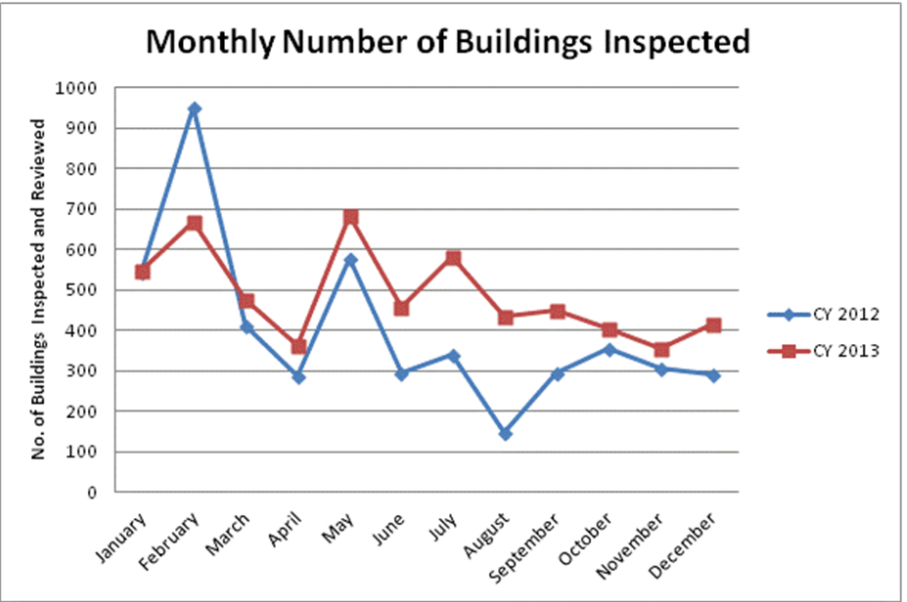
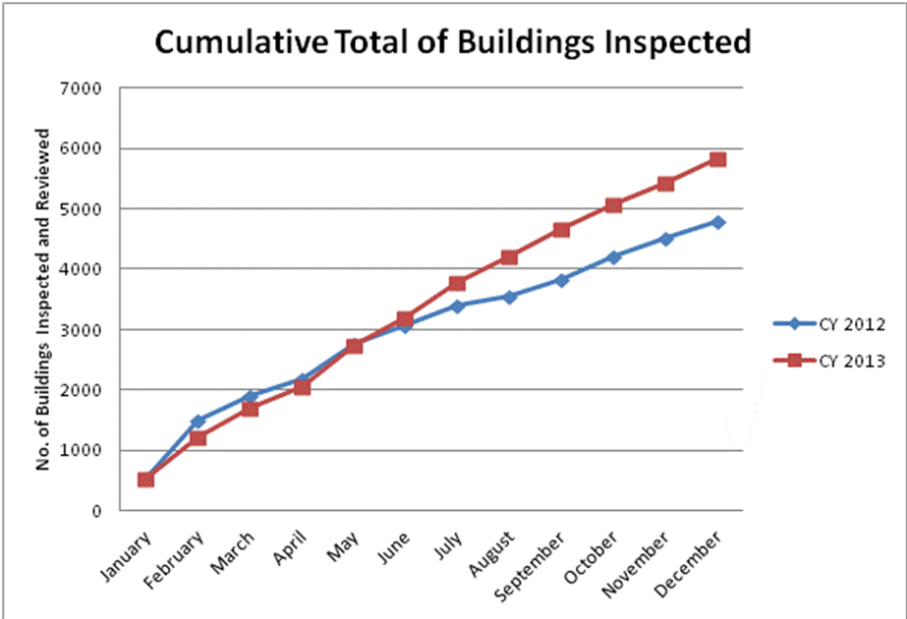
Of the buildings regularly inspected by SFMO, the level of compliance varies. State-run universities generally do an excellent job of maintaining their facilities, from a fire and life safety standpoint. Many universities have embraced the importance of fire protection and have hired their own fire protection professionals or “university fire marshals,” who actively enforce the *Life Safety Code* on campus. There are, however, some universities that have lagged behind in achieving maintaining a code-compliant campus. The University of Texas at Arlington (UTA) has a number of outstanding issues that have not been addressed, several dating back to inspections conducted in 2006. While UTA acknowledges the *Life Safety Code* violations noted in SFMO inspections, they continue to be unforthcoming to provide any indication of their plan to resolve all the issues. SFMO has also noted issues related to routine maintenance of building fire protective features at Sul Ross State University and at the University of Texas at Tyler. A recent re-inspection at the University of North Texas revealed that inspection deficiencies that had been reported as corrected had in fact not been done. Furthermore, additional new deficiencies were found.

The state schools and hospitals have also generally done an excellent job in maintaining code-compliant campuses. These facilities care for individuals with special needs who may not always be able to care for themselves in the event of an emergency.

Texas Department of Criminal Justice (TDCJ) facilities have had a long history of noncompliance with the *Life Safety Code*. The primary issue is that the majority of TDCJ facilities do not have the required fire alarm systems; 233 out of 400 facilities lack an operational fire alarm system. In many cases TDCJ has issued a “work order” for repairs or new systems; however there has been no further action beyond the issuance of the work order. Many of these work orders are more than 10 years old. The current SFMO administration is working aggressively to address this longstanding issue and has made changes to the administration and policies for the inspection of detention facilities.

In January 2013, the State Fire Marshal wrote to the Risk Manager for TDCJ requesting greater detail on what efforts have been undertaken to correct the deficiencies identified and offering to work more closely with TDCJ.

# Appendix 1: Year-to-Year Comparison of Inspection Measures





## Appendix 2: Fire and Life Safety Risk Assessment Factors for State of Texas Facilities

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The Fire and Life Safety Risk Assessment methodology consists of a number of factors, determined by general building characteristics and inspections that contribute to an overall risk for facilities in the State of Texas. The facility's overall risk is a product of all the factors. All facilities are based off a starting risk value of "1."

For any factors in which a specific value is not applicable or has not yet been determined, a place holder of "1" is assigned.

Three factors—Valuation, Critical Facility and Facility Management—have been identified but are not yet included in the overall risk calculation.

The Overall Risk Factor is the product of all the factors listed below. A higher value of the Overall Risk Factor is equivalent to a greater risk.

- Building Height Factor
- Building Use Factor
- Occupant Load Factor
- Sprinkler Protection Factor
- Alarm Factor
- Other Systems Protection Factor
- Sprinkler Violation Factor
- Alarm Violation Factor
- Other Systems Factor
- Egress Violation Factor
- Building Services Violation Factor