



ANNUAL REPORT REGARDING FINDINGS IN CONDUCTING LIFE SAFETY INSPECTIONS

FY 2017



TEXAS DEPARTMENT OF INSURANCE

Published December 2017

Texas Department of Insurance
Kent Sullivan, Commissioner of Insurance
Chris Connealy, State Fire Marshal

State Fire Marshal's Office
333 Guadalupe Street
Austin, Texas 78701

(512) 676-6800

www.tdi.texas.gov/fire

Highlights

The 84th Texas Legislature passed Senate Bill 1105, mandating the review of all state agency owned or leased buildings. Before SB 1105, only facilities controlled and leased by the Texas Facilities Commission (TFC) were required to be inspected. This covered 6 percent of state-owned and leased buildings and 4 percent of all state-owned and leased square footage.

The State Fire Marshal's Office (SFMO) continues to improve its inspection process and the documentation of violations. This has resulted in an increase in the number of violations identified due to a more thorough inspection process and more accurate reports. This also improves risk assessments; however, comparing the number of violations identified before and after the change can be misleading.

As previously reported, an unsafe locking arrangement for bathrooms in some university dorms is still being resolved. Additional issues include:

- A lack of funding continues to be the primary response by inspected entities as to why deficiencies have not been resolved. The additional funding TFC has received in the past is helping to reduce life safety violations in TFC properties.
- Additional buildings continue to be identified for inspection by the SFMO. The SFMO has a working list of more than 14,000 buildings in the state. This number continues to grow. The SFMO is continuing to work with other state entities, particularly university systems, to establish a reporting system that notifies the SFMO about new construction.
- Life safety inspections continue to find violations involving the use of extension cords and power strips and have identified a disturbing trend for fire wall penetrations.
- The Texas Department of Criminal Justice (TDCJ) has 400 detention units with issues such as working fire alarm systems. Some systems reported as having been fixed were found to be deficient. The agency continues to work with the TDCJ to identify and correct the violations in a cost-effective way.
- The SFMO helped Texas Parks and Wildlife Department on several projects, including the Academy Complex and issues at Big Bend State Park.

- The SFMO continues to face challenges to compile accurate data due to limitations of the current agency database. The SFMO is working with the Texas Department of Insurance (TDI) on a procurement to purchase a more modern fire inspection software. This will provide easier access to data and save time by allowing an inspector to document findings using a tablet while conducting the inspection.

Background

Texas Government Code, Section §417.0081(c), requires the SFMO to submit an annual report to the governor, lieutenant governor, speaker of the House of Representatives, and appropriate committees of the legislature about the State Fire Marshal's inspection findings. This report responds to that requirement.

The SFMO has been inspecting TFC managed 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 TFC. This report also includes information on the inspection of state-owned buildings not under the control of TFC. This authority was clarified in the 84th Texas Legislature by Senate Bill 1105. The SFMO's goal is to ensure that all state-owned and state-leased buildings provide a safe environment for state employees and the public.

Fiscal year (FY) 2017 marks the fifth year the SFMO has conducted legislatively-mandated inspections in state-leased buildings. These inspections were prioritized and conducted on a risk analysis basis developed in consultation with TFC and the State Office of Risk Management (SORM). During this same reporting period, 11 percent of SFMO inspections involved non-state-owned facilities for a fee as authorized by state law.

The SFMO began using the 2015 edition of National Fire Protection Association Life Safety Code (NFPA 101) in 2016. The SFMO and TDI will begin the process of adopting the 2018 editions of NFPA 1 and NFPA 101 within the current biennium.

The SFMO uses other NFPA codes and standards for guidance in assessing and directing the remediation of fire and life safety hazards. These additional codes are updated on a three to five year cycle, and the SFMO is in the process of adopting the updated editions of these standards.

The most common violations continue to be similar to previous years. As the SFMO conducts inspections, compliance and education are the primary focus in resolving violations.

Life safety code violations in state buildings

Most common violations in state owned or leased buildings:

- Lack of annual inspections of fire alarm and fire sprinkler systems (including systems that have either been red- or yellow-tagged).
- Inoperative exit signs and emergency lighting units, or non-working emergency lighting.
- Improper use of power strips.
- Extension cords being used as permanent wiring.
- Fire department connections not being maintained or properly marked.
- Penetrations of fire walls without sealing the penetrations. This can cause unimpeded fire spread in these void spaces.
- Exit doors not latching and not maintained for proper functionality.
- Locks on exit doors.
- Missing and damaged ceiling tiles.
- Broken electrical outlets that can cause risks of shock and fire.

Executive summary

To achieve full compliance with fire and life safety standards in TFC-owned and managed buildings, the SFMO continues to work with TFC and SORM to educate and change the behavior of tenants not complying with life safety standards. In addition to documenting code violations, the SFMO also notifies TFC of any violations of their tenant manual that are observed during the inspection.

Funding continues to affect the remediation of inspection findings of state properties. The SFMO works with TFC and other state-owned properties to prioritize inspections of facilities and identify deficiencies that pose the greatest risk. This is done to ensure that available funds are spent as effectively as possible to identify and resolve life safety risks.

The SFMO's efforts in the inspection of TFC-leased spaces have continued to be successful in identifying and resolving life safety risks in most cases. This success has been amplified by early coordination with local authorities who have jurisdiction and cooperation from the TFC, which has led to an effective process for inspecting leased buildings and enforcing the adopted NFPA codes. The 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. The 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 difference between obtaining compliance with the adopted NFPA codes in state-owned buildings versus its application in TFC-leased buildings. The SFMO has clearly defined enforcement authority, embodied in statute, in state-owned buildings. Privately owned buildings, leased by the state, are subject to local building and fire ordinances and contractual obligations. The SFMO continues to work with TFC, SORM, and occupying state agencies to make the most effective use of the resources available and to ensure that leased buildings are a safe environment for state employees and the public. Many building owners have corrected issues once they are made aware of them.

The SFMO's goal is to inspect all facilities every five years. In 2016, the SFMO made significant improvements to its inspection processes and the documentation of violations.

This has resulted in an increase in the number of violations documented due to a more thorough inspection process and more accurate inspection reports. For example, under the old process a building-wide violation, such as a lack of proper exit signs, was documented as a single violation. Under the new process, the inspector documents each instance of that violation within a building. This more thorough review, combined with information on the severity of each violation, results in more accurate risk assessments for buildings.

Since this process was initiated, the agency has discovered better ways to do risk assessments and is making more changes to provide better service and to inspect more state buildings. In FY 2017, the SFMO performed a risk analysis on all fires in Texas from 2003-2016 in commercial and multi-family occupancies that have a fire sprinkler system. The data showed that no Texans died in these occupancies unless the person was close to the fire's origins, such as a person cooking when a pan catches fire, or something caused the sprinkler system to not activate. Examples of circumstances that caused the sprinkler system to not activate included an airplane flying into a building that knocked out the system or a sprinkler valve being inappropriately shut off by a person. Sprinklers also greatly reduce property loss from fires. It is important that fire inspectors focus more of their time on occupancies that do not have fire sprinkler systems due to the higher risk of fire and fatalities in structures without these systems.

SFMO fire inspectors will inspect state facilities with a fire sprinkler system by looking at the fire sprinkler and alarm system to verify it is being maintained according to fire code requirements. The inspector will then do a walk-through of the building to determine if a more detailed inspection is required. A full inspection will be conducted every five to six years. This change went into effect on September 1, 2017, allowing more time to focus on buildings without sprinklers that have a higher risk exposure.

Fire inspections risk analysis and inspection cycles

The SFMO's goal is to inspect all state-owned facilities on a regular basis, consistent with the challenges presented by the building and its associated risks. The SFMO uses a risk-based approach for establishing a schedule for all state-owned facilities.

- Resident and patient areas of state supported living centers, state hospitals, and other Texas Health and Human Services Commission facilities that provide residential care will be inspected each year.

- Buildings seven stories or higher will be inspected every two years.
- University dorms will be inspected every two years.
- Other residential facilities under the charge of any state agency will be inspected every three years.
- The inspector will verify that fire drills occur at all state-operated schools, such as those that serve students with hearing and visual impairments, where the SFMO has primary responsibility for fire safety.
- State buildings that experience a fire with significant damage will be inspected every six months for a year and then return to the established inspection cycle for that occupancy.
- All state criminal justice facilities will be inspected 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.
- All other state owned and leased facilities will be inspected every five to eight years. Presently, the SFMO's inspection cycle for these remaining state buildings is eight years. The SFMO expects to be able to inspect these buildings every five years once a new record management system is implemented.

The SFMO has 16 fire inspectors. One of these inspectors is dedicated to the Capitol Complex. The SFMO conducted 5,807 inspections in FY 2017. This compares to 6,552 inspections in FY 2016. The SFMO identified 10,652 violations and 3,678 of those violations were corrected in FY 2016, compared to 10,216 violations and 6,447 of those violations corrected in FY 2017.

The SFMO has identified 2,434 locations owned or occupied by state agencies. However, a location may have more than one separate structure in need of an inspection. The SFMO estimates that there may be as many as 16,000-19,000 individual state-owned or state-occupied structures. Because there is no comprehensive database of state-owned properties at this time, the SFMO continues to collect information during each inspection to update its list of individual buildings. It should be noted that as a result of HB 3750 during the 84th Texas Legislature, a mandate was placed on the Legislative Budget Board, in conjunction with SORM, to develop a list of real estate owned by the State of Texas and to report the findings. The SFMO has been conducting its own research and has identified more than 14,000 structures. This process is ongoing and more buildings are being identified.

A recurring theme throughout this report is the availability of useful data. The SFMO's inspection database does not permit adequate queries for details on inspection findings and enforcement rates. The SFMO is looking to buy a software program that would enable the office to track detailed inspection information and compliance rates. In addition, an updated inspections database would make the execution of the SFMO's risk analysis and ranking systems more efficient and accurate.

Historically, information on the number and types of state-owned and state-leased buildings 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 available on these facilities is often outdated. Therefore, the SFMO collects detailed information needed for a risk analysis after inspecting the site. This results in a manual review of inspection data.

TFC-owned buildings

The SFMO, in coordination with the TFC and SORM, regularly inspect state-owned buildings and monitor fire safety improvements. Each agency assumes certain responsibilities, and the agencies meet quarterly to ensure ongoing cooperation and progress.

In accordance with Texas Government Code, Section §417.0081(b), the SFMO schedules periodic inspections of TFC buildings using a risk-based approach. The 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.

The SFMO coordinates with TFC building management when scheduling inspections to ensure access to all building areas and necessary equipment. After the inspection is completed, the SFMO provides inspection reports to TFC and SORM. The SFMO also provides a copy of the inspection report to the heads of agencies occupying the buildings, if requested. TFC generates work orders to correct any findings, coordinating with occupants as necessary, or to request additional funding for repairs that may not be possible within its current budget.

The SFMO continues to make progress by working with TFC. As an example, fire safety at the Texas School for the Deaf has greatly improved due to numerous fire protection upgrades. Work continues at this facility and should be completed in FY 2018.

Findings

Some buildings within the state’s portfolio have common features and deficiencies that create an elevated level of risk. As an example, high-rise buildings pose unique challenges for life safety and fire protection. These buildings are large, with high occupant loads. Violations found in these buildings include compromised fire/smoke barriers, improper locking systems that can hinder a person’s ability to escape a fire, and deficiencies in building fire alarms, fire sprinklers, and fire suppression systems.

There are notable issues that continually appear in other state buildings, such as rooms without sprinkler coverage, mechanical rooms that lack self-closing devices on every floor,

and utility shaft breaches throughout the structure with large holes in the mechanical room walls on every floor. Penetrations within the fire walls would allow a fire to travel unimpeded through firewalls and fire-rated floors, making fire protection features less effective.

Complete fire sprinkler systems and fire alarm coverage are essential elements of fire protection and occupant safety. However, their performance is degraded and the efficiency of evacuation of a building is diminished when these systems are tagged with deficiencies, have blocked exits, non-functioning fire doors or non-rated doors where fire doors are required, and firewalls with unprotected penetrations.

Consistent and ongoing building maintenance, while ensuring that contractors complete their work to the required standards, greatly influences the building's overall life safety. Major building service violations and egress problems can cause a building's life safety properties to deteriorate, regardless of the presence of sprinkler systems or fire alarms.

The most prominent issues related to state employees' actions throughout state-owned buildings continue to include the improper use of extension cords, power strips, and food warming and cooking equipment.

Cooking equipment is a leading cause of fires in the workplace, accounting for 29 percent of fires identified 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. Workspaces often contain combustibles that could ignite and 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 start a fire. The most common finding during SFMO inspections is interconnected power strips and extension cords. Occupants typically do this to increase the number of receptacles available for use and extend the reach of the power strip. Doing so places a strain on the building's electrical system as well as on the power strips themselves. There have been several recent

events in state buildings where an overloaded power strip has failed.

Extension cords are also commonly used to provide power to appliances. Extension cords are not designed to be under permanent electrical load and should not be used in the place of permanent wiring. The SFMO continues to note this violation to educate staff and management of the dangers of this condition. When additional receptacles are consistently 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, also may contribute to electrical distribution fires. Office building electrical systems are designed for a specific load that typically consists of computers, printers, and other related office devices. When occupants have their own coffee pots, heaters, and other appliances, the design loads for the office may be exceeded and cause stress on the building's electrical system over time. This continues to be a significant fire risk.

Inspectors continue to find power strips plugged into uninterruptable power supply (UPS) devices. This arrangement is improper for the power strip and may defeat the purpose of the UPS and the surge suppression of the power strip.

Each electrical connection increases the potential for heating on the electrical cord to occur. Each connection increases resistance and the overall load on the electrical system. Resistance heating is a well-known mechanism by which fires are started, and circuit breakers and other protective devices cannot tell the difference between "good" resistance and "bad" resistance heating.

Obtaining compliance in this area continues to be a challenge due to the lack of employee awareness, turnover in agency personnel, and frequent reconfiguration of office spaces. The SFMO, TFC, and SORM have worked together over the past several years to develop programs to address these tenant issues. SORM has produced a video on workplace fire safety that is available on the internet. The video may prompt employees to evaluate their individual work areas and make changes where necessary. The TFC updated its tenant manual to add information about the proper use of electrical utilities and the misuse of unauthorized appliances. The SFMO has included more detailed information on tenant-related issues in inspection reports so that TFC can notify leadership of tenant agencies

about life safety code violation issues. TFC will copy SFMO and SORM on these notices, so that the SFMO can follow up with agency leadership to help achieve greater compliance. In addition, SORM will copy the SFMO and TFC as needed on their reports, informing them of identified life safety code violations. Timely correction of code violations in TFC-owned and managed buildings has been a challenge. The SFMO seeks to obtain compliance with correction of deficiencies through communication with, and education of, the agency's stakeholders. The SFMO is developing a program to help educate workers on the dangers in the workplace. This presentation will be used to better educate staff and the safety personnel located on each floor of an occupancy. This training will include what to look for, how to notify SFMO of potential issues, and a fire safety check sheet to fill out each quarter and turn in to the SFMO inspector responsible for that building. This program will be conducted on a trial basis at TDI and the Division of Workers' Compensation offices before being launched statewide.

When those cooperative efforts fail, however, state law allows the SFMO to issue an order requiring remediation to the closure of a building. Enforcing an order may require assistance from the Office of the Attorney General for an injunction. Local fire authorities often have additional remedies, such as the ability to assess a fine, to bring a building into compliance.

The SFMO and TFC continue to work together on all buildings in their portfolio. SFMO inspectors and TFC have walked through several different buildings to clarify violations for TFC and to also work with TFC on alternatives for correction of the violations.

The following is an update on TFC building work and planned improvements.

Stephen F. Austin Building, 1700 Congress Ave., Austin

- Repaired or replaced the domestic water piping system, vertical sanitary waste stack, cooling tower, and support platform.
- Upgraded and replaced chilled water, hot water heating, fire protection, and electrical systems.
- New stairwell pressurization systems were installed for each stairwell.
- New air handlers and duct detectors were installed.
- Replaced recalled sprinkler heads.

William P. Hobby Building, 333 Guadalupe St., Austin

- Replaced obsolete security system.
- Replaced inefficient and outdated fire protection and electrical systems.
- Most sprinkler system deficiencies have been addressed.
- The fire alarm system has been replaced and programmable relays are installed awaiting connection to new/repairs smoke control fans, dampers, etc.
- A significant number of items related to panic hardware, locks on exits, rated door assemblies, repair of penetrations in rated frames, door closers for latching, and revised door swings have been identified and will be included in the work.
- Deficient stairwell signage and exit signage are scheduled to be replaced or added.

Price Daniel Building, 209 W. 14th St., Austin

- Replaced heat generating system and basement ductwork.
- Replaced existing pneumatic controls with digital controls.
- Upgraded or replaced exit, HVAC, fire protection, electrical and security systems.
- Conducted extensive repairs for sprinkler and fire alarm systems.

Lyndon B. Johnson Building, 111 E. 17th St., Austin

- Improved mechanical, electrical and fire protection systems.
- Upgraded or replaced exit, fire protection, and electrical systems.
- Made repairs to elevators.
- Reset new fire pump setup.
- Installed new stairwell pressurization systems.

DSHS Bob Glaze Building, 1711 San Jacinto Blvd., Austin

- Replaced or repaired life safety and fire systems.
- Repaired fire pump and removed yellow tags from sprinkler and fire alarm systems.

Williams Travis Building, 1701 Congress Ave., Austin

- Replaced obsolete and failing lighting systems.
- Upgraded and replaced exit, fire protection, and electrical systems.
- Replaced fire pump that did not meet design requirements.

John H. Winters Building, 701 W. 51st St., Austin

- Completed data center air conditioning and electrical redundancy improvements.
- Upgraded security and re-sealed exterior joints.
- Upgraded fire protection systems serving mission-critical data centers.
- Provided a 48-minute fire rated door to the main electrical room.
- Provided self-latching devices on exit access doors from suites/offices to the corridors.
- Provided additional smoke alarm and fire alarm devices.
- Upcoming work at this building will include installing exit signs, fire-rated doors, and emergency lighting.

William P. Clements Building, 300 W. 15th St., Austin

- Upgraded and replaced exit, fire protection, and electrical systems.
- Repaired fire sprinkler systems.
- Installed new duct detectors, adding new dampers to each.

Sam Houston Building, 201 E. 14th St., Austin

- Installed building controls for fire protection systems.
- Upgraded or replaced exit, HVAC, plumbing, fire protection, and electrical systems.
- Installed fire pump and fire department connection for easier access for Austin Fire Department.

Tom C. Clark Building, 201 W. 14th Street, Austin

- Enhanced indoor air quality.
- Made repairs to elevators and waterproofing systems.
- Made extensive repairs to fire sprinkler systems.

Other state buildings

- Sutton State Office Complex: Replaced elevator shunt relay and repaired circuit to the tamper/flow module and auxiliary power supply.
- Fort Worth State Office Building: Replaced third floor smoke alarm.
- Ramirez State Office Building: Replaced module causing water flow issue in stairwell.

- El Paso State Office Building: Strobes relocated in all conference rooms. Repaired system pipes in parking garage. Fixed leaking backflow pipes.
- Waco State Office Building: Repaired jockey pump and replaced the valve.

The SFMO and TFC continue to partner to identify and correct issues in state buildings to protect the safety of state employees and the public.

TFC-leased buildings

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

The risk-related information available on state-leased buildings is limited, making it impractical to schedule inspections on a comprehensive risk-based basis. The SFMO continues to schedule initial inspections of the leased inventory with priority given to the largest spaces and to buildings located near other inspection priorities. As the inspections are conducted, the SFMO collects additional information on these buildings, as well as inspection findings, to incorporate into the risk-based method for prioritizing future inspections.

When conducting an inspection of a leased property, SFMO inspectors contact the local authority who have jurisdiction. Generally, the SFMO's standards are more stringent than locally adopted codes. When issues arise due to the deviation between codes used by local and state inspectors, these situations have historically been resolved with the local authority without conflict.

While the mandatory inspection of TFC-leased facilities has increased the SFMO's overall workload, the SFMO inspectors continue to incorporate these duties into existing responsibilities and other annual and ongoing inspections.

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

TFC advises the SFMO when a lease is being renewed, an agency is seeking new quarters, or when a new space is needed. This allows the SFMO to inspect prospective properties before a lease is signed and will help determine a schedule for re-inspecting the buildings. Additionally, TFC has strong contract language that allows the state to terminate the lease should life safety issues not be addressed by the building owner. The SFMO recommends that all leases by state agencies include this provision.

Findings

SFMO inspectors continue to find that routine maintenance of life safety features and equipment is lacking in leased facilities.

These deficient life safety features and systems include fire alarm systems, fire sprinkler systems, portable fire extinguishers, fire doors and door closers, 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 systems by tenants (extension cords, interconnected power strips, etc.) is also common, like the challenges faced in TFC-owned and managed facilities.

When problems are found during inspections, TFC provides written notification to building owners that they may be in violation of the terms of their lease unless the items noted in the SFMO's report are corrected. SFMO inspectors also provide a copy of their findings to the local authority.

If an owner does not provide a timely response or address the noted fire and life safety issues, TFC will issue a notice of default and may terminate the lease. Most owners have addressed SFMO inspection findings in a timely manner. In cases where major life safety issues were not corrected, state employees were moved to other facilities.

State-owned buildings not under TFC control

While state law grants the SFMO the 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 the TFC’s control. During the 84th Texas Legislature inspections and reporting requirements were extended to all state buildings. Buildings under the control of the TFC represent a small portion of state-owned buildings. According to its 2016-17 Legislative Appropriation Request, the TFC maintains 17.8 million square feet of state-owned properties and 800 leases comprising 10.3 million square feet of leased properties. 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 more than 303 million square feet. During previous inspections of state buildings, it was often found that a single address listed for an agency might encompass many individual buildings.

The SFMO has regularly inspected only a portion of these buildings, including state universities, state supported living centers, state hospitals, state criminal justice facilities, and certain state preservation board facilities, including the Capitol. More than 14,000 individual buildings are inspected on a recurring basis.

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 also have 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 Department. The SFMO estimates that at least 3,600 state-owned buildings have never been inspected.

Under the SFMO’s new inspection procedures, all state buildings are now on a recurring inspection cycle. This includes rest stops, housing units, and any other state-owned or leased facilities previously not inspected.

Research shows that more frequent inspections yield better results through determining a

best-practice inspection frequency. To inspect each state-owned building and leased space annually, the SFMO would need to increase the number of inspectors. Fire departments throughout the country face similar challenges, and annual inspections of all facilities within a jurisdiction are rarely achieved.

The SFMO's goal is to inspect all state-owned facilities on a regular basis, consistent with the risk presented by the building, as identified in this report. The SFMO uses a risk-based approach for establishing a schedule for inspecting all state-owned facilities.

Universities

The SFMO continues to work with university systems to make sure fires are correctly and timely reported to the SFMO. In FY 2017, the agency received 38 reports of fires at state universities. It is important for universities to report fires to the SFMO as required to ensure a proper fire scene investigation can be conducted so that the state has accurate data.

The SFMO continues to conduct inspections on university campuses and has found life safety hazard violations that include fire alarm system and fire sprinkler systems being red tagged and non-working exit signs. In addition, the SFMO is not made aware of new construction between inspection cycles. Some of the new buildings are in violation of the adopted fire code. The SFMO recommends that universities coordinate with the office during the construction process to ensure that all new construction complies with life safety codes. As a result of this outreach, the SFMO has developed a working relationship with both the University of Houston and the University of Texas System. The SFMO encourages communication and notification with all of our university partners.

Findings

The locking arrangements in some university dorm bathrooms identified in previous reports have mostly been corrected, some by removing the locks. This change will prevent a student from being locked inside and unable to exit the bathroom.

Some state universities lease existing apartment complexes and rent the apartments to students. This continues to present challenges for the SFMO. Some of the apartment complexes do not meet the standards of NFPA 1.

Fire at UTMB's John Sealy Hospital

SFMO inspectors conducted an evaluation after the January 4, 2017 fire at the University of Texas Medical Branch's John Sealy Hospital in Galveston. The SFMO found that the hospital's fire alarm was current and had been inspected within the previous year. However, a smoke door near the room where the fire began failed to fully secure after the fire alarm activated. Because the door did not perform as required, the hospital wing had to be evacuated. The SFMO also found that the elevator smoke enclosures failed to seal

properly, causing smoke to fill other areas of the building that should have been sealed off from the fire.

The SFMO also found there were no required fire department phone connections in useful locations or radio signal boosting within the hospital, as required by code. The SFMO worked with hospital staff and the local fire department to resolve this issue.

Texas State Technical College (TSTC)

During a recent inspection of TSTC Waco, the SFMO identified several issues regarding the housing areas of the complex. The housing units were built between 1930 and 1950 and had electrical and egress issues. Most of the units do not have two ways to exit the building and need windows that could be used to escape a fire. The agency is working closely with TSTC Waco to resolve code violations.

The SFMO agreed to allow TSTC Waco to defer the replacement of code-compliant windows in housing units scheduled for renovation in FY 2018-2019. This would save more than \$300,000.

The Air Traffic Control Tower needs a sprinkler system installed because of its height and offices located below the deck of the tower. TSTC Waco has begun the installation of the fire sprinkler system, and it should be completed in FY 2018.

There are several other issues in various buildings, such as fire wall penetrations, and TSTC Waco is putting the necessary funding and effort into correcting the violations in FY 2018-19.

State schools and hospitals

Texas School for the Deaf

The Texas School for the Deaf and TFC have resolved most of the 130 fire safety violations noted in FY 2014. Those violations included red and yellow tagged fire alarm and fire protection sprinkler systems, lack of self-closing fire doors, a paint spray room lacking a supervised automatic extinguishing system, and other violations.

The Texas School for the Deaf implemented fire watches and has been working cooperatively with the SFMO to fix the violations, with a scheduled date of completion for FY 2018.

As of September 2017, the following items have been corrected:

- All sprinkler systems are impairment free.
- 75 percent fire alarms are now impairment free.
- All extinguishers have been brought up to standard.
- All fire hydrants have been fixed.

The SFMO, Texas School for the Deaf, TFC, and SORM continue to work together to correct all the life safety hazards that have been identified. It is expected that all fire code violations will be completed in FY 2018.

State hospitals and state supported living centers

The SFMO continues to inspect state hospitals and work with them to correct noted issues. The SFMO found 1,551 violations in FY 2017 at state hospitals and state supported living centers. Historically, violations and reports of fire are started by residents with access to cigarettes and lighters.

The SFMO has recommended that all of these facilities be equipped with Automatic Flameless Cigarette Lighters. These devices can be installed outdoors and residents can light a cigarette with a push of a button. The devices have helped to reduce the number of fires, specifically at the San Angelo State Supported Living Center. The SFMO also recommends residents be checked for flame producing devices in their possession while on the property.

SFMO posts all reported state property fires at www.tdi.texas.gov/fire/fmfsifirereport.html.

Texas Parks and Wildlife Department

The SFMO and the Texas Parks and Wildlife Department (TPWD) have agreed to meet quarterly to improve communication and understanding of the requirements of the SFMO and its adopted codes. The SFMO provided copies of NFPA 1 and 101 to TPWD staff, to better inform and improve understanding of the fire code requirements in order to help protect the safety of the millions of guests who stay within the park system each year.

The SFMO identified various violations within TPWD facilities, such as faulty RV hookups, missing smoke detection in cabins, and lack of fire department access boxes and fire extinguishers. The SFMO has worked with the TPWD to provide solutions to these problems. One issue is the placement of smoke detectors in a screened shelter. Placing smoke detectors near grills and camp fires can cause false alerts. Instead, the TPWD will place smoke detectors in these shelters when they are closed for the winter.

Residential facilities under the charge of the TPWD will be inspected once every three years, or approximately 164 buildings per year. Residential housing will be inspected once every two years until all houses are brought into compliance. Once compliance is achieved, the residential houses will fall into the three-year cycle with other areas of the park.

The SFMO identified several parks where the placement of fire department access boxes would be required, but difficult for the responding fire department. The SFMO agreed to have the boxes placed at the gated entry point with all the keys and documentation the fire department might require in one centralized box.

The SFMO worked closely recently to help resolve issues at the Franklin Mountain Park, San Felipe de Austin, and with the fire alarm system on the Battleship Texas.

Franklin Mountain issues involved requirements by the City of El Paso for fire protection and the need for a large water tank at the site. The issues are still being resolved, but the SFMO believes the project will be able to move forward with a cost savings to the TPWD and the state.

San Felipe de Austin was having issues with sprinkler coverage and other fire safety

requirements. The SFMO was able to work with TPWD to resolve those issues.

The Battleship Texas had an outdated fire alarm system. The SFMO has suggested alternatives to save money and alleviate the challenge of finding parts for the existing system. This is an ongoing evaluation, with a projected completion date in in FY 2018.

Texas Department of Criminal Justice

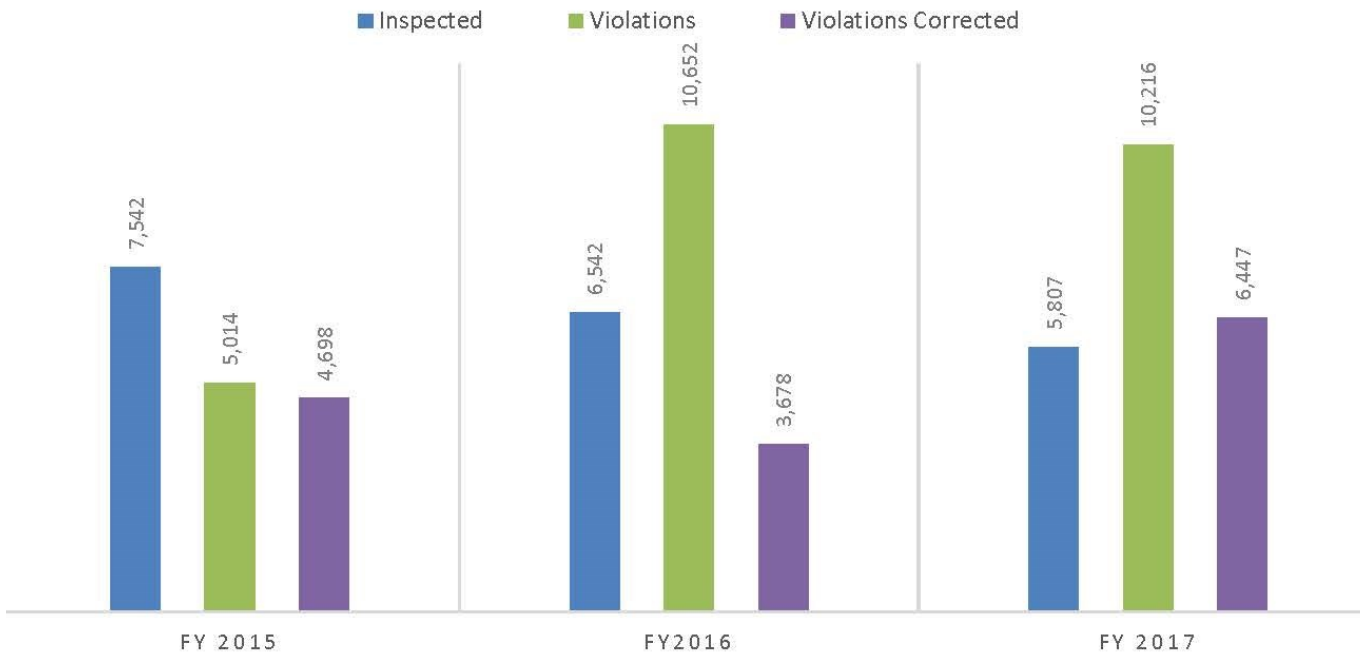
The primary issue identified at Texas Department of Criminal Justice (TDCJ) facilities is a lack of required fire alarm systems. Inspections have reported 233 out of 400 facilities lack an operational fire alarm system. In many cases, the TDCJ has issued a work order for repairs or a new system; however, there has been no further action. The TDCJ recently reported they are seeking bids to fix fire alarm systems at nine centers. The SFMO continues to work with TDCJ to replace non-working fire alarm systems.

The SFMO has provided a list of needed items given to resolve the required life safety items in the TDCJ's residential staff housing. The list included the replacement or repairs to smoke detectors, carbon monoxide detectors in housing with gas appliances, and GFCI outlets to protect the occupants. The SFMO will be inspecting the houses in FY 2018.

The TDCJ reports that when a fire alarm system is offline, a fire watch is implemented to ensure inmates are properly protected and can be removed from the facility in case of fire. In addition, the TDCJ has put in place new procedures to ensure that fires are reported to the SFMO.

Appendix A: State buildings and violations

STATE BUILDINGS & VIOLATIONS



The number of state buildings inspected decreased in FY 2016 and 2017 due to recruiting challenges and the required qualifications to conduct inspections. During the 85th Texas Legislature, the SFMO added a second inspector to the Capitol due to an increase in daily visitors. Additionally, up to four inspectors and investigators from other SFMO sections were reassigned as needed at various times during the legislative session. The reassignment of staff had an impact on the completion of inspections at state facilities.

Appendix B: Red and yellow tags

This report refers to red tags and yellow tags. A 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 include, but are not limited to: pipe sizing, inappropriate head spacing, annual performance testing failure, etc. A red tag indicates a deficiency from which the tagged system cannot operate as designed or might fail to operate. Yellow tagged systems may continue to operate, but should be repaired within a reasonable period of time, generally two weeks. Red tagged systems generally require immediate repair or may require the building to have alternative protection means, such as a fire watch.



**ANNUAL REPORT REGARDING FINDINGS IN
CONDUCTING LIFE SAFETY INSPECTIONS**

FY 2017