

Audit Report
May 9, 2019

Fire Prevention Inspections: Insufficient Resources Strain Code Compliance



BERKELEY CITY AUDITOR



Fire Prevention Inspections: Insufficient Resources Strain Code Compliance

Report Highlights

May 9, 2019

Findings

1. The Fire Department is not meeting inspection mandates. In fiscal year 2018, the Department's unresolved violations increased to nearly 2,500 and it did not inspect over 500 properties. Without increased staffing, the Department is strained by both City inspection requirements that go beyond California's requirements and the impacts of population growth.
2. The Fire Department's database does not contain a complete inventory of properties requiring inspections and lacks controls to ensure complete data.
3. The Fire Department staff need more support to be able to complete mandated inspections. Fire does not perform complete risk assessments or sufficiently communicate within the Department and with the community.

Increased Unresolved Violations, Fiscal Years 2016 to 2018



Source: Auditor analysis of Red Alert database

Why This Audit Is Important

The Berkeley Fire Department's fire prevention inspection program is critical to keeping Berkeley safe. When properties go uninspected and open violations remain unresolved by property owners, the City exposes the public to fire risks that could have devastating effects.

Objectives

1. To what extent has the Fire Department met the mandated inspection requirements?
2. How does the Fire Department manage fire inspections?
3. What challenges within the Fire Department remain in fire inspections?

Recommendations

We recommend that the Fire Department analyze the impact of making changes to the Berkeley Municipal Code to reduce the types or frequency of fire prevention inspections to align mandates with budgeted resources, and perform a workload analysis to quantify the staff needed now and in the future to comply with inspection requirements.

We also recommend that the Fire Department support the inspection program by coordinating work plans, using risk-assessment tools to identify high-risk properties, issuing formal guidance for managing the program, developing a communication plan, creating a public education program, and implementing a process for managing administrative citations.

The Fire Department agreed with our findings and recommendations.

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Introduction

In June 2018, the San Jose Mercury News released an exposé on fire prevention inspections in the Bay Area. The article reported that the City of Berkeley was not in compliance with state mandated fire prevention inspection requirements. An impetus for the article was the devastating Oakland Ghost Ship fire in December 2016 where 36 people died when a warehouse, illegally used for events, went up in flames. Berkeley cannot allow a similar tragedy to occur by failing to complete life-saving fire prevention inspections.

The Berkeley Fire Chief acknowledged in the article that mandated inspections were not getting done and asked our office to perform an audit. Despite resource constraints, we initiated an audit to understand the extent of this significant life and safety risk and what the Fire Department (Fire) needed to do to address it.

Objectives, Scope, and Methodology

This audit focused on identifying the problems with mandated fire prevention inspections and determining how Fire can better manage this important program to decrease risk. Our objectives were to determine:

1. To what extent has Fire met the mandated inspection requirements?
2. How does Fire manage fire inspections?
3. What challenges within Fire remain in fire inspections?

We examined fire prevention inspection records for fiscal years 2016 through 2018, performed interviews, conducted a survey, reviewed relevant California and Berkeley laws, and reviewed best practices to understand the program. For more information, see p. 22.

Background

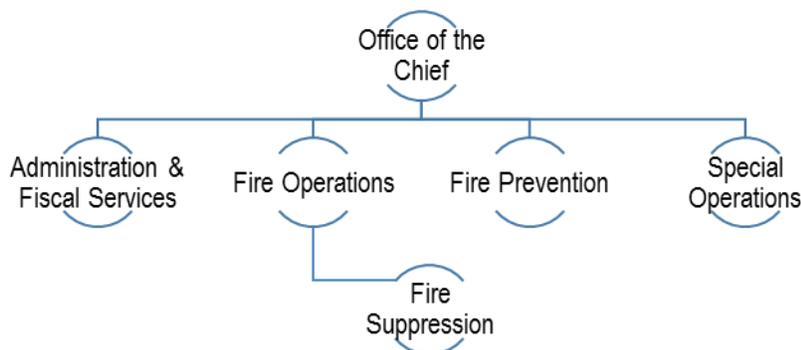
Fire prevention inspections help reduce the risk of fire. They also ensure that if a fire does occur, buildings are safer for residents evacuating and for firefighters entering the building. Fire prevention inspections examine a number of areas including:

- Exits are free from obstructions, do not lock, and are lighted
- Fire extinguishers are easy to access and have been serviced
- Flammable liquids and other hazardous materials have been properly stored
- Smoke and sprinkler systems are properly maintained
- Storage does not block sprinklers or escape routes, or provide fuel to a fire

The Berkeley Fire Department divides fire prevention inspection activities between the Fire Prevention (Prevention) and Fire Suppression (Suppression) Divisions (Figure 1). According to the Fire Chief, Prevention spends 30-40 percent of its time on inspections, which they must balance with other high-priority tasks. Their tasks include:

- Building plan reviews
- Code consultations
- Construction and building permit inspections
- Wildland-urban interface fire areas
- Citizen complaints
- Special permits for events or large parties
- Public education activities
- Group living accommodation inspections
- Inspections of large, complex, or high-risk buildings such as hospitals and schools

Figure 1: Berkeley Fire Department Organizational Chart



Source: City of Berkeley 2018-2019 Biennial Budget

The Fire Prevention Division reports directly to the Office of the Chief. Fire Prevention is overseen by the Fire Marshal and includes the Deputy Marshal, three Fire Prevention Inspectors, two Fire and Life Safety Plans Examiners, and an Assistant Management Analyst. Inspectors focus on field inspections, while Examiners focus on new construction plan reviews. Prevention uses a database system called Red Alert to record and track inspections and violations.

Fire Not Meeting Inspection Mandates; Extensive Code Requirements and Population Growth Impact Staffing Workload

As of June 30, 2018, nearly 2,500 fire code violations were unresolved and over 500 properties were not inspected at all. Fire is not meeting the mandate to perform fire prevention inspections and make sure property owners correct code violations. Fire's ability to meet City mandates is impacted by the City's extensive inspections requirements and growth across the City without a corresponding staffing increase. This puts the City at an increased risk since properties have known unresolved violations or haven't been inspected at all. This also means Fire cannot confidently state that residents and community members are working, shopping, and living in places that have mitigated the risk of fire.

Fire is not closing violations or inspecting all properties.

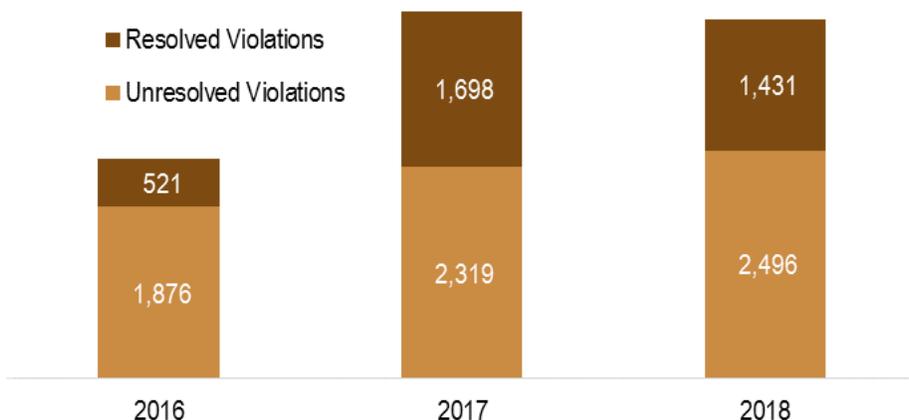
Unresolved violations increased from 1,876 to 2,496 between fiscal years 2016 and 2018 (Figure 2). These unresolved violations are associated with between 1,200 and 1,300 properties throughout the City. Unresolved violations indicate that a property has at least one issue, and at times multiple issues, that increase the risk of fire, loss of property, and loss of life. When Fire performs an inspection and finds violations, they are required to perform reinspections to ensure the violations are addressed by the property owner to reduce risk of fire. The data detailing the types and severity of the unresolved violations was not reliable enough to ascertain the details of the violations, but the number of unresolved violations is growing. Sixty-four percent of violations issued in fiscal year 2018 alone remain unresolved.



The Fire Department issued 3,927 violations in fiscal year 2018.

2,496 remain unresolved.

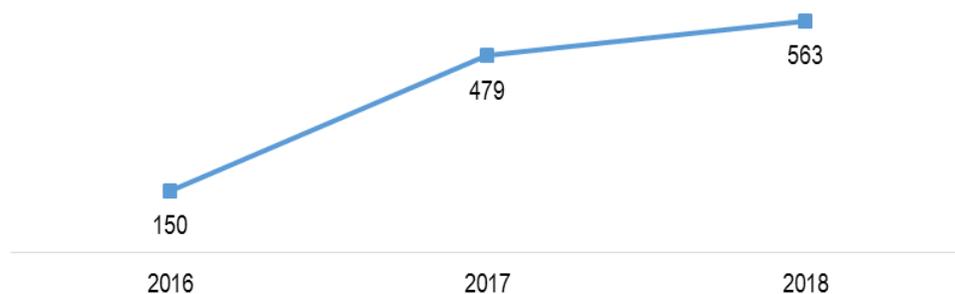
Figure 2: Unresolved Violations Increased from 1,876 to 2,496 in Fiscal Years 2016 to 2018



Source: Auditor analysis of Red Alert database

The number of uninspected properties has risen from 150 to 563, an increase of 275 percent, over the last three fiscal years (Figure 3). In fiscal year 2016, the number of uninspected properties was 1.9 percent of the total number of mandated inspections; by 2018 that had risen to 6.5 percent of all mandated inspections. While Fire closes most mandated inspections with no violations noted, there is an increase in the number of inspections that were not performed at all. This leaves the public vulnerable to increased fire risk.

Figure 3: Number of Uninspected Properties Increased Between Fiscal Years 2016 and 2018



Source: Auditor analysis of Red Alert database

City’s inspections code goes beyond state requirements.

Berkeley’s mandated fire prevention inspection requirements go well beyond those set by the California Fire Code, dramatically increasing Fire personnel’s workload. Not only does Berkeley require Fire to inspect more structures and properties than the state code, but it also requires that Fire inspect all

mandated properties every year. These additional requirements create a workload burden that significantly limits Fire’s ability to perform all required inspections and close unresolved violations. The Suppression staff we interviewed and surveyed pointed to the extensive requirements set forth by the City as a factor in being behind in closing violations and completing all inspections.

The California Fire Code, legislatively known as the California Building Standards Code, mandates most minimum fire safety requirements for new construction, existing buildings and facilities, and hazardous materials storage.¹ The California Health and Safety Code also includes relevant inspection mandates.² In 1973, Berkeley first adopted these codes, and additional requirements specific to Berkeley, into City law under the Berkeley Municipal Code (BMC). In 1982, Berkeley adopted into the BMC a local fire prevention inspections program that requires an additional number and types of inspections, and requires inspections to take place annually (Table 1).³

Table 1: State and Local Mandated Fire Prevention Inspections

| Inspection Requirement | California | Berkeley |
|---|--|--|
| All structures used for amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education. |  Frequency unspecified |  Required every year |
| All organized camps with program and facilities established for the primary purposes of providing an outdoor group living experience for five days or more during one or more seasons a year. |  Frequency unspecified |  Required every year |
| All buildings or structures used by more than six persons at any one time for educational purposes through the 12th grade. |  Frequency unspecified |  Required every year |

¹ California Building Standards Code (Cal. Code Regs., Title 24) is available here: <https://www.dgs.ca.gov/BSC/Codes>

² California Health and Safety Code Division 13 is available here: <https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=HSC>

³ Berkeley Municipal Code Chapters 12.50 and 19.48 are available at: <https://www.codepublishing.com/CA/Berkeley/>

| Inspection Requirement | California | Berkeley |
|---|---|---|
| All buildings or structures in which care or supervision is provided to persons who are or are not capable of self-preservation without physical assistance or in which persons are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. |  Required every two years |  Required every year |
| All buildings or structures that store, handle, or use regulated hazardous materials. |  Frequency unspecified |  Required every year |
| All buildings used for sleeping purposes including hotels, motels, lodging houses, and apartment houses. |  Required every year |  Required every year |
| All high-rise structures with floors used for occupancy located more than 75 feet above the lowest floor level having building access. |  Required every year |  Required every year |
| All residential structures of three units or more. |  Required every year |  Required every year |
| All commercial buildings and properties. | |  Required every year |
| All industrial buildings and properties. | |  Required every year |
| All institutional buildings and properties. | |  Required every year |
| All vacant buildings. | |  Required every year |
| All vacant lots. | |  Required every year |

Source: 2016 California Fire Code and Berkeley Municipal Code

Berkeley grows, but Fire staffing may not be keeping up.

Berkeley's population grew almost nine percent in the ten years following the 2000 census. The Association of Bay Area Governments projects that the City's population will grow nearly 25 percent between 2010 and 2040. The resulting development can be seen all over the City as store fronts change hands and large multi-use developments rise to change the skyline. Prevention staffing has not grown to meet those demands, further exacerbating Fire's ability to meet city inspection mandates.

Berkeley's growth over the past decade has stretched Fire's resources. Projected growth in the next 20 years means that the number of properties that require mandated inspections will stretch resources even more. Large, mixed-use developments put a further strain on Fire. It is more time consuming to review and approve life and safety plans for those structures, and it takes additional time and resources to respond to emergency calls at those buildings.

Fire Prevention has not seen an overall increase in authorized staffing since the Hills fire of 1991. In 1995, special funding for vegetation control in the hills ended. As a result, the Fire Marshal at the time restructured the Prevention Division, reducing staffing from 11.5 to 9.5 employees. Since then, Fire Prevention staffing has been further reduced and often averaged only four employees due to staff vacancies. Recently, Fire added three new positions in Fire Prevention. In July 2016, a new Examiner position was authorized. In July 2018, a new Inspector and a new Management Analyst were authorized. Fire stated that, while the new Inspector could help with some of the inspections backlog, this would not be enough to address all of the unresolved violations and uninspected properties.

Prevention's limited staffing has led to more reliance on Suppression to perform inspections. This is despite an increase in emergency calls in recent years and no changes in Suppression staffing since at least 2013. This puts a strain on Suppression's ability to perform all of their job functions, most of which are high-priority vital tasks like responding to 911 calls for service, maintaining fire and life safety equipment, and training. As a result, all of the 20 Suppression staff who responded to our survey stated that there were not enough people performing inspections to handle the workload.



As of July 2018, the Fire Prevention Division was budgeted for 8 FTEs:

- Fire Marshal
- Deputy Fire Marshal
- Sworn Fire Inspector
- Non-sworn Fire Inspector (2)
- Fire and Life Safety Plans Examiner (2)
- Assistant Management Analyst



All of the Suppression Staff who responded to our survey stated that there were not enough people performing inspections to handle the workload.

Despite experiencing a long-term staffing shortage, Fire has not done a complete workload analysis to understand its staffing needs. This impedes its ability to manage the inspection program in the short- and long-term, and to understand its resource needs. The City of Portland and the National Fire Protection Association indicate that, while it is a difficult task to ensure that a department performs all of their required inspections each year due to the higher level of competing priorities, fire departments can take steps to better manage prevention despite staff limitations. In particular, they recommend performing a workload analysis, even if it is high-level or a ballpark, to understand where there may be gaps in coverage between inspections needed and staff available to perform those inspections.⁴ Performing even a high-level workload analysis can help Fire understand where there are gaps in staffing and determine its future course of action to comply with inspection mandates.

Recommendations

To align the inspection mandates with the current and anticipated needs of the City, we recommend the Fire Department:

- 1.1** Analyze the short- and long-term impact of putting forth a change to the Berkeley Municipal Code to reduce the types or frequency of fire prevention inspections.

To understand the gaps in staffing needed to perform current and anticipated inspections, we recommend the Fire Department:

- 1.2** Perform a workload analysis to quantify the staff needed now and in the future to comply with the local fire prevention inspection requirements.

⁴ Portland's Fire and Rescue Department has taken effective actions on issues similar to those that Berkeley Fire is facing.

Fire Relies on Incomplete Data to Manage Inspections

Fire's inspection database, Red Alert, contains incomplete data, making it harder for staff to make sure that they are inspecting all mandated properties and unresolved violations. Fire's database does not automatically link with other City databases to ensure new properties and property changes are quickly and accurately reflected in Red Alert. Further, important controls over how users input data are not in place in Red Alert. Such controls provide assurance that staff input data accurately and consistently so Prevention has all the necessary information needed to perform inspections and resolve violations, particularly violations posing the most significant safety risks.

Fire does not have a complete inventory of properties requiring inspections.

Fire's database does not link to other City databases, which means that Fire does not have a complete inventory of all properties requiring inspection. Fire administrative staff reported that they manually enter new properties and changes to existing properties, such as a new address, new business name, or a change in business type, into Red Alert when they receive updates via interdepartmental mail or email from the Planning Department. Planning captures all data on new construction and changes to existing buildings and businesses in separate systems.

When Fire is not informed of new properties or changes to existing properties, those buildings may not be inspected as required. For example, we found that the new StoneFire Development on the corner of Milvia and University with 8,700 square feet of commercial space and 98 residential units was not included in Fire's database (Figure 4). StoneFire opened in August 2017 making it due for an annual mandated inspection in the fall of 2018.



The StoneFire Development with 8,700 square feet of commercial space and 98 residential units was not included in the Fire Department's inspection database.

Figure 4: StoneFire Development



Source: Johnson Lyman Architects

We found seven other large projects that were not in Fire’s database. After we alerted Fire to the issue, staff performed a labor-intensive manual reconciliation between Red Alert and the hard-copy memos sent out by the Planning Department. These memos identify property changes and new properties. As a result, Fire identified an additional 21 properties that require a fire prevention inspection. The new buildings were inspected prior to being occupied. However, because these properties were not included in Fire’s database, they have not since been inspected for compliance with fire prevention codes as required by City mandate. Because Fire’s database does not link to other City databases, there could be even more properties that have not been inspected since the City’s building landscape has changed dramatically over the years.

The Fire database lacks controls to reduce user error and ensure complete data.

Fire’s database does not automatically restrict how users input data, leading to errors and missing information that Fire relies on to monitor whether properties are inspected and violations are resolved. Automated controls help database users enter data systematically, capture required data, and protect records from unauthorized changes. For example, users can be required to



Seven other large projects were not included in the Fire Department’s database.

enter specific data in a field in order to save the record or only select from a list or menu of options. Because of the lack of controls, there's a risk of missing or incomplete data that ultimately affects Fire's ability to perform inspections, monitor properties used for specific purposes, and follow-up on critical code violations.

Throughout Fire's database, we found fields that users were not required to complete to save the inspection record, including fields that listed the property's complete address, the business name, and the inspecting individual's unit, shift, and name. We also found that the drop-down menus for inspection type, inspection status, and violation status fields allowed a user to select a blank option and still save the record. All of these fields are vital for Fire's record keeping to provide complete and accurate information to Prevention and Suppression staff.

We found similar issues with four fields used to record code violations: code number, code description, violation description, and violation location. In each case, users can leave a field blank or replace standard text with other, less specific information. For example, the code description field is intended to be the formal language of the code that is in violation but staff do not always input that information. We saw 196 examples of other text in the code description field such as "See open violations" or "See inspection from before." This removes the ability to easily search records, identify issues, and effectively manage the entire inspections program. Additionally, in 1,043 cases over the three years of our scope, the field reserved for the code number was either blank or did not directly reference a part of the fire code. That greatly impacts a firefighter or inspector's ability to perform comprehensive reinspections to close unresolved violations. It also impacts Fire management's ability to monitor and review the fire prevention inspection program.



Every field in the Fire Department's database is vital for them to capture

complete and accurate information about a property.

Recommendations

To ensure complete and accurate inspection records, we recommend the Fire Department:

- 2.1 Develop a process, in consultation with Information Technology Department, for sharing information on property changes and additions between Fire and other City database platforms.
- 2.2 Work with both the database's software vendor and the Information Technology Department to strengthen controls over the database, including:
 - Assessing the needs for required fields for processing an inspection, such as unit, shift, inspector name, address, violation details, and violation location.
 - Formatting drop-down menus for inspection status, inspection type, and violation status. Formatting the options available for the code violation numbers and violation description fields.

Fire Staff Do Not Have Enough Support to Get Inspections Done

Fire staff need more support to be able to complete mandated inspections. Fire does not sufficiently take resource constraints, competing priorities, and risk factors into account when planning and assigning inspections. Fire also does not have a sufficient plan for communicating between Prevention and Suppression, nor do they provide enough training to those performing inspections. Fire's communication with the public about the inspection program is neither complete nor consistent enough to help property owners know the options available to them. Without better support, the already overburdened fire prevention inspections program faces deeper challenges in completing the necessary work to keep the City safe.

Inspection assignments do not take competing priorities and risk into account.

Suppression staff have a number of important competing priorities that are not fully taken into consideration when Prevention assigns inspections. They perform all of the fire and medical calls in the City; are required to maintain extensive training in firefighting and emergency medical services; and perform most of the mandated inspections.

Prevention is in charge of the program, including assigning inspections to the Captains of the 27 Fire Suppression Companies. In 2018, that ranged from 235 to 310 for each Company. About every three months, the Fire Marshal sends out an email to Battalion Chiefs, the Deputy Chief, and the Chief detailing how many inspections each Company has completed and how many remain. The Fire Marshal also occasionally reports these numbers during Fire's command staff weekly meetings, attended by all staff members with a rank of Battalion Chief or higher.

Company Captains are assigned other divisional tasks, such as purchasing, maintaining, and testing Fire staff's personal protective gear. They also regularly have a new rookie firefighter in their Company who requires additional training and guidance. Even though fire prevention inspections are very important for mitigating the risk of fire, Suppression staff face the challenge of finding time to conduct inspections in between all of their other vital tasks.



A Fire Company is a single emergency response unit and its personnel. In Berkeley, a company is made up of three individuals on a fire engine or a truck: a fire captain and two firefighters.

Consequently, many Captains focus on completing inspections as quickly as possible rather than spending time focusing on high-risk properties or properties with long-standing issues. Of the 20 Captains that replied to our confidential survey, 55 percent replied that they do not conduct reinspections in a timely manner. One Captain reported in our survey that inspection assignments come out during one of their busy times of year, which makes managing workload and the Company's morale difficult.

Fire does not sufficiently take risk factors into consideration when assigning inspections to Companies, despite resources constraints and competing priorities. Instead, inspections are assigned to Companies geographically based on the location of their fire station. The National Fire Protection Association and professional fire publications like *Firehouse* indicate that, while it is difficult to perform all of the required inspections each year due to the significant competing priorities, cities can address resource limitations using a risk-based approach to inspection assignments. By assessing pending inspections and unresolved code violations by risk such as community demographics, socio-economics, geographical features, building use, and hazards present, cities are able to address the more significant risks with their limited staff and time. Risk assessments can start off as high-level and over time build to become more robust. For example, identifying properties with numerous violations or a history of violations, or high-risk facilities based on occupancy type is a simple yet effective high-level approach to conducting a risk-based assessment.

Captains told us in interviews that they do not have an opportunity to provide input to Prevention on high-risk properties in their service area. These are properties that Suppression staff would like to focus time and resources on to enforce compliance. One Captain said that he uses risk factors to prioritize his own company's inspections, but he still has to get all of his assigned inspections completed, even if a high-risk inspection took longer to close. He said that if he spends "too much time" closing a high-risk property, he falls behind in completing his other inspections and tasks.



70%

percent of the

Captain we surveyed said their Firefighters have too many things to focus on to prioritize inspections.



Cities can address resource limitations by using a risk-based approach to inspection assignments.

Fire Management and Prevention do not regularly communicate with Suppression about inspections.

Fire Management does not regularly communicate with Suppression about the importance of the Fire Prevention inspection program. Doing so would strengthen Fire's ability to perform inspections efficiently and effectively. The inspection program is managed by Fire Prevention, but Suppression, which takes direction from the Office of the Chief, is assigned the largest portion of mandated inspections. However, there is no regular formal or informal communication plan between Prevention and Suppression that acknowledges the barriers to effective communication in Fire. As a result, there is little communication between the two divisions.

Coordinating how to communicate with over a hundred people on varying schedules stationed across the City is a challenge, but can be accomplished with better communication between those doing the work and those in charge of it. The Fire Marshal attends the weekly command staff meetings with Suppression management, but there is little face-to-face interaction between Fire Prevention and the Companies tasked with performing the work. By comparison, Portland Fire uses both formal and informal methods to communicate with staff, including a weekly video address from the Chief. This varied communication style has led to bolstered motivation and respect through the large department, translating to more efficient and effective work.

Fire's guidance for the inspection program lacks sufficient detail for communicating and coordinating efforts. The General Order for fire prevention inspections has not been revised since 2011. It does not address the overall importance of performing the inspections, describe communication protocols between the Prevention and Suppression divisions, or identify resources for Suppression to use while performing inspections. Fire uses General Orders to communicate policy changes and department-wide initiatives to staff. By not updating the General Order for the prevention program, the department has indicated a lack of management support for the program's needs.



The Fire Department's guidance for the inspection program lacks sufficient detail for communicating and coordinating efforts.

Firefighters do not receive hands-on training on performing inspections.

Firefighters do not receive the training they say they need to perform fire prevention inspections. Fire provides only a 4-hour classroom-based training to update firefighters on the changes to the database, including any fire code or process changes. We heard from Captains, both in interviews and in our survey, that this is not what is needed in the field. The National Fire Protection Association recommends that fire departments provide Suppression crews with help, including practical trainings, to increase the quality, efficiency, and consistency of the inspections.

During interviews, some firefighters said that they specifically need training in a real-world environment on how to communicate with property owners during the inspection process, use best practices for managing the workload, and perform inspections in an efficient but effective manner. All Captains complete a 40-hour Fire Inspections and Investigations course, including 29.5 hours of lecture and 3.5 hours of testing. However, in our survey of Captains, only 40 percent stated that they received adequate training to understand their responsibilities for performing inspections and to do their job well. Sixty-five percent of Captains surveyed said that they would like to receive additional training in performing inspections. Adding consistent, hands-on training using experienced Suppression staff will allow Fire to provide real-world training on how to perform inspections in the community.

Fire does not educate property owners about the importance of inspections.

According to Prevention staff, capacity limitations lead to their inability to sufficiently educate the community about fire prevention inspections. This leaves property owners ill-informed about what inspections entail, how to remedy violations, and what the consequences are for noncompliance with fire codes. The National Fire Prevention Association and professional publications recommend that departments educate the community on the inspection program and why it's important. By informing property owners of the inspection program and how to identify and address common violations, Fire can perform inspections more efficiently and effectively. Conversely, when property owners lack information, it takes longer to perform inspections and there are more violations. Captains corroborated this when 55 percent of our



65% of

Captains surveyed said that they would like to receive additional training on performing inspections.

survey respondents stated that most people do not know why firefighters are there when they walk in the door to conduct inspections.

Fire's lack of public information and education also impacts how the community sees inspections. Fire provides a valuable service and alerts property owners to violations that could impact the life and safety of those in their buildings. However, 70 percent of Captains we surveyed thought the community either did not appreciate, or were not sure if they appreciated the inspections. This may be a sign of the lack of public education around this program designed to reduce the risk of fire in the City.

Fire does not have a consistent process for enforcement.

Fire has an enforcement option but is not consistently using it to compel property owners to fix code violations. The administrative citation process is available to Fire Prevention staff and some Fire Suppression management to enforce violations. Administrative citations are a useful tool to require compliance from property owners with unresolved fire code violations.⁵ The City can levy fines of up to \$500 per violation per day of non-compliance and can place a lien on the property to recover those costs. According to Fire, they do not have the staff capacity to track the revenue collected as part of enforcement actions, which could help fund additional resources for the unit. Fire also has the authority to “red tag” a building, deeming it too dangerous for people to inhabit. Other City divisions, such as Neighborhood Services, use the administrative citation process to bolster their enforcement capacity and target high-risk properties with numerous or long-standing violations. According to the City's Code Enforcement Supervisor, Neighborhood Services has seen an increased rate of compliance from property owners since staff have begun emphasizing the use of administrative citations.



Berkeley can
levy fines of up to
\$500 per code

violation per day of
non-compliance.

⁵ Berkeley Municipal Code sections 1.20 through 1.28 outline the citation process and those authorized to issue them.

Recommendations

To recognize competing priorities and address the most high-risk properties, we recommend:

- 3.1 The Fire Prevention Division coordinate work plans with Suppression for all mandated fire prevention inspections. These should take into consideration the volume and nature of the other work Suppression performs.
- 3.2 The Fire Department create a risk-assessment plan to identify those properties that are most at risk of a fire.

To facilitate communication with and training for all employees that perform inspections, we recommend:

- 3.3 The Fire Chief issue a General Order to the Department on the importance and necessity of performing fire prevention inspections.
- 3.4 The Fire Marshal and Suppression Management jointly develop a communication plan between Fire Prevention and Suppression.
- 3.5 The Fire Department revise fire prevention inspection training to provide hands-on training, using experienced Suppression staff, on how to conduct inspections and interact with residents and community members during inspections.

To strengthen public outreach and enforcement, we recommend the Fire Department:

- 3.6 Develop and distribute educational information to property owners prior to the beginning of the inspection cycle to provide information on the fire prevention inspection program, common violations, and any upcoming inspections for that area of the City.
- 3.7 Create a process for issuing, tracking, and following up on administrative citations for properties with repeat or high-risk violations, including revenue collections and tracking. That process should collaborate with other City work units that perform enforcement activities to provide consistency.

Appendix I—Methodology and Statement of Compliance

Methodology

We audited the Fire Department’s fire prevention activities including processes for performing fire prevention inspections and reinspections, mandates regarding those processes, and inspection results for fiscal years 2016 to 2018. We did not specifically perform work around the designated Wildland-Urban Interface Fire Areas. We performed a risk assessment of the Fire Prevention Division’s practices and procedures to identify potential internal control weakness and including fraud risks. While we did identify potential fraud risks, none were specific within context of our audit objective. We found control weaknesses within the context of our audit objectives that could prevent compliance with fire prevention inspection mandates: staffing capacity, incomplete data, and poor communication and coordination protocols. We designed our audit work accordingly. To accomplish our audit objective, we:

- Reviewed Berkeley Municipal Code sections 1.20, 1.28, 12.50, 19.28, and 19.48, and the California Fire Code to understand code inspection and citation requirements, and the variances between local and state codes. We focused on current requirements and did not investigate any proposed legislative changes that could further impact Fire’s workload.
- Interviewed Fire Prevention, Administrative, and Suppression staff to gain an understanding of their processes for performing and managing inspections, and to obtain their professional perspective as to the constraints that they must work within and the process improvements that would address those constraints.
- Observed the sworn Fire Prevention Inspector performing inspections to understand the workflow of an inspector and the constraints they face in performing their work.
- Surveyed all 27 Fire Captains on their resource capacity, impressions of the fire prevention program, and needs to fully perform their work. Twenty responded.
- Reviewed historical Fire Department documents to understand trends in fire prevention workloads, priorities, funding, and staffing.
- Reviewed professional publications and major newspaper stories to understand the general issues facing fire departments and fire inspection programs.
- Reviewed other municipalities’ audits of fire prevention activities to understand how those audits were conducted and the challenges faced by those fire departments.
- Analyzed the Red Alert database for violation and inspection trends, and input controls.

- Analyzed departmental reports, planning documents, and communications to understand how Fire manages the fire prevention program and communicates program needs and progress within work units and across the department.
- Reviewed best practices in the industry with respect to how other departments and professional organizations perform fire prevention inspections given limited time and staffing. We specifically relied on a comprehensive fire prevention report by the National Fire Protection Association as the primary standards organization for fire departments across the country. We also used a study of the City of Portland, Oregon's fire department, which featured their improvements to manage their fire prevention program more effectively and efficiently when faced with similar challenges as Berkeley.

Data Reliability

We assessed the reliability of the Red Alert data by interviewing data system managers and owners; examining the data for completeness, consistency, and appropriateness; and reviewing system manuals. We found that some data fields were reliable for our purposes while others were not. We amended our audit work accordingly and limited the use of Red Alert data to those fields we found sufficiently reliable. We cited the critical data weaknesses in our findings and conclusions and made recommendations for addressing those weaknesses.

Red Alert data are stored in two separate datasets: inspections and violations. Both use drop-down menus to populate fields and we determined those were reliable for use in our analysis. The status field in the inspection dataset, which identifies whether an inspection has been completed, scheduled, or resulted in a violation, was populated as expected in nearly 100 percent of all records. For our scope, fiscal years 2016, 2017, and 2018, the field was blank in only 0.95, 2.75, and 1.3 percent of the records, respectively, and all populated fields contained a selection from the dropdown menu as expected. We, therefore, determined that the data were sufficiently reliable for the purpose of quantifying the volume of uninspected properties.

Similarly, the violations dataset uses a drop-down menu to indicate whether a cited violation has been resolved or remains unresolved by the property owner. That field was populated as expected in nearly 100 percent of all records. For our scope, fiscal years 2016-2018, the field was blank in only three of 10,344 records, and all populated fields contained a selection from the dropdown menu as expected. We, therefore, determined that the data were sufficiently reliable for the purpose of quantifying the unresolved property violations.

In both datasets, we found that other fields were either left blank too often and/or contained data unsuitable for analysis, e.g., asterisks and references to other records. We, therefore, determined that we could not rely on those data fields for more extensive analysis on the number of uninspected properties by property type; the common types of violations; and the unresolved violations by property type. We also could not reliably

quantify the more severe types of violations that remain unresolved.

Additionally, the City's land management and business license data systems do not have the data fields needed to readily identify properties requiring annual fire prevention inspections. Therefore, we did not plan our work to match properties across platforms to identify properties missing from Red Alert. We limited our assessment to focus on the lack of an automated process between Red Alert and the City's building permitting system that leads to a cumbersome, manual process for communicating new construction and building changes to Fire Prevention.

We relied on US Census population and ABAG population predictions to understand population growth trends in Berkeley. We considered both organizations to be known, reliable sources and, therefore, their data to be sufficiently reliable for our purposes. We recognized both the US Census and ABAG offer slightly differing predictive data. However, the purpose of our predictions is to give readers a general understanding of future impact with an understanding that actual population growth will be different.

Statement of Compliance

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

Appendix II—Recommendations and Management Response

City Management agreed to our findings, conclusions, and recommendations. In our meetings with Fire Department management, they described their current and planned actions to address our audit recommendations. We found those verbal responses reasonable. Below is the Fire Department's initial corrective action plan and proposed implementation dates. As part of the follow-up process, the Berkeley City Auditor will be actively engaging with the Fire Department every six months to assess the process they are making towards complete implementation.

1.1 Analyze the short- and long-term impact of putting forth a change to the Berkeley Municipal Code to reduce the types or frequency of fire prevention inspections.

Proposed Implementation Plan: Fire needs to research the history and rationale for the local adoption of an annual commercial inspection program. Based on the research results, Fire will evaluate the risk versus benefits of the type and frequency of fire prevention inspection that are not mandated by the state laws.

Proposed Implementation Date: April 1, 2020

1.2 Perform a workload analysis to quantify the staff needed now and in the future to comply with the local fire prevention inspection requirements.

Proposed Implementation Plan: The current Fire Prevention staff cannot complete some essential tasks to maintain a fire safe city. A consultant or other Fire Department staff providing that the resource is available would be best to conduct a comprehensive workload analysis for Fire Prevention.

Proposed Implementation Date: April 1, 2020

2.1 Develop a process, in consultation with the Information Technology Department, for sharing information on property changes and additions between Fire and other City database platforms.

Proposed Implementation Plan: Fire has been working with Information Technology (IT) as well as the Planning Department for the past couple of years. The newly implemented software, Accela, used by the Planning Department has its share of issues communicating with the current fire record management software, Red Alert that the Fire Department has been using. There are similar communicating issues between FUND\$ and Red Alert as experienced with the implementation of Finance Department's ERMA software. With support from IT, Fire is currently seeking a software that can communicate with the software used by the Planning and Finance Department.

Proposed Implementation Date: July 1, 2021

2.2 Work with both the database's software vendor and the Information Technology Department to strengthen controls over the database, including:

- Assessing the needs for required fields for processing an inspection, such as unit, shift, inspector name, address, violation details, and violation location.
- Formatting drop-down menus for inspection status, inspection type, and violation status. Formatting the options available for the violation code numbers and violation description fields.

Proposed Implementation Plan: IT renewed the technical support contract with the software vendor in 2018. Fire Prevention will reach out to Red Alert to determine their ability to customize fields within the software. Additionally, Fire and IT are actively reviewing available software that can meet the needs of Fire and is compatible with software used by the other city departments.

Proposed Implementation Date: January 1, 2020

3.1 The Fire Prevention Division coordinate work plans with Suppression for all mandated fire prevention inspections. These should take into consideration the volume and nature of the other work Suppression performs.

Proposed Implementation Plan: Coordination of the workplan of suppression units will improve with the updated General Order giving clear expectations of inspection policy and procedure. Issues that arise due to the emergency response nature of suppression work will be coordinated across divisions.

Proposed Implementation Date: October 1, 2019

3.2 The Fire Department create a risk-assessment plan to identify those properties that are most at risk of a fire.

Proposed Implementation Plan: Fire Prevention has begun assigning inspections based on occupancy type and state mandated requirements. This basic level of risk assessment is improving compliance and prioritization. A longer term more holistic risk assessment requires algorithms that analyze data that include fire history, various socio-economic indicators, and occupancy type. The Fire Chief is researching the resources needed to conduct such assessments using other cities' programs as models.

3.3 The Fire Chief issue a General Order to the Department on the importance and necessity of performing fire prevention inspections.

Proposed Implementation Plan: The Fire Chief will revise the General Order to stress the importance and the expectations of Fire Prevention Inspections to the Suppression personnel.

Proposed Implementation Date: October 1, 2019

3.4 The Fire Marshal and Suppression Management jointly develop a communication plan between Fire Prevention and Suppression.

Proposed Implementation Plan: Beginning in March, Fire Prevention started issuing completion status of the annual inspection to the Battalion Chiefs and Captains with copy to the Fire Chief and Deputy Chief at the beginning of each month. In the long term, with the revised General Order, the designated Shift Fire Inspector will take on a more active role as a resource to guide the suppression staff on conducting annual inspections.

Proposed Implementation Date: October 1, 2019

3.5 The Fire Department revise the fire prevention inspection training to provide hands-on training, using experienced Suppression staff, on how to conduct inspections and interact with residents and community members during inspections.

Proposed Implementation Plan: The revised General Order shall clearly spell out training requirements and expectations of the Suppression Staff. Training Division shall allocate more time for the Suppression staff to be trained on Fire Prevention Inspections. The designated Shift Fire Inspector can provide hands on training to the Suppression staff in the field as needed. Also, Officers Academy shall include a fire prevention inspection module.

Proposed Implementation Date: October 1, 2019

3.6 Develop and distribute educational information to property owners prior to the beginning of the inspection cycle to provide information on the fire prevention inspection program, common violations, and any upcoming inspections for that area of the City.

Proposed Implementation Plan: Short term: The Fire Department is participating in the City's efforts in revamping the website. It will include additional Fire Prevention and Public Education materials. The Fire Department's Office of Emergency Services will be preparing a comprehensive Wildfire Safety packet to all property owners. Due to current staffing limitations, there is no capacity to engage in full time public education. Funding for additional staff will be considered in the budget process.

Proposed Implementation Date: July 1, 2020

3.7 Create a process for issuing, tracking, and following up on administrative citations for properties with repeat or high-risk violations, including revenue collections and tracking. That process should collaborate with other City work units that perform enforcement activities to provide consistency.

Proposed Implementation Plan: The Fire Department will review internal policies and procedures then update the Fire Prevention General Order. The Fire Department will make every effort to coordinate this policy with policies from the City Attorney’s office and other city enforcement units such as Code Enforcement, Environmental Health, Building and Safety, Housing Code Enforcement, etc. to ensure a common experience for the public.

Proposed Implementation Date: July 1, 2020

Mission Statement

Promoting transparency and accountability in Berkeley government.

Audit Team

Claudette Biemeret, Audit Manager
Tracy Yarlott-Davis, Auditor-in-Charge
Erin Mullin
Farkhad Askarov

City Auditor

Jenny Wong
Ann-Marie Hogan (Retired)

Office of the City Auditor

Phone: (510) 981-6750
Email: auditor@cityofberkeley.info
Website: www.cityofberkeley.info/auditor

Copies of our audit reports are available at:
www.cityofberkeley.info/Auditor/Home/Audit_Reports.aspx



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To: Honorable Mayor and Members of the City Council
From: Jenny Wong, City Auditor *zw*
Subject: Fire Prevention Inspections: Insufficient Resources Strain Code Compliance

RECOMMENDATION

We recommend City Council request that the City Manager report back by December 3, 2019, and every six months thereafter, regarding the status of our audit recommendations until reported fully implemented by the Fire Department. They have agreed to our findings and recommendations. Please see report for management's response.

FISCAL IMPACTS OF RECOMMENDATION

The Berkeley Fire Department (Fire) may need funding if the staffing analysis that we recommend they complete shows that they need additional staffing to effectively manage their fire prevention inspection program. This cost could be at least offset by an increase in revenues from fees and administrative citations due to increased inspections. Fire can also increase its revenues by implementing a process to issue, track, and follow up on citations issued as we recommend.

CURRENT SITUATION AND ITS EFFECTS

Fire is not meeting the mandate to perform required fire prevention inspections and ensure property owners correct code violations. As of June 2018, the Department had nearly 2,500 open violations and had not inspected over 500 properties. Their ability to meet inspection mandates is impacted by the City's extensive code enforcement requirements and growth across the City without a corresponding staffing increase.

Fire's inspection database, RedAlert, does not contain a complete inventory of properties requiring inspections or complete code violation records, making it harder for staff to complete all mandated properties and follow up on code violations. Further, important controls over how users input data are not in place in that database. Such controls provide assurance that staff input data accurately and consistently so the Fire Prevention Unit has all the necessary information needed to perform inspections and address violations, particularly violations posing the most significant safety risks.

Fire staff need more support to be able to complete mandated inspections. Fire does not perform complete assessments to balance the competing priorities and target high-risk properties. Fire also does not have a sufficient plan for communicating between Prevention and

Suppression staff, and they do not provide enough training. Fire's communication with the public about the inspection program is not sufficient to help property owners know their responsibilities and options. Without better support, the already overburdened fire prevention program faces deeper challenges in completing the necessary work to keep the City safe.

We recommend that Fire analyze the impact of making changes to the Berkeley Municipal Code to reduce the types or frequency of fire prevention inspections to align mandates with budgeted resources, and perform a workload analysis to quantify the staff needed now and in the future to comply with inspection requirements.

We also recommend that Fire management support the inspection program by coordinating work plans, use risk-assessment tools to identify high-risk properties, issue formal guidance for managing the program, develop a communication plan, create a public education program, and creating a process for managing administrative citations.

BACKGROUND

Fire prevention inspections help reduce the risk of fire. They also ensure that if a fire does occur, buildings are safer for residents evacuating and for firefighters entering the building. The Fire Prevention Unit has eight staff members, only three of whom are Fire Prevention Inspectors. They have not had a staffing increase since the Hills Fire of 1991. Since 1995, Fire Prevention has had to rely on Suppression staff to perform the majority of the inspections in between responding to fire and medical emergencies, and complying with training and equipment maintenance requirements.

ENVIRONMENTAL SUSTAINABILITY

Our office manages and stores audit workpapers and other documents electronically to significantly reduce our use of paper and ink.

RATIONALE FOR RECOMMENDATION

The Berkeley Fire Department's fire prevention inspection program is critical to keeping Berkeley safe for those who live, work, and visit the City. When high risk properties go uninspected and violations remain unresolved by property owners, the City exposes the public to fire risks that could have devastating effects.

CONTACT PERSON

Jenny Wong, City Auditor, City Auditor's Office, 510-981-6750

Attachments:

- 1: Audit Report: Fire Prevention Inspections: Insufficient Resources Strain Code Compliance, issued May 9, 2019