

**ANALYZING AND EVALUATING A FIRE DEPARTMENT'S INSPECTION
PROGRAMS FOR EFFICIENCY AND EFFECTIVENESS**

STRATEGIC MANAGEMENT OF CHANGE

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ABSTRACT

The problem was that the City of Imperial Beach Fire Department had never analyzed and evaluated their various inspection programs for efficiency and effectiveness. During the past ten years, the Fire Department's inspection responsibilities had grown significantly while staffing for these various inspection programs had been severely reduced. Additionally, as inspection staffing was reduced, increased inspection responsibilities were given to the engine company officers and no training was given to these company officers or Fire Department personnel in regards to their higher level and increased areas of inspection responsibilities. For fire department personnel to effectively and efficiently provide the diverse services demanded in today's fire service, he or she must be proficient in many disciplines. Yet quite often fire department personnel receive little or no specific inspection training to assist them with this highly technical and important job responsibility.

The purpose of this applied research project was to analyze and evaluate the current Fire Department's various inspection programs for effectiveness and efficiency and make recommendations based on the conclusions of this report and seek approval for their implementation.

In conducting this research the author utilized descriptive, historical, and action research methodologies to answer these research questions:

1. What pertinent prior history has led to the current status of the Imperial Beach Fire Department inspection programs?
2. Are the Imperial Beach Fire Department's current inspection programs efficient and effective and are they meeting their intended purposes?

3. If changes in the Imperial Beach Fire Department inspection programs are recommended in this report, what are the constraints and support for changing the Imperial Beach Fire Department's current inspection methods and priorities?

The procedures used in this applied research project included review of applicable literature; two surveys were utilized to help determine relevant history in regards to the Imperial Beach Fire Department Inspection Programs and to research what other Southern California fire departments' engine companies inspections responsibilities were for comparison purposes. Results indicated the importance of effective and efficient inspection programs. Results also indicated that the Imperial Beach Fire Department's Inspection Programs were not as effective or efficient as they should be for several reasons.

Recommendations made were to seek more personnel for inspection duties, establish an inspection data records management system, and to provide inspection training specifically targeted at the types of inspections conducted by the City of Imperial Beach Fire Department.

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INTRODUCTION

The problem was that the City of Imperial Beach Fire Department had never analyzed and evaluated their various inspection programs for efficiency and effectiveness. The Fire Department's inspection programs have experienced significant and substantial change in the last ten years. Ten years ago, the Fire Department was responsible for conducting fire inspections on only business, assemblies, and five units or larger residential properties. Currently, the Fire Department conducts engine company fire inspection on all types of occupancies. In addition to conducting fire inspections on all occupancies, the Fire Department conducts engine company housing inspections and weed abatement inspections. The number of inspections the Fire Department is responsible for conducting has grown from several hundred to several thousand annually.

In an effort to justify its worth to its customers, fire departments have increasingly accepted more responsibilities for a diverse range of services, often without a corresponding increase in staffing levels to offset the increased workload.

In the future, the fire service can expect continued challenges. Economic pressures, pressures for more cost-effectiveness and productivity, and tight budget controls will undoubtedly remain. Calls for more service and the pressures from competing agencies will complicate the picture. Departments will undoubtedly continue to adjust their organizational structures and their staffing patterns to improve efficiency and effectiveness, and continue to push for the operational benefits of new and advancing technologies. (Coleman & Granito, 1998, preface)

These increased responsibilities and services being provided by the fire service, have increased training requirements for fire service personnel. In order to provide these higher level of services, fire service personnel have to be trained in these multi-faceted disciplines. Skill

levels, training requirements, and mandates have increased significantly for fire service personnel. It can be anticipated that increasingly in the future, more time will need to be allocated to meet training requirements and mandates that are driven in part by technology changes and higher customer service expectations and needs. The fire service has seen significant changes to its mission over the years. This trend will only continue in the foreseeable future. The days of fire departments being responsible for responding only to fire-related emergencies are gone.

The fire service has evolved from an organization whose single responsibility was fire suppression to an emergency services organization that provides fire suppression, fire prevention, fire code enforcement, fire investigation, fire inspection, emergency medical services (basic and advanced life support), hazardous materials mitigation, and specialized rescue operations (urban search and rescue, wilderness search and rescue, high-angle rescue, confined space rescue, and trench collapse rescue). With these increased responsibilities come some of the greatest response challenges in our history. (Bachtler & Brennan, 1995, p. 311)

It is incumbent upon us as fire service managers to proactively and continually analyze and evaluate our organization's service delivery systems. We have to assure that the services our respective fire departments provide are effective and efficient in meeting their intended purposes. Further, we have to determine if the services we are providing are desired and needed by our customers. Next we have to determine whether our department is capable of effectively providing the service(s) and meeting their intended objective(s) as the department currently exists or whether more resources, equipment, and/or training will be needed in order to provide the service(s).

“For centuries economists, philosophers, engineers, military generals, government

leaders, and managers have attempted to define, measure, analyze, and capture the essence of effectiveness” (Ivancevich & Matteson, 1999, p. 19). Don W. Oaks and Chester A. Newland recognized that evaluation of service delivery is essential to the operation of fire service agencies. They wrote that “evaluation could be defined as the regular collection of data and analysis of information about the efficiency, economy, and effectiveness of departmental service and other activities. The purposes of evaluation are to help managers (and elected officials) improve the implementation of programs, allocate scarce resources, and choose among programs and levels of various activities” (Coleman & Granito, 1998, p. 254-255).

The purpose of this applied research project was to analyze and evaluate the current Fire Department’s various inspection programs for effectiveness and efficiency and make recommendations based on the conclusions of this report and seek approval for their implementation. Cote (1997) wrote “that of the many occupancy classes that had tremendous risk of fire death when the NFPA was born, several have nearly eliminated life loss from fire and have achieved nearly all that can be achieved by fire protection after ignition occurs. Others have moved a long way in that direction but still have pockets where code compliance remains spotty. Still others have accomplished the development of adequate codes for life safety but have major gaps in enforcement and compliance that still leave thousands of people at risk” (p.12). It is important that we periodically evaluate our inspection programs to determine their effectiveness and efficiency in order to prevent these gaps in enforcement and compliance. Three research questions were developed in an effort to help guide the author in finding solutions to the purpose of this applied research project. Descriptive, historical, and action research will be used to answer these research questions:

1. What pertinent prior history has led to the current status of the Imperial Beach Fire Department inspection programs?

2. Are the Imperial Beach Fire Department's current inspection programs efficient and effective and are they meeting their intended purposes?
3. If changes in the Imperial Beach Fire Department inspection programs are recommended in this report, what are the constraints and support for changing the Imperial Beach Fire Department's current inspection methods and priorities?

BACKGROUND AND SIGNIFICANCE

The City of Imperial Beach Fire Department services a community of approximately 29,000 people. The City of Imperial Beach claims the distinction of being the "Most Southwesterly City" in the continental United States. The City is located in the Southwest corner of San Diego County, only five miles from the Mexican Border and eleven miles from downtown San Diego. Imperial Beach is bordered by the City of Coronado and the San Diego Bay to the North, the City of San Diego to the East, Mexico to the South, and the Pacific Ocean to the West. The City of Imperial Beach encompasses 4.4 square miles. The City is ethnically diverse with 58.6% white, 28.3% Hispanic, 7.5% Asian and Pacific Islander, 4.5% black, and 1.1% other.

The Imperial Beach Fire Department consists of one fire station, 12 line personnel, one support staff, and one Fire Chief. The Public Safety Director/Fire Chief is also responsible for managing the lifeguard, law enforcement, and the animal control departments. The Fire Department provides a multitude of services to the community. These services include fire suppression, fire investigation, emergency medical services (EMS), hazardous material response and mitigation, disaster preparedness and response, construction plan checks, fire and municipal code compliance, business and residential inspections, housing inspections, and weed abatement inspections. The department also offers a variety of public safety education programs such as

CPR and first aid classes for city employees, and fire safety education programs for children in cooperation with the local school district. Currently, the department is considering upgrading its EMS from a basic level (BLS) first responder service to an advanced level (ALS) first responder service. The department is also responsible for training all city employees in emergency preparedness techniques and large scale emergency/disaster response and mitigation operations. The department provides instructional classes to city employees on the Incident Command System (ICS) and the Standardized Emergency Management System (SEMS) and develops functional disaster drills to exercise these skills.

Fire prevention, including fire safety education and code enforcement activities, is recognized as a major responsibility of today's fire service. In order to understand the importance of fire prevention and the reasons for code enforcement inspection programs, it is helpful to briefly review history as it relates to fire prevention.

The dangers of fire to life and property are ever present, and from earliest times efforts have been made to prevent fire. In ancient Rome, firemen patrolled the streets to enforce fire prevention procedures and administered corporal punishment to offenders of fire codes. Records of fire prevention efforts in England date back to 872 and reveal some unusual practices: a bell was rung as a signal to extinguish all household fires at an early evening hour; women patrolled the streets at night to detect fires and to act as a fire alarm system; arsonists were punished by being burned alive.

Fire prevention efforts in our country began as early as 1631. In 1785 and 1807, ordinances enacted in Reading, Pennsylvania, imposed fines on homeowners for chimney fires and prohibited the smoking of cigars on the streets after sunset and the firing of firecrackers. Fire prevention was the first general topic discussed at the First Annual Conference of the National Association of Fire Engineers (predecessor to the

International Association of Fire Chiefs), which was held in Baltimore in 1873.

From those modest beginnings, fire prevention has come to be recognized as a science. But in practical application, major improvements have come about mostly as a result of tragic fires at the cost of many lives and extensive property damage. The list is long: the Iroquois Theater fire in Chicago, 1903, 603 killed; the Triangle Shirtwaist Factory, New York, 1911, 146 deaths; the Cocoanut Grove nightclub, Boston, 1942, 492 dead, scores injured; nursing homes, hospitals, schools conflagrations like the one in Baltimore in 1904, which destroyed 80 blocks in the downtown business center, and the one in 1991 in Oakland, California, in which over 3,400 dwellings were destroyed. (Robertson, 200, p. 17)

“Another fire prevention effort -public education- has its roots in the early part of the 20th Century. It also came about in response to a tragedy. In October of 1922, President Harding initiated the first Fire Prevention Week in remembrance of the Great Chicago Fire of October 1871” (Brachtler & Brennan, 1995, p. 967). As evidenced by these statements, almost all life safety codes have been developed in response to some sort of tragedy. This emphasizes the importance and need for an effective life safety inspection program. Quite often, either due to budget constraints or simply a lack of awareness of the importance of such inspection programs, these programs are not given the attention or resources they need to be effective. Although the value of an effective fire prevention program and the cost savings a comprehensive prevention and inspection program can bring to a community, has been documented over and over again and is more recognized by fire service and city leaders than in the past, often these preventative programs do not get the same attention or resources as emergency response programs.

The City of Imperial Beach Fire Department has been doing engine company fire inspections at least since the 1970's. However, the program was not coordinated and often

inspections were not accomplished on some of the identified occupancies for many years, if at all. The Imperial Beach Fire Department has never had a Fire Marshal or a person whose sole responsibility was coordinating and managing the fire inspection program. At the same approximate time, in the 1980's, the City of Imperial Beach Building Department consisted of a Senior Building Inspector and three assistants. Their responsibilities included building plan checks, building permit issuance, construction inspection, housing inspections, weed abatement and code enforcement issues. In the early 1990's, the City of Imperial Beach Building Department was relocated to the fire station. Prior to the move, Building Department personnel resources had been reduced to a Senior Building Inspector and two assistants. One assistant was responsible for code enforcement and the other was responsible for housing inspections. They were both responsible for weed abatement activities. The Senior Building Inspector was responsible for plan checks, building permit issuance, and construction inspection. At about this same time, the Senior Building Inspector started to be responsible for some Fire Marshal activities and tasks. In 1997, the Building Department assistants were terminated and only the Senior Building Department/Fire Marshal, whose title was changed to Deputy Building Official – Fire Marshal was retained. All housing inspections and weed abatement inspections were transferred over to the Fire Department. A Code Enforcement Officer was hired and placed in the Community Development Department.

The Fire Department has seen its inspection workload increase significantly in the past few years. In 1993, Imperial Beach Fire Department personnel conducted 380 inspections. In 1996, the Fire Department nearly doubled their inspections conducted in a year by inspecting 630 occupancies. In 2000, Imperial Beach Fire Department personnel conducted 1,910 occupancy inspections. Additionally, the Fire Department became responsible for weed abatement inspections in 1998. There were approximately 5,000 weed abatement inspections

conducted by the Fire Department in 2000. The number of housing and fire inspections will significantly increase in the near future. The City of Imperial Beach is making a strong push to increase Transient Occupancy Tax (T.O.T.) revenue and business license revenue collection. It is estimated that there may be as many 1000 rental and business properties located in the city that currently do not have a business license and are not identified on the inspection roles. The Fire Department has agreed this year to canvass the city and compare each and every occupancy against existing records to see if they are accurately recorded.

As stated previously, the fire service has seen its responsibilities grow and expand in the last several years. Kenneth J. McGee (1997) wrote in his applied research project that:

As the number of services provided by the fire department along with a corresponding increase in demand volume continued to escalate, the sustainability of the inspection program became increasingly difficult. The problem the fire department had was that its fire inspection program no longer had adequate resources available in the form of in-service tactical units to perform the inspection duties that were required. (Abstract)

The Imperial Beach Fire Department is no exception to this statement. In addition to the increased inspection activities mentioned, the Fire Department has seen other service delivery items expand or increase. Some examples of the higher service level being provided by the Imperial Beach Fire Department would include, the Fire Department never responded to hazardous material incidents or confined space emergencies twenty years ago, now these are standard responses. CPR training was never offered and taught to the general public, but now this is routine. Additionally, the Fire Department is in the process of providing a higher level of First Responder EMS by transitioning from a BLS to an ALS First Responder EMS system. Last year, the Fire Department experienced a 13 percent increase in emergency responses. Emergency responses went from 1,588 in 1999 to 1,812 in 2000.

Of course, like all fire departments, required and mandatory training requirements have increased significantly for the Imperial Beach Fire Department. There has been no increase in Fire Department personnel during the last twenty years and in fact the Fire Department has seen a reduction in personnel over the years. There was an Assistant Fire Chief approximately twenty years ago and three additional firefighters, one per shift, however these positions have been cut over the years due to budget considerations.

There is very little, if any, coordination between the Deputy Building Official – Fire Marshal and the Fire Department. The Deputy Building Official – Fire Marshal has no knowledge of the Fire Department’s inspection programs’ status or the programs’ effectiveness. Conversely, Fire Department personnel have little or no understanding or knowledge of the Deputy Building Official - Fire Marshal’s responsibilities and actions in regards to fire prevention and inspection activities such as plan checks, fire related construction inspections, or fire inspections.

Although the Fire Department inspection programs’ responsibilities and size have grown significantly, there has been no inspection training offered or provided to Fire Department personnel in the areas of inspection responsibilities.

A comprehensive fire prevention program must include provisions for ongoing training and development of personnel; both prevention and suppression personnel need training in fire prevention. The main resource is people. To ensure that they have the mental tools and the professional qualifications necessary to accomplish their tasks, the training program must address each special skill need. (Coleman & Granito, 1988, p. 386)

This applied research project is relevant to Strategic Management Of Change (SMOC) course in the areas of quality and change management. “Insuring quality is not only a goal of change management, it is also an inherent factor” (SMOC Student Manual, 1996, p. 1-7).

By analyzing and evaluating the existing Imperial Beach Fire Department Inspection Programs it will be possible to determine if the existing inspection programs are effective and efficient in meeting their intended purpose and objectives. Analyzing and evaluating the inspection programs will assist in determining if the inspection services the Fire Department provides are desired and needed by our customers and if the Fire Department is capable of effectively providing the service(s) and whether the inspection programs are meeting their intended objective(s) as the department currently exists or will more resources, equipment, and/or training be needed in order to provide the service(s). Finally, this effort Deputy Building Official – Fire Marshal can determine if the Fire Department is delivering quality service to the customers, both internal (fire department personnel) and external (the general public).

LITERATURE REVIEW

The IFSTA text *Fire Inspection and Code Enforcement* (1987) emphasized the importance of fire prevention inspections when it identified that “fire prevention inspections are the single most important non-firefighting activity performed by the fire service”(p.5). Even 14 years later, in today’s fire service with the ever increasing and diverse nature of emergency service delivery responsibilities it still can be strongly argued that fire prevention inspection activities and public safety education are the most important non-emergency activities performed by fire department personnel.

As the focal point of a fire department’s efforts to minimize fire losses in a community, the fire prevention bureau plays a key role in improving the safety and quality of life of the citizens it serves. In most department mission statements, fire prevention usually is listed as the fire department’s primary goal. (Bachtler & Brennan, 1995, p. 963)

The Imperial Beach Fire Department’s Mission Statement reads as follows: “The mission of the Fire Department is to prevent the loss of life and property, personal injury or

environmental damage from fire, rescue, medical and hazardous materials related emergencies through emergency response, public education, and the enforcement of laws” (Imperial Beach Fire Department Rules & Regulations Manual, 1997, p. 1).

The purpose of this literature review was to gather and review pertinent information and inspection standards and other related subjects that could be used to support the need for effective fire department inspection programs. Additionally, the literature review was conducted to gather related and relevant material that could be utilized to assess and compare against the current Imperial Beach Fire Department Inspection Programs in an effort to determine their effectiveness and efficiency.

“To bring about an effective movement toward these broad goals, the fire service must continue to improve its own effectiveness. The internal challenges lie in a number of areas: training, fire attack capabilities, productivity in such areas as prevention...In the future, the fire service can expect continued challenges. Economic pressures, pressures for more cost-effectiveness and productivity, and tight budget controls will undoubtedly remain. (Coleman & Granito, 1988, preface)

The lack of adequate planning and control with respect to new or increased service demands can be seen in the manner in which emergency medical services (EMS) and hazardous materials programs have evolved. These services are usually provided by the fire departments, but not without significant organizational and economic impacts. For example, EMS demands can overtax volunteers owing to the volume of calls. Before such programs are initiated or expanded, a thorough evaluation needs to be performed to define workload and resource requirements and also to consider other methods that may be more efficient and /or effective. (Coleman & Granito, 1988, p. 81)

Fire prevention is not a new concept. It has been long recognized that effective fire

prevention activities can have a much more significant impact on reducing fire loss in communities than response to fires can after they have started. Ben Franklin, the father of the organized volunteer fire service, also was an early supporter of fire prevention. His words, “an ounce of prevention is worth a pound of cure,” are famous. Benjamin Franklin wrote these famous words on June 21, 1762 in an article which he stated his concerns about storage of combustibles in dwelling places. He stated, “Some substances take fire, that is, are kindled by the application of fire much sooner than others” (National Fire Academy Open Learning Fire Service Program [NFAOLS] 1994, p. 1-5). Fire prevention efforts can be traced back as far back as the Roman era.

As early as 300 B.C., the Romans established a “fire department,” composed primarily of slaves. The response of those individuals is reported to have been quite slow. Little else is known about their procedures; however, the program apparently was so unsuccessful that it was necessary to convert the department into a paid force in 6 A.D.

This apparently proved to be successful, and by 26 A.D. the fulltime fire force in Rome was approximately 7,000. These individuals were charged primarily with a responsibility for maintaining fire prevention.

The fire brigades of Rome patrolled the streets in their efforts to bring about proper fire prevention procedures. ...Records indicate that they were empowered to administer corporal punishment because most fires were thought to be the fault of the inhabitants. (Robertson, 2000, p. 1)

Fire Prevention activities actually predate the creation of organized fire departments in the U.S. Fire was a constant threat to early European settlements in America. Major fires struck in Jamestown, Virginia in 1608 and Plymouth, Massachusetts in 1623.

...Even when rudimentary fire apparatus was introduced in major U.S. cities

during the first half of the 18th century, fires still were a major threat. Major conflagrations, some larger than even today's biggest fires, continued to plague our cities into the 20th century. (Bachtler & Brennan, 1995, 964-965)

These types of large conflagrations gave momentum for the fire service to start taking fire prevention and fire prevention public education more seriously. "It has been said that "in the realm of fire 'the law' is a thing mothered by necessity and sired by great tragedy" (Robertson, 2000, p. 7). Although, even today the awareness and practice of fire prevention activities in the United States by the general public is not taken as seriously as it is in some other industrial nations. The United States still ranks very high in fire loss and deaths as compared to many other industrial nations. Some 1999 statistics taken from the *National Fire Protection Agency's* (NFPA) *Web Page* indicate that the fire problem in the United States is still very prominent.

- In 1999, public fire departments attended 1,823,000 fires in the United States, of which 523,000 occurred in structures, 368,500 occurred in vehicles, and 931,500 occurred in outside properties. Every 17 seconds, a fire department responds to a fire somewhere in the United States.
- In 1999, there were 3,570 civilian (non-firefighters) fire deaths, a moderate decrease of 11.5% from the previous year, these included 2,895 deaths from fires in the home, a moderate decrease of 10.0%. About 81% of all U.S. fire deaths occurred in home fires. Nationwide, there was a civilian fire death every 147 minutes.
- The civilian fire death rate in the United States in 1999 was 13.1 deaths per million people.

- In 1999, there were an estimated 21,875 civilian fire injuries, of which 16,050 occurred in homes. Nationwide, there was a civilian fire injury every 24 minutes. (NFPA, 2001, Web Page)

In 1873, a group of fire prevention experts gathered and made several fire prevention and fire safety recommendations. This group, the National Association of Fire Engineers (later to become the International Association of Fire Chiefs) developed a list of eight fire safety concerns and recommendations. They were as follows:

1. The limitation or disuse of combustible materials in the structures of buildings, and restriction of the excessive height in buildings, and restriction of the dangers of elevators, passages, hatchways, and mansards.
2. The isolation of each apartment in a building from other apartments and of every building from those adjacent by high party walls.
3. The safe construction of heating apparatus.
4. The presence and care of trustworthy watchman in warehouses, factories, and theaters, especially during the night.
5. The regulation of the storage of inflammable materials and use of same for heating or illumination. Also the exclusion of rubbish liable to spontaneous ignition.
6. The most available method for the repression of incendiarism.
7. A system of minute and impartial inspection after the occurrence of every fire, and rigid inquiry into the causes, with reference to future avoidance.

8. Fire escapes actually serviceable for invalids, women, and children.

It is interesting that many of the recommendations outlined above were the basis for a number of our current fire and building code requirements. The early recognition of the importance of fire investigations is an insight as well. Even the reference to “fire escapes actually serviceable for invalids” only has recently come to the fore in the form of the Americans with Disabilities Act. (Bachtler & Brennan, 1995, p. 966)

The philosophy of fire prevention includes many variables. The term fire prevention varies in interpretation within the fire protection field. There are many definitions of the term “fire prevention” that can be found in professional journals. A few examples of definitions of the term are as follows:

“Prevention is an assertive process of creating conditions and/or personal attributes that promote the well-being of people” (Robertson, 2000, p. 16). In the text, *The Fire Chief's Handbook*, there is a somewhat lengthier definition of “fire prevention”.

Fire Prevention involves all manner of effort to prevent the ignition and initial spread of an unwanted fire, including the escape of a useful or controlled fire into an uncontrolled and hazardous state which then requires the abatement of action. Law enforcement, including investigation of fire causes and the apprehension and prosecution of violators, is considered to be fire prevention activity. (Bachtler & Brennan, 1995, Glossary)

The major goals of fire inspections include the following:

- To raise the public’s awareness of fire safety considerations in their immediate surroundings.
- To identify fire hazards that must be eliminated for a safer environment.
- To record inspection information for inclusion in the public record.

- To verify the proper functioning/maintenance of installed fire protection systems and other building fire protection systems and other building fire protection equipment/features. (Murphy, 1996, p. 91)

Using fire suppression line personnel to perform fire prevention activities is not a new idea. In a 1913 report of the First American National Fire Prevention Convention, the authors Powell Evans and J. S. Mallory write about fire prevention practices used in a cross section of cities across the United States.

Fire departments, as a rule, all over the country, up to this time have been selected and managed too much on old “rule of thumb” lines, and not sufficiently instructed in and brought up to modern methods. Perhaps when the public pays this important body of their employees as well as it pays the police, and demands better service, it will get it. After emphasizing the need for fire fighting schools, we pass on to our particular subject-the use of active firemen for fire prevention property under their control, and enables them to perform their hard duty in emergencies with greater speed and safety than otherwise. The system has been employed in a few cities as long as fifteen years and is rapidly spreading. It has worked to advantage wherever used. (NFAOLS 1994, p. 1-10).

The report then went on and highlighted examples in New York City, Boston, Chicago, and Cincinnati where fire suppression personnel were being used for fire prevention inspection activities in addition to their normal suppression responsibilities.

As previously stated, the Imperial Beach Fire Department fire suppression personnel are also responsible for conducting housing inspections in the City of Imperial Beach. These inspections are conducted under the authority of the *Uniform Housing Code* (UHC). “The purpose of the code is to provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the use and occupancy, location, and

maintenance of all residential buildings and structures within the jurisdiction” (UHC, 1997, p. 1 Section 102)

Housing inspections are usually conducted by building department officials. However, due to personnel and budget limitations and other considerations in the City of Imperial Beach, the responsibility for housing inspection has been given to the Fire Department. In chapter 2, of the *UHC* it states that “the building official is hereby authorized and directed to enforce all of the provisions of this code. For such purposes, the building official shall have the powers of a law enforcement officer” (UHC, 1997, p. 3 Section 201.1). Nowhere in the code does it specifically empower the fire department or fire department personnel to conduct housing inspections. However, the code does not clearly define what the term “building official” constitutes. Is this position only a member of the building department or could this position with housing inspection responsibility be a member of other departments?

A Florida law requires fire service plan review and certification of occupancy in concert with the building department. They are equal partners in the process. However, the majority of structures constructed (one-and two-family dwellings) are exempt from mandatory code enforcement inspections by fire service personnel. These dwellings, in which loss of life may be experienced, are solely the province of the building or housing enforcement departments except for voluntary home inspections. (NFAOLS 1994, p. 3-23).

Housing inspections are usually the province of building or housing enforcement and not a responsibility of fire departments in a vast majority of jurisdictions. The *1997 Uniform Fire Code (UFC)*, the fire code adopted and enforced in the City of Imperial Beach, specifically exempts one-and-two-family dwellings from its regulations and requirements. The *UHC*, the housing code adopted and enforced in the City of Imperial Beach, does not exempt one-and-two-

family dwellings. Unlike most jurisdictions' fire departments, the Imperial Beach Fire Department does inspect one-and two-family dwellings under the authority of the *UHC*.

These inspections do help with the process of educating the residents and owners of these structures in fire safety practices. Also it helps identify unsafe practices that might lead to an increase of unwanted fires in these structures. However, the Fire Department personnel are inspecting these structures for other things in addition to fire safety related violations. Such things that might provide or lead to inadequate or substandard living conditions are also inspected and cited.

There are different opinions on whether fire service personnel should be conducting housing inspections. In the landmark report, *America Burning*, published by the National Commission on Fire Prevention and Control, it was recommended "that annual home inspections should be undertaken by every fire department in the nation. It further recommended that federal financial assistance to fire departments should be provided if they implemented a home inspection program" (Wood, 1999) p. 58). Despite these recommendations, in his applied research project (APR), P. Gallahar (1994) surveyed 26 fire departments and found that seventy-five percent of the respondents did not conduct home inspections (p. 36). Of the ones that did, a majority were voluntary home fire inspection programs.

Kenneth Wood, in his APR in 1999, commented on other peoples' research when he wrote that despite the fact that 80 % of lives lost to fire occur in one-and-two-family dwellings and apartments, home inspections traditionally have not been mandatory because of what he deemed 'unfounded concerns' associated with the rights of citizens to ensure the sanctity of their homes. For many years, fire departments have inspected homes on a voluntary, by-invitation, or planned basis and many of these programs have been successful in reducing fire-loss experiences. When such programs cannot be

comprehensive, they should target high-fire rated neighborhoods. (p. 60)

Fire death statistics show the United States with the highest death rate within industrial nations. The United States averages 18.5 fire deaths per one million population. This figure is based on estimates of the National Fire Protection Association. Roughly two-thirds of those deaths occurred in a victim's own home" (Robertson, 2000, p. 227). These types of statistics give plausible reason, at a minimum, to inspect all rental properties for life safety code violations, irrespective of the number of units in the complex.

Conversely, in the publication *Introduction to Fire Prevention*, the writer felt that it was not a good idea to have fire department personnel conducting housing inspections.

There should be coordination with the housing department. Housing codes cover many features of fire prevention, so coordination is mutually beneficial. The desirability of joint inspection may be reviewed on a local basis; however, in single-family occupancies, it would not be legal to conduct joint inspections without permission. The fire department may inspect such facilities on a non-obligatory, voluntary basis, although housing inspections are obligatory. It would not be in the best interest of either agency to have fire personnel enter on the strength of the housing inspector's right of entry. Both programs might suffer under such an arrangement. (Robertson, 2000, p. 51)

There is legal precedence and case law involving housing inspections. In his APR Kenneth Woods (1999) cited the Supreme Court case *Camara vs. Municipal Court of the City of San Francisco*. He cited that in the text *Introduction to Fire Protection Law*, it reported that the case was reviewed and that the case hinged on the right of private citizens to refuse to permit entry of governmental inspectors and to require such inspectors to obtain a search warrant, thus subjecting the purposes and inspectional procedures of the governmental agency to judicial review (p. 60).

Rosenbauer noted that the case addresses an individual's constitutional right to privacy vs. the protection of society as a whole from fire. Arguments were presented by authorities that the general enforcement of safety codes satisfies "probable cause" to inspect properties as required by the Fourth Amendment to the Constitution. However, the Supreme Court found that the Fourth Amendment bars prosecution of a person who has refused to permit a warrant-less code-enforcement inspection of his personal residence.

... He, Rosenbauer, suggested based on advice of legal experts and the NFPA that fire prevention programs be designed so, (a) inspections are conducted on the basis of a geographical approach to proceed through a district on a building-by-building basis to demonstrate that particular occupancies were not singled-out for enforcement; (b) a search warrant is obtained in the rare cases when owners object to an occupancy inspection; (c) inspection staff are adequately identified by name, badge, and uniform; (d) inspection staff explain the purpose of the inspection; and (e) inspection staff request permission of the owner or person in charge to carry out the inspection. Fire prevention inspection organizations should develop formal, written inspection procedures spelling out how, when, where, and what inspections are to be carried out, and maintain an extensive record system to be able to demonstrate that particular occupancies or owners were not singled-out for enforcement. (Wood, 1999, p. 60-61)

As stated previously the City of Imperial Beach Fire Department conducts housing inspections. These inspections are not just focused on fire safety violations, but on a much broader scope. As such, these inspections are based on other authorities such as the UHC and not just exclusively on the authority of the fire code.

Housing codes commonly reflect a need to ensure that living conditions meet certain

standards. Their range is very broad in scope, covering quality of life, health, maintenance, and safety. The personnel who enforce this code require a broader, more generalists approach than those responsible for the building or fire codes. They become arbitrators in landlord, tenant, and neighbor disputes. As representatives of the government, they frequently bear the citizen's various frustrations and thus should have the personality traits, education, and experience usually expected of a social worker or public relations agent. (Coleman & Granito, 1988, p. 390)

As stated housing inspections are complex and specific training and education is needed to effectively administer and carry out the responsibilities of housing inspections. Fire inspections are also complex and technical and specific training and education is needed to effectively administer and carry out the responsibilities of fire inspections, as well.

Training programs in the fire service have likewise had limited emphasis on fire prevention. They have for the most part concentrated on fire suppression subjects. The average individual joining either a career, volunteer, or combination-type fire department has received little information relating to fire prevention in the basic training program. Members of many explorer and other scout groups receive more training in fire prevention than does the person joining the average fire department. (Robertson, 2000, p. 55)

Not all fire service personnel in even the smallest fire department will be qualified, or even interested in acquiring fire prevention skills. Some personnel do not have the technical qualifications or psychological temperaments to practice the salesmanship required to enforce the fire code successfully. However, if all members of a fire department were provided the necessary basic training in fire prevention procedures, codes, and practices, they would probably be better firefighters, and more able to answer

the fire prevention questions of the general public intelligently. (NFAOLS 1994, p. 5-5)

Apparently, there has been no inspection training offered to Imperial Beach Fire Department personnel. Unfortunately, this is not unusual in the fire service. There are many reasons given for why there is a lack of interest or focus on training for fire service personnel in fire prevention and inspection activities. Some fire suppression personnel believe that fire prevention is not as glamorous or as exciting as actually responding to and fighting a fire. When fighting a fire, it is readily and almost immediately apparent what effects your efforts are having on the fire. Conversely, fire prevention efforts on reducing fires may not produce immediate effects on a fire problem and one's efforts and results in regards to these activities may not be immediately apparent. This time lag from effort to results may also be a significant reason why fire prevention does not get the budget attention from jurisdictions that fire suppression efforts do, even though fire prevention, in the long run, is much more cost effective.

Additionally, the public does not deem fire prevention as important as other forms of personal safety concerns. The public is much more concerned, and willing to allocate more money towards law enforcements issues as opposed to fire prevention issues. The public feels much more vulnerable and threatened by the possibility of a person who wants to harm them in some way than by being harmed by the affects of fire.

The fruits of labor are also much more readily recognizable in fire suppression efforts than in fire prevention work. The individual engaged in fire suppression activities is rewarded with direct evidence of something accomplished. The control and extinguishments of a major fire are highly visible, whereas the rewards of fire prevention work are usually intangible and not so easily measured.

An individual assigned to fire suppression and emergency medical duties seldom comes in contact with the public in adverse situations. The fire preventionist is often in a

confrontational relationship with those dealt with, especially in code enforcement.

Citizens do not usually care for the advice to extinguish cigarettes, provide automatic sprinkler systems, remove obstructions from exits, and complete other fire safety requirements. They are, in fact, often alienated by such efforts. This is probably another reason for the reluctance by some fire service personnel to accept fire prevention as a major fire department activity. (Robertson, 2000, p. 56)

“Because fire prevention personnel need increased and specialized formal programs along with on-the-job training, a well designed training program is required” (NFAOLS 1994, p. 5-7). It is only logical that because of the extensive and broad knowledge base that is needed in regards to applicable codes, regulations, and technical specifications that are required for inspection responsibilities, that an ongoing and thorough training and education plan is needed in order to deliver effective life-safety inspection programs.

Fire prevention training for all fire service personnel can have beneficial results in many ways. It promotes professionalization of the fire service because more knowledge is required than for basic suppression duties, and it opens up new fields of specialization for growth on the job for all fire service personnel. It also helps to generate respect for the purposes of fire prevention. (Robertson, 2000, p. 68)

“If fire departments are to be more effective, they must learn better. If they are to learn better, they must develop better ways of collecting, processing, and interpreting information” (McGee, 1997, p. 8). It is imperative that effective inspection programs have a thorough records collection management system. If accurate and complete records are not kept of past inspections and past violations, it is very difficult to research whether an inspection program is effective or not. “In order to effectively manage the inspection program, there must be reliable data available through an effective record keeping system” (Camp, 1999, p. 27).

Having good information that is readily available is essential to managing a fire department of any size. Good information is needed not only to help fire service managers make decisions, but also to back up those decisions with hard data that can stand the scrutiny of city managers, budget analysts, the press, and others. A fire service manager's career and the department's future depend on the ability to make and defend good decisions. Shooting from the hip no longer is enough in the competition for scarce resources. When other agencies and even public interest groups use management science to make the case for their priorities, the fire service manager must be prepared to do so, too. (Coleman & Granito, 1988, p.129)

Without complete and accurate records it is difficult to identify areas that are not effective and to strategize and plan for changes to improve and strengthen the program. Programs often evolve with little or no planning or management and can often become ineffective. Quite often, programs are developed and implemented and the reasons for the program or the changes that are made are long forgotten as the program evolves. If there is not an effective ongoing evaluation process that identifies areas that need to be improved or are not effective, it is not possible to develop plans to address them.

As stated previously, the Imperial Beach Fire Department has never analyzed and evaluated their inspection programs in the past. "The function of planning is often considered difficult and unrewarding. Usually, this is because few plans materialize exactly as was anticipated and many adjustments have to be made as time progresses. Some managers consider planning a waste of time"(Toth, 1999, p. 18). Of course to plan you have to have good organization and record keeping. Well organized and well maintained inspection files and building records are essential foundations for enforcement actions. "Complete and accurate records also are needed to measure fire department effectiveness in accomplishing fire

prevention goals” (National Fire Protection Agency [NFPA], 1991, p. 9-75). The organization of the goals and objectives and the organization development process help keep the project focused and helps assure the continuing effectiveness and success of the program. “Organizing and planning are closely related. Of all managerial activities, organizing and selection are the most difficult. It’s an inescapable fact that, without good organization, few plans will ever be followed” (Toth, 1999, p. 19).

If good data is kept and good plans for changes in the program are made as a result of the areas identified by the data that need to be addressed, it is then easier to justify to the customers, both internal and external, the reasons for the changes. “Prior to implementing an inspection program, priorities and guidelines must be developed. When implementing new programs or creating changes to existing inspection programs, it is extremely important to inform those who will be affected by the change before implementation takes place” (NFAOLS 1994, p. 8-3).

Quite often, programs are developed or changes are made and implemented and the reasons for the program or the change are never explained or understood by the very people who are affected by them. Unless there is understanding by the stakeholders, the people affected by the change, and at least a partial acceptance to the proposed changes, resistance to the change is the usual reaction no matter how beneficial it may be to the organization.

Change in its broadest sense, is a planned or unplanned response to pressures and forces. Hence there is nothing new about change or the need for it. ...Ultimately, the pressures that provoke change can be considered obstacles or challenges, threats, or opportunities. They can elicit despair or mobilize energy. The reaction depends on how an organization interprets the forces surrounding it, and what it does with them. (Jick, 1993, p.1)

How do you know if a program is effective and efficient? “As the inspection program has evolved, there have been no formal procedures or guidelines established for the success of the

program, nor has there been any analysis of the program to determine its effectiveness or future direction” (Camp, 1999, p. 8).

For simplicity, we will use four criteria of effectiveness as representatives of all such criteria. They are quality, productivity, efficiency, and satisfaction.

...Productivity reflects the relationship between inputs (e.g., hours of work, effort, use of equipment) and output (e.g., items produced, customer complaints handled, service delivered). ...Efficiency is defined as the ratio of outputs to inputs. Measures of efficiency inevitably must be in ratio terms; the ratios of benefits to cost or to time are the general forms of these measures. ...Satisfaction includes employee attitudes, perceptions, acceptance, etc.

Each of the criteria of effectiveness discussed are significant. However, the one element that executives now recognize as being perhaps the most crucial is quality.

...Quality is defined as meeting customers’ needs and expectations. (Ivancevich & Matteson, 1999, pp. 26-28)

In order to target a fire prevention plan in your community, the first step is to identify the problem. We need to establish a clear picture of the local fire problem. This can be done by determining where the most fires occur, how they are started, where the most deaths occur and which fires are the most costly. We may then determine what can be done to help reduce the size of the problem by using prevention techniques. (NFAOLS 1994, p. 4-5)

You have to have a system of inspection frequency that is predictable and appropriate.

Codes are just words. Code enforcement is action. ...One of the most fundamental elements of a good enforcement program is a properly scheduled inspection program.

This is needed to assure that the most of the more complex occupancies are in

compliance, most of the time. ...Left to natural conditions all systems degrade into chaos over time. Maintenance of fire prevention through periodic inspections is the only way to overcome degradation.

...You have to ask yourself the following questions: What occupancies absolutely have to be inspected on a specific cycle? What occupancies can be reviewed periodically? What occupancies may be given the empowerment to inspect themselves? And lastly, are there certain occupancies that you are never going to inspect?

...When it is all over you might say to yourself if I can inspect everything I have no problem. Or you might say, I can't do everything in one inspection cycle. You might need to stage the workload over a series of years. ...Make inspection frequency a conscious decision instead of a gamble. (Coleman, 1999, pp. 37-38)

“Those facilities in which violations are usually found may be scheduled for more frequent visits than those where fire safety problems are seldom found” (Robertson, 2000, p.71).

As stated previously, customer expectations, resource demands, time limitations, mandated requirements, and budget constraints are having a profound effect on service delivery effectiveness and quality in the fire service. Fire service managers must become more creative in trying to meet these increased service demands. In his article, L. D. Donner (1997) suggests that inspection quotas that are unrealistic will have an adverse effect on engine company inspections. “Company officers assigned too many inspections will 1) run out of time; 2) intentionally blow off complex inspections; or 3) do quick, and sometimes sloppy, inspections in an effort to meet a quota” (p. 100). When faced with these types of dilemmas fire service managers must be innovative and research alternatives and develop strategies that will assure the effectiveness of a program within the constraints of available resources. This can be a challenging task; one must look and evaluate the whole program and not fall into the trap of focusing on a single problem

and only developing a solution to that specific problem when there may be a greater cause affecting several aspects of the program. Quite, often a manager must develop several alternatives and solutions.

The operations division had evolved from 1972 to a point where a much wider array of services are being provided with a significantly larger volume of emergency service work load when compared to the work activities and volume of 1972. The changing service demand has placed enormous pressure on the Operations Division to conduct a relatively intensive inspection service with a continuously growing workload.

.... The self-inspection program is one example of an innovative practice that would constitute a significant departure from the traditional fire department approach to fire prevention. (McGee, 1997, p. 19)

“...However, those few fire departments that have inserted this program [business self-inspection] into their prevention operations have found that the program saves time and money in terms of man power involved. This transfers into more time allowed for concentration on higher hazard occupancies” (Shelton, 1993, p. 3).

These articles and reports support the premise that there is a need to evaluate existing inspection programs for efficiency and effectiveness on an on-going basis. Additionally, it is important to use accurate data to justify and plan for any changes that may be developed to improve a program. The fire service mission has expanded significantly over the past few years and the availability of sufficient resources to effectively and efficiently deliver these diverse services within the constraints of available budget resources is challenging many fire service managers and leaders today. The ability to anticipate and develop plans to effectively meet these challenges [opportunities], proactively, will be an ever increasingly valuable skill fire service managers and leaders will need to prosper in this competitive environment.

A phone questionnaire survey was developed and administered to fire service personnel of other fire departments responsible for inspection activities in their respective departments located in Imperial Valley, Los Angeles, Riverside, Orange, San Bernardino, and San Diego Counties. The survey asked several questions pertaining to their department's inspection program(s). The survey was developed as a tool to compare various aspects of the Imperial Beach Fire Department Inspection Programs against other Southern California fire departments' inspection programs. The survey instrument and the results are contained in Appendix B-1. The results were intended to help determine if the Imperial Beach Fire Department was being effective and efficient in delivering the various inspection programs the department is responsible for.

The author developed another survey instrument that was administered to Imperial Beach Fire Department personnel responsible for managing the various inspection programs' activities. The survey instrument asked the respondents to briefly describe their knowledge of the various inspection programs and goals of the inspection programs they were responsible for managing. The results were intended to help the author understand the respondents' knowledge of the inspection programs and how they perceived the various inspection programs. Additionally, because these are the personnel that were responsible for administering and delivering the inspection programs, the author wanted input from the users of the programs and any suggestions they may have had to improve the inspection programs, if any.

Additionally, the Deputy Building Official – Fire Marshal was interviewed by the author and asked a series of questions in an effort to help determine the historical events that led up to the current state of the Fire Department's inspection programs and to determine to what extent did the Deputy Building Official – Fire Marshal interact and coordinate with the Imperial Beach Fire Department Inspection Programs. Also, Imperial Beach Fire Department inspection records

were reviewed and compiled to assist with the evaluation process.

In summary, the reviewed literature has influenced this applied research project by demonstrating an established need for a thorough and on-going evaluation process of the Imperial Beach Fire Department Inspection Programs in an effort to determine the effectiveness and efficiency of the various inspection programs and to make any improvements needed to assure that the various inspection programs are meeting their intended goals. The information obtained from the literature will be used to help develop and make recommendations to reorganize the Imperial Beach Fire Department's Inspection Programs in an effort to assure the inspection programs' effectiveness and efficiency.

PROCEDURES

The purpose of this applied research project was to analyze and evaluate the current Fire Department's various inspection programs for effectiveness and efficiency and make recommendations based on the conclusions of this report and seek approval for their implementation. Descriptive, historical, and action research methodologies were utilized to help guide the applied research project to find answers to the research questions.

Research and data collection began with a literature review at the National Fire Academy's Learning Resource Center in August 2000. Three subsequent literature reviews were conducted of material at the National Fire Academy Learning Resource Center in November, December 2000, and January 2001, via the interlibrary loan process. Technical reports, articles in fire service trade magazines, previous Executive Fire Officer applied research projects, fire service books, and other types of professional leadership and management literature were reviewed for information pertaining to this applied research project. A literature review was also conducted at the City of Coronado Library, University of Redlands Library, and several San Diego City Libraries in December 2000 and January 2001. City of Imperial Beach Department's

policy and procedure manuals and department files were also reviewed for relevant and historical literature and records pertaining to the department's inspection programs. Additionally, historical and relevant documents pertaining to the Imperial Beach Fire Department Inspection Programs at the City of Imperial Beach City Hall were reviewed. Also, the author's personal collection of leadership and program management books were reviewed for pertinent information that was applicable to this applied research project.

The criteria used to help focus on and identify information that could be used in the pursuit of the purpose of this applied research project during the literature review was the information had to be relevant to the subject and the purpose of this applied research project. Second, the information should be as current as possible. Third, if the research identified standards or performance criteria relevant to this applied research project, these standards or criteria had to be professionally recognized.

By use of action research, two surveys and one interview were conducted. A telephone questionnaire survey was developed and administered to fire service personnel of other fire departments responsible for inspection activities in their respective departments located in Imperial Valley, Los Angeles, Riverside, Orange, San Bernardino, and San Diego Counties. The survey asked the respondents to answer twelve questions pertaining to their department's inspection program(s). The survey was developed as a tool to compare various aspects of the Imperial Beach Fire Department Inspection Programs against other fire departments' located in Southern California inspection programs. The survey instrument and the results are contained in Appendix B-1.

Ninety-seven fire departments were contacted in the phone survey. Fifty-five fire departments or 56.7% of the departments contacted responded to and provided the information requested in the survey. The list of departments contacted for the survey is contained in Annex

B-1. The list was developed from the *California State Fire Association Fire Department Directory Book*. All career and some combination fire departments identified in the directory, public or private, located in the counties previously identified were included in the distribution of the survey. One hundred and forty-seven volunteer and combination fire departments located in these areas were not surveyed. It was felt by the author that fire departments which consisted of all paid or a majority of paid personnel would be more likely to have inspection programs and responsibilities closer in similarity to the Imperial Beach Fire Department's inspection programs and responsibilities. It was the belief of the author that a comparison with these types of fire departments would result in more relevant and useful data for comparison purposes.

The results were tabulated and the responses were compiled for comparison purposes. It was hoped that this data would help identify areas in the Imperial Beach Fire Department Inspection Programs that could be improved. Further, it was hoped by the author that the data would assist with identifying potential causes of any problems identified with the inspection programs so solutions could be developed. The fire departments contacted and the complete survey instrument and results are contained in Appendices A-1 and B-1.

The second survey, an internal survey questionnaire, was developed for and administered to the four Imperial Beach Fire Department employees who are responsible for managing the various Fire Department inspection programs' activities. The survey instrument requested that the respondents briefly describe their knowledge of the various inspection programs and goals of the inspection programs that they are responsible for managing. It asked them to identify the programs and to describe the goals of the inspection programs. The instrument requested that the respondents identify under what authority the inspection could be conducted and to comment on whether they felt the inspection programs were effective and efficient and if they were meeting the intended goals of the various programs as they had described them. If they did not feel the

programs were effective and/or they did not feel they were meeting the intended goals, the instrument asked the respondents to describe the areas that they felt were deficient and why they felt they were deficient. The respondents were asked if they had received training for the types of inspections they were required to conduct and the instrument asked them if they had any recommendations to make that in their opinion would strengthen the inspection programs and make them more effective and/or efficient.

The results were intended to help the author understand the respondents' knowledge of the inspection programs and how they perceived the various inspection programs. Additionally, because these are the personnel that are responsible for administering and delivering the inspection programs, the author wanted input from the users of the programs and any suggestions they may have had to improve the inspection programs, if any. The complete answers by the respondents were used and not changed or tabulated in any way. Because the author wanted to get an understanding of the respondents' knowledge of the various inspections programs and wanted to get the respondents feelings in regards to the inspection programs these questions and answers were somewhat subjective and not conducive to statistical tabulation and interpretation. The instrument and the respondents' answers to the questions are contained in Appendices C-1 to C-4.

Lastly, the Deputy Building Official – Fire Marshal was interviewed on January 11, 2001 by the author and asked five questions in an effort to help determine the historical events that led up to the current state of the Fire Department's inspection programs and to determine what extent the Deputy Building Official – Fire Marshal interacted and coordinated with the Imperial Beach Fire Department Inspection Programs. It was also anticipated that these answers might help identify problems within the inspection programs and the causes, and would be useful when developing any recommendations for improvements in the various inspection programs. The

author summarized the respondent's answers to these questions and the results can be found in Appendix D-1.

Assumptions and Limitations

An assumption was made that respondents to the surveys understood each question and had the knowledge and ability to answer them accurately. Another assumption was made that respondents from other fire departments were knowledgeable and had an understanding of their department's respective inspection programs and their answers to the questions were correct and that they accurately reflect their department's inspection programs.

Several limitations were experienced in researching and developing this applied research project and should be noted. Of the fire department personnel contacted in the telephone survey, 55 fire departments out of the 97 contacted, or 56.7 percent answered and completed the survey. This limited the representation of the survey. The size of the telephone survey was limited to only career or combination fire departments located in Imperial Valley, Los Angeles, Riverside, Orange, San Bernardino, and San Diego Counties. This is a limited sampling of fire departments located in California and across the nation. The results could vary if the size of the survey sampling was increased.

A limitation with the development of both surveys was the author's limited experience in developing survey instruments, and compiling and statistically expressing data from survey instruments. The results could have varied significantly if the surveys were developed in a different manner. Also, the respondents' understanding of the questions could have varied due to the lack of a clear definition provided for each question. This possible lack of understanding could have reduced the validity of the responses.

Lastly, due to the research abilities of the author, research material related to this applied research project could have gone undetected. Undetected material and data that was pertinent to

this study could possibly have changed the results of this research.

Research Methodology

The desired outcome of this research was to analyze and evaluate the current Fire Department's various inspection programs for effectiveness and efficiency and make recommendations based on the conclusions of this study. Descriptive, historical, and action research methodologies were utilized to help guide the applied research project to find answers to the research questions.

The research was descriptive in that a literature review was conducted to review literature that was applicable to management of inspection programs.

Historical research was used to search old data basis and records pertaining to the City of Imperial Beach Fire Department's Inspection Programs.

Action research was conducted with the survey instruments. The surveys were designed to force respondents to answer the questions in a uniform manner and to provide data and information that would be useful for comparison and information-gathering purposes. The author felt that these survey instruments would provide more consistent data that would be more useful to answer the research questions and to assist with the development of recommendations for the fire department's inspection programs.

Definition of Terms

Advanced Life Support (ALS) First Responder. Advanced life saving procedures, such as cardiac monitoring, starting IV fluids, giving medications, and using advanced airway adjuncts. This type of emergency medical service treatment is usually delivered by the first responding fire department apparatus and does not directly involve transporting the patient.

Basic Life Support (BLS) First Responder. Non-invasive emergency lifesaving care that is used to treat airway obstruction, respiratory arrest, or cardiac arrest. This type of emergency medical

service treatment is usually delivered by the first responding fire department apparatus and does not directly involve transporting the patient.

Career Fire Department. A fire department, whose emergency response personnel are made up of full-time, paid resources.

Combination Fire Department. A combination fire department, whose emergency response personnel is made up of career (paid/full-time) and volunteer (non-paid/part-time or on call) resources.

Confined Space. A confined space is any space that meets the following criteria: 1) Has a size and shape that allows a person to enter; 2) Has a limited or restricted means for entry and exit; 3) Is not designed for continuous human occupancy.

Engine Company. An emergency response team of personnel assigned to a fire apparatus such as a fire engine. An engine company usually consists of a company officer, a fire engineer, and a firefighter.

Fire Captain. Responsible for the management of the actions of engine company personnel on emergency scene operations and day-to-day operations.

Incendiarism. Designed to cause combustion of fires or pertaining to the act of arson.

Self-Inspection Program. A procedure performed by the customer to inspect all (except single-family) or specific structures and premises for the purposes of ascertaining and causing to be corrected any conditions liable to cause fire, contributing to the spread of fire, interfere with firefighting operations, endanger life or property or any violations of applicable life safety fire codes or any other applicable code or ordinance affecting life safety.

Deputy Building Official - Fire Marshal. Responsible for construction plan checks, construction inspections, fire protection construction plan checks, and fire protection construction inspections.

Volunteer Fire Department. A fire department, whose emergency response personnel are made

up of part-time, non-paid or on-call resources.

RESULTS

The results of the literature review, the Imperial Beach Fire Department inspection records search, and the interview with the Deputy Building Official – Fire Marshal provided the following answers to research question 1:

The author interviewed the Deputy Building Official – Fire Marshal on January 11, 2001. In that interview the Deputy Building Official – Fire Marshal was asked several questions that were hoped would provide valid information regarding how the Imperial Beach Fire Department Inspection Programs had evolved into their present status. Additionally, some of the questions were developed so that the author could gain an understanding of the coordination and interactions between the Deputy Building Official – Fire Marshal and the Fire Department personnel responsible for administering the Fire Department’s inspection programs. The following is a brief summary of the interview and the Deputy Building Official – Fire Marshal answers to the questions. A copy of the survey instrument and the results are located in Appendix D-1.

1. Please briefly detail your job responsibilities.

Answer: I am responsible for all building construction plan checks and building construction site inspections for the City of Imperial Beach. I am also responsible for Fire Marshal duties for the City such as building construction fire protection plan checks and construction site inspection. I am responsible for enforcing all construction and life-safety applicable codes.

2. How many people do you have assisting you in your department?

Building Inspectors _____ 0 _____

Fire Inspectors _____ 0 _____

3. Please give a brief history of your knowledge of how the building, fire, and housing inspections programs have evolved in the City of Imperial Beach.

Answer: When I first came here approximately 14 years ago, the Building Department consisted of a Senior Building Inspector and three assistants. Their responsibilities included building plan checks, building permit issuance, construction inspection, housing inspections, weed abatement, and code enforcement issues. In the early 1990's, the Building Department was relocated to the fire station. Sometime prior to this move, the Building Department had been reduced to a Senior Building Inspector and two assistants. One assistant was responsible for code enforcement and the other was responsible for housing inspections. Both had weed abatement responsibilities. At about this same time, the Senior Building Inspector became responsible for some Fire Marshal activities and tasks. Between 1996 and 1997, all Building Department personnel were terminated by the City except me, the Deputy Building Official / Fire Marshal (Senior Building Inspector). At this time all housing inspections and weed abatement inspections were given to the Fire Department. Approximately in 1998, a Code Enforcement Officer was hired and placed in the Community Development Department. The Building Department works under the Community Development Department. The Community Development Director is responsible for and oversees the Building Department activities.

The City of Imperial Beach charges a \$10.00 fee for housing and fire inspections. I am not sure how long this fee has been in place, but it is my opinion that this fee is not enough and does not cover the cost of delivering the programs.

4. Do you conduct fire inspections? If yes, what occupancies? I inspect new construction fire protection systems. I don't do maintenance fire inspections. Do you conduct fire sprinkler and riser inspections? No, I don't have the time. Fire alarm inspections? No. Fire protection hood systems? No. Will inspect sprinkler, fire alarm, and hood systems in new construction. No maintenance inspections to my knowledge are conducted on these types of fire protection systems.
5. Do you monitor and coordinate with the Fire Department inspection programs? No. Please describe your interaction with the Fire Department inspection programs. Answer: Very little. I don't have the time and their inspection programs are not my responsibility.

Although the City of Imperial Beach is almost built out, there are still a consistent number of construction projects in the City. Like most cities, in the past several years, construction projects have increased substantially. Based on the fact that there is only one employee in the City of Imperial Beach Building Department, the Deputy Building Official – Fire Marshal, and the various duties and responsibilities of the position, it is not hard to understand that there is little, if any, coordination between the Fire Department inspection programs and the Fire Marshal.

In searching the records on the history of the Imperial Beach Fire Department, the author discovered that there had been no increase in Fire Department personnel during the last twenty years and in fact, the Fire Department has seen a reduction in personnel over the years. The Fire Department used to have an Assistant Fire Chief approximately twenty years ago and three additional firefighters, one per shift. However, these positions have been cut over the years due to budget considerations.

In recent history, the Fire Department has seen a significant increase in its inspection responsibilities. Based on the records search for pertinent history in regards to the inspection programs and the interview with the Deputy Building Official – Fire Marshal, it was discovered that the Fire Department had assumed an increasing amount of inspection responsibilities and duties without a corresponding increase in resources to handle these new responsibilities. The following chart is a six-year history of the number of inspections conducted by the Imperial Beach Fire Department.

Imperial Beach Fire Department

Inspections Conducted

	Residential 6+ units	Commercial	Residential 5 and < units	Total
1995	289	341	0	630
1996	272	329	0	601
1997	279	353	0	632
1998	277	347	1,267	1,891
1999	204	211	0	415
2000	280	360	1,270	1,910

As documented in the chart there has been a significant increase in five and under residential units inspection. This increase corresponds to when the Fire Department became responsible for all housing inspections. In 1999, there were no five and under residential units inspected. The Fire Department person responsible for the inspection programs' data and records management, Firefighter John French, stated to the author that these units were not inspected that year because the Fire Department could not obtain a current list of housing inspections from the

Building Department. Firefighter French stated that numerous attempts were made in an effort to coordinate with the Building Department to obtain a current and valid inspection list, to no avail.

The results of the literature review and the internal survey provided the following answers to research question 2:

To help answer this question the author conducted a telephone questionnaire survey. The questionnaire was administered to fire service personnel of other fire departments responsible for inspection activities in their respective departments located in Imperial Valley, Los Angeles, Riverside, Orange, San Bernardino, and San Diego Counties. The survey asked the respondents to answer twelve questions pertaining to their department's inspection program(s). The survey was developed as a tool to compare various aspects of the Imperial Beach Fire Department Inspection Programs against other fire departments', located in Southern California, inspection programs. The complete survey instrument and the results are contained in Appendix B-1. The following is the results from this survey:

1. Does your department perform Engine Company Prevention Inspections? _____

Answer: 48 Yes = 87% 7 No = 13%

2. If yes, what types of occupancies does your department's engine company inspect?

Answer: 48 responded to this question. 8 or 16% inspect all occupancies. 42 or 84% inspect a variety of occupancies. From only B's to everything but R's or E's.

3. Average number of inspections conducted by each engine company per year? _____

Answer: 36 responded to this question. The average number of inspections conducted by the respondents respective departments' engine companies was 444 inspections per year.

4. Average estimated time per inspection devoted to company inspections? _____

Answer: 35 responded to this question. The average estimated time it takes to conduct an engine company inspection by the respondent's fire departments was 30 minutes.

5. How much fire prevention/code training do your company officers receive annually?

Answer: 48 responded to this question. 26 or 54% of the respondents stated their company officers received no training in these areas. 12 or 25% of the respondents stated their company officers received some sort of specific in-house (department) training in these areas. 10 or 21% of the respondents stated their company officer's received one-time training in the California State Fire Marshal's Prevention 1A or Prevention 1A and 1B classes.

6. How often are inspections performed for each occupancy? Annually / Semi-Annually / Bi-Annually? Is it the same for all occupancies? _____

Answer: 48 responded to this question. 42 or 87.5% responded that their department inspects all occupancy inspections that they are responsible for annually. 2 or 4% responded that their department inspects all occupancy inspections that they are responsible for bi-annually. 4 or 7.5% responded that their inspection frequencies depended on the type of occupancy.

7. Does your department utilize a self-inspection program? If yes, what occupancies? Do you have an opinion on effectiveness of your self-inspection program?

Answer: 53 responded to this question. 44 or 83% stated no. 9 or 17% stated yes. Two of the respondents stated that they felt their self-inspection program was effective. Four of the respondents stated that they felt their self-inspection program was ineffective.

8. How does your department track inspection results? Hard copy written records; computer?

Answer: 48 responded to this question. 31 or 65% use some sort of computer software records management program. 17 or 35% use a hard copy written form and then file the records.

9. Are your engine companies responsible for other types of inspections other than fire inspections? If yes, please identify them (Example; weed abatement inspections, business occupancy inspections, housing inspections, etc.)

Answer: 47 responded to this question. 33 or 70% stated that their engine companies were not responsible for any other type of inspections. 8 or 17% stated in addition to fire inspections their engine companies were also responsible for weed abatement inspections. 3 or 6% stated in addition to fire inspections their engine companies were responsible for hydrant inspections. 2 or 4% stated burn permit inspections and 1 or 2% stated target hazard inspections. None of the respondents department's engine companies were responsible for more than two types of inspections.

10. What are your engine companies average number of re-inspections? _____

Answer: 43 responded to this question. On average, 60% of initial inspections had to be re-inspected at least once.

11. What is your compliance rate for engine company inspections in regards to elimination of inspection violations?

Answer: 43 responded to this question. The average compliance rate of the respondents was 90%.

These results were useful for comparison purposes. The results indicate the Imperial Beach Fire Department ranks at the top in numbers of inspections conducted and the different types of inspections conducted.

To further assist in answering the research question, the author reviewed pertinent and valid literature to help determine the purposes of the inspection programs the Imperial Beach Fire Department conducted. In the 1997 *Uniform Housing Code*, the housing code adopted by the City of Imperial Beach, it states the "purpose of the code is to provide minimum standards

to safeguard life or limb, health, property, and public welfare by regulating and controlling the use and occupancy, location, and maintenance of all residential buildings and structures within a jurisdiction” (p. 1).

In the 1997 *Uniform Fire Code*, the fire code adopted by the City of Imperial Beach, it states it’s code provides “regulations consistent with nationally recognized good practice for the safeguarding to a reasonable degree of life and property from the hazards of fire explosions, and dangerous conditions arising from the storage, handling and use of hazardous materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises and provisions to assist emergency response personnel” (p. 1-1).

It would be reasonable to conclude that to adequately enforce these codes, jurisdictions that are responsible for enforcing them need to inspect premises and properties that are governed by these codes on a consistent basis with adequate resources and trained personnel. The inspections need to be thorough, accurate, and complete.

Additionally, to help answer the research question, Fire Department records on prevention and inspection activities, training, emergency responses, station and vehicle maintenance, and other typical daily activities were researched to help determine the amount of time that is needed in an average work day to complete the current Imperial Beach Fire Department’s assigned tasks and responsibilities. The following is a summary of the results. The complete chart detailing the time commitments and how they were arrived at can be found in Appendices G-1 and G-2.

I. Fire Prevention & Housing Inspections	130 min. / day
II. Station Maintenance	98 min. / day
III. Routine Vehicle and Equipment Maintenance	71 min. / day

IV. Training	25 min. / day
V. Physical Training	90 min. / day
VI. Emergency Response	50 min. / day
VII. Rest Periods (Breaks)	30 min. / day
VIII. Weed Abatement Inspections	20 min. day
IX. Miscellaneous	<u>60 min. / day</u>
Total Time Commitment:	574 min. / day
Standard Eight Hour Work Day	480 min. / day

In category I, not only were the initial inspections included in the computations, but also the average number of re-inspects were included, as based on inspections completed in the year 2000. Also, the average time committed to complete the inspections, 20 minutes on the initial inspections and 10 minutes on re-inspects was based on the Year 2000 inspection data. In Category II and III daily, weekly, monthly, quarterly, and yearly tasks and responsibilities and the time necessary to complete the tasks were identified and averaged so that an average time commitment per workday could be identified. In Category VI, the average daily number of emergency responses in a 24-hour period was divided by three in order to represent a standard eight-hour workday. For a complete detail on how the numbers for each category were arrived at and what type of activities were represented in each category please see Appendix G-1.

The results seem to indicate that in order for the Imperial Beach Fire Department personnel to complete their assigned workday tasks, an average of 94 minutes, or one and a half hours, are needed over and above a standard eight-hour workday. The Imperial Beach Fire Department personnel start their 24-hour shift period at 7:30 a.m. Therefore, a standard eight-hour workday with an hour lunch would conclude at 4:30 p.m. It is not uncommon for me, the Fire Chief of the Imperial Beach Fire Department, to see the Fire Department personnel working

on daily assignments until 5:30 or 6:00 p.m.

The author also researched the number of emergency responses over the past several years to see if there were any trends appearing that might have an affect on the inspection programs. The following is the result of that research:

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Emergency Medical	1314	1495	1298	1293	1486
Fires	168	104	121	122	131
False Alarms	58	42	55	28	50
Citizen Assists	78	51	77	58	69
Hazardous Condition	65	79	69	83	77
Other	4	5	3	4	0
Total Responses	1687	1776	1623	1588	1813

For the most part, the number of emergency responses has been relatively consistent over the past 5 years. This can be expected from a jurisdiction which is almost completely built out. However, in the Year 2000, there was a fairly significant rise in the total emergency responses. There was an approximate 12.5% increase of responses over the previous year's emergency responses. After two years of declining emergency responses, there was a relatively significant increase in emergency responses. Whether this was an aberration or a trend cannot be determined for several years. These numbers are useful in helping to determine future workload time commitments.

The number of fires has also been relatively consistent over the past five years. There was a high of 168 fires in 1996 and a low of 104 in 1997. There appears to be a slight increasing trend since 1997, but not statistically significant. These numbers, while of interest, do not necessarily provide conclusive data on whether the fire inspection program is having an effect on

reducing the number of fires. Although one could say the fire problem has been consistent, the numbers could be argued both ways.

The author also developed and administered an internal survey. The purpose of this survey was intended to help the author understand the respondents' knowledge of the inspection programs and how they perceived the various inspection programs. Additionally, because these are the personnel that were responsible for administering and delivering the inspection programs, the author wanted input from the users of the programs and any suggestions that they may have had to improve the inspection programs, if any. The questions and the complete responses from the four Imperial Beach Fire Department personnel who completed the questionnaire can be found in Appendices C-1 to C-4. Following are the questions and a short summary of the combined responses to them:

1. Please describe briefly what type of inspections are conducted in the Imperial Beach Fire Department Inspection Program, their specific goals, and the authority's they are conducted under?

Answer: All the respondents had a basic understanding of most of the inspections conducted by the Imperial Beach Fire Department and a general understanding of the goals and objectives of the various inspection programs. However, the respondents did not have a clear understanding of the expectations of the housing inspection program and under what authority they are conducted. The questionnaire identified for the author that the personnel responsible for administering and delivering the various Imperial Beach Inspection Programs had never been given a clear explanation or direction on the reasons the various inspection programs are conducted and the goals and expectations for the various inspection programs.

2. Are you satisfied that the Imperial Beach Fire Department Inspection Program is effective and efficient, and meets the intended goals of the program? If you do not believe the program is effective and efficient and/or does not meet the intended goals, please describe the areas you believe are deficient and why.

Answer: There was a strong consensus amongst the respondents that they felt the inspection programs were not effective or efficient. Some of the common areas of concern they identified were that there wasn't a clear policy in place for re-inspections. They felt that they would go out on inspections, identify violations, do re-inspections, and then if the violator did not correct the identified problems, there was no real follow-up or penalties to assure the violations were corrected. So year-after-year they would go to the same premises and note the same violations as they had the years before and nothing was ever done to the violator if they chose not to correct the problem.

Most respondents felt there was a lack of training in the inspection areas that they were responsible for. Additionally, a majority of the respondents felt that it would help with the effectiveness of the inspection programs if the department hired or designated a person whose sole responsibility was to manage and administer the various department inspection programs.

3. Have you received training on the types of inspections you are required to conduct in the inspection program? If you have received training, has it been adequate?

Answer: The respondents indicated that they had never received any training from the department in the various inspection duties they were responsible for. The only training they had received was on their own time, such as the "California State Fire Marshal's Prevention 1" classes. Although they felt these classes were good, the

respondents felt they did not offer specific information on the type inspections they conducted in the City of Imperial Beach.

4. Are there any recommendations that you would like to make, that in your opinion would make the Imperial Beach Inspection Programs more effective and efficient?

Answer: The respondents had numerous recommendations that they felt would assist with making the department's inspection programs more effective and efficient. A brief and incomplete summary of their recommendations includes the following:

- Purchasing and using a computer software program to record and track inspection data.
- Develop and implement a new inspection form.
- Use mass mailing to inform residents of the reasons for weed abatement inspections and when the Fire Department would be inspecting for violations.
- Develop a reasonable inspection frequency for various occupancies. Some occupancies may not require annual inspections.
- Limit the number of re-inspections conducted. Consider charging for re-inspections and forwarding non-compliance violators to Code Enforcement for enforcement activities.
- Conduct in-house training for Fire Department personnel on specific information useful and related to the types of inspections conducted by the Imperial Beach Fire Department.

The results of the literature review, the interview with the Deputy Building Official – Fire Marshal and the internal survey questionnaires provided the following answers to research question 3:

“At some basic level, we are all resistant to change. In any organization facing change, the question is not whether there will be resistance but rather how, when, where, and in what ways resistance will manifest itself. Think of it as a law of basic human physics, if you will. Change implies movement, and movement always has some level of resistance associated with it” (Baum, 2000, p. 1).

Based on the interview with the Deputy Building Official – Fire Marshal it is clear that he would potentially support any type of assistance that might help lighten his workload. At the same time, he might perceive any changes as a threat if some of his job responsibilities were reassigned to other personnel. The reasons for any proposed changes, how they might affect him, and how they could potentially benefit him would have to be clearly communicated and explained to him in hopes of lessening any resistance he might have to proposed changes.

In the internal survey, the personnel responding to the survey questionnaire expressed strong support for potential changes in the Fire Department inspection programs. The respondents made several suggestions and recommendations for possible changes in how the inspection programs are currently administered. Based on their responses to the survey questionnaire instrument, the author believes that Fire Department personnel would support changes if they felt the changes would help them more effectively manage and carry out their inspection duties and responsibilities.

As stated earlier in this report, the City of Imperial Beach is experiencing significant fiscal challenges. It is projected in the City’s five-year strategic plan, that expenditures could exceed revenues in approximately three to four years. Because of the current fiscal condition of the City of Imperial Beach and the fiscal challenges that are confronting the City of Imperial Beach and its citizens, it could be anticipated that there would be potential resistance to any proposed changes in the Fire Department inspections program by City officials and the citizens

of Imperial Beach that would require increased spending by the department to implement.

Additionally, it could be anticipated that customers of the inspection services the City of Imperial Beach Fire Department provides might resist any changes in these programs if they felt these services would be reduced or if they felt these services might cost them more than they are currently paying.

DISCUSSION

Based on this study, the results indicate that while it can be said that the Imperial Beach Fire Department Inspection Programs are probably cost efficient, they are neither effective nor are they efficient in the manner that they are administered or carried out. The results of this study have identified several areas of concern in regards to the Imperial Beach Fire Department's Inspection Programs.

The pertinent history indicates that the Fire Department has been given a significant increase in inspection responsibilities without receiving any corresponding additional resources to carry out these increased inspection responsibilities and duties. As indicated in the Imperial Beach Fire Department Inspections Conducted Chart, the Fire Department has seen its number of inspections conducted in a year triple, since 1995. In 1995, the Imperial Beach Fire Department conducted 630 inspections. In 2000, the Imperial Beach Fire Department conducted 1,910 inspections.

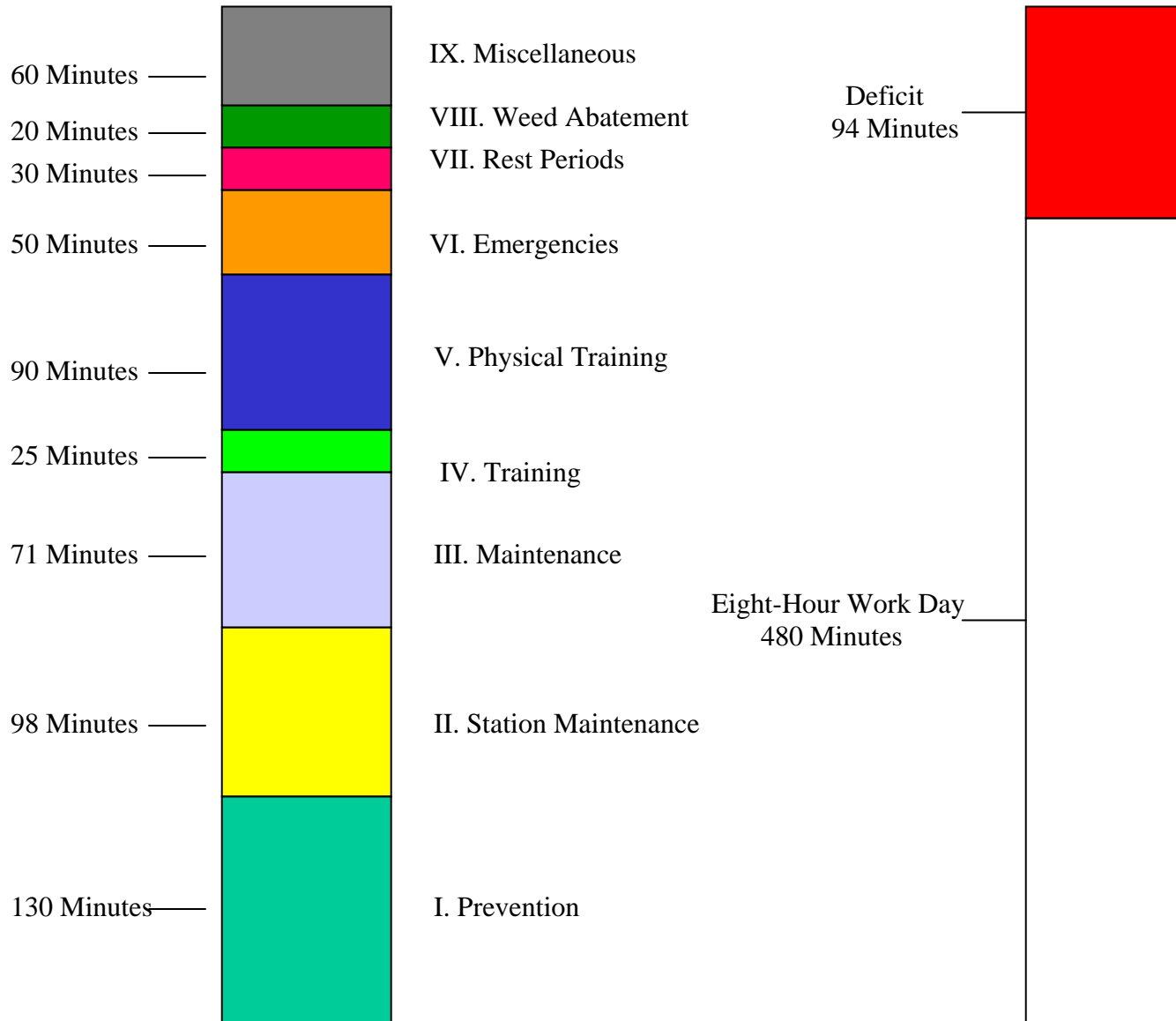
Question 3 in the Telephone Survey Instrument asked respondents the average number of inspections that their engine companies conducted each year. Thirty-six responded to the question and the average number of inspections conducted by the respondents' engine companies was 444. In fact, out of the thirty-six who responded to that question, the highest number of inspections per engine company at a fire department reported in the survey instrument was fifteen hundred. That is more than 400 hundred less housing and fire inspections conducted

per year than Imperial Beach Fire Department single engine company conducted last year. There were only three respondents who reported a thousand or greater number of inspections per engine company, per year, in their department. Additionally, because of the new push in the City to collect business license and T.O.T. taxes, the number of inspections conducted by the Imperial Beach Fire Department could go up significantly. The Imperial Beach Fire Department has agreed, this year, to work with the Imperial Beach Finance Department in an effort to determine if the City parcel information is accurate. The Fire Department will conduct a street by street search comparing current property parcel information to what is actually there. This has not been done in the City of Imperial Beach in recent history. It is estimated that as a result of this effort, the inspections the Fire Department are responsible for could increase by a thousand or more inspections a year, in the near future.

Of course, like most department engine companies, Imperial Beach Fire Department personnel have other duties that they must complete. The Imperial Beach Fire Department, like most fire departments, is responsible for many daily, weekly, monthly, and yearly duties and tasks. The Time Commitment Bar Chart helps to clearly understand the average daily time commitments based on a one year period of assigned tasks and responsibilities for the Imperial Beach Fire Department personnel. The chart detailing the components that made up each category can be found in Appendix G-1.

IMPERIAL BEACH FIRE DEPARTMENT AVERAGE DAILY TIME COMMITMENTS

Total = 574 Minutes



As can be seen in the bar chart, the time needed to complete average daily tasks exceeds the normal 8-hour business day by 94 minutes. These types of time commitments can lead to personnel not doing as thorough and complete of a job, as desired. In an effort to complete the large numbers of inspections, the Fire Department personnel have informed the author that they

do not do as complete and thorough inspections as they believe should be done. They believe that quantity is more valued by City management than quality.

The literature review revealed four measurements of effectiveness. They were “quality, productivity, efficiency, and satisfaction” (Ivancevich & Matteson, 1999, pp. 26-28). Quality was identified as the most important of the four criteria. It can be argued that the Imperial Beach Fire Department personnel are productive in regards to the number of inspections conducted, but these inspections are hurried and not thorough. Imperial Beach Fire Department personnel have stated to the author that often inspections are mere paper exercises because there is simply not enough time to do actual thorough on-site inspections. They simply do not have enough personnel to thoroughly and effectively carry out their inspection responsibilities. “Fire safety inspections made under pressure of time would in most cases better serve the cause of fire prevention had they not been made at all; an official inspection, however haphazard, may lull the owner or property manager into a false sense of security and subject the inspector and fire department to legal action... Thoroughness cannot be overemphasized” (Robertson, 2000, p. 71). “After a fire, citizens don’t ask when the building inspector or electrical inspector last checked the building. Rather, they ask when did the fire inspector last look at this building?” (NFAOLS 1994, p. 8-23). It is clear that the cities and their inspection personnel can incur unnecessary liability by focusing only on the number of inspections conducted and the money collected for inspections and not focusing on the effectiveness of the inspections.

The inspector has a legal responsibility to check for all items contained in the code the agency is enforcing. ...Subsequent to a major U.S. fire in which almost 100 people were killed, an examination of the most recent inspection report of the local fire department indicated that there were no violations in the facility. ...Grand jury investigations of this fire made public the fact that the building had received a clean fire safety report only a

few months before the fire, yet the conditions that contributed to the loss of life existed at the time of the inspection. (Robertson, 2000, p. 85)

Additionally, a large number of inspections accomplished doesn't mean that an inspection program is effective. Departments often get caught up in the numbers game. Importance is placed on whether the inspections were completed instead of whether the inspections were effective in meeting their intended goals.

The telephone survey provided information that substantiated that the Imperial Beach Fire Department single engine company conducts a large number of inspections. The Fire Department conducted over 400 more inspections per year than the highest reported per engine company in the survey instrument.

Also, the Imperial Beach Fire Department conducts a larger variety of inspections than any other fire department that responded to the survey. Additionally, the Imperial Beach Fire Department conducts approximately 5,000 annual weed abatement inspections. These weed abatement inspections were not used for comparison purposes by the author since very few of the respondents reported that their department conducted weed abatement inspections and the large number of weed abatement inspections conducted by the Imperial Beach Fire Department would have disproportionately inflated the comparison numbers.

It was felt by the author, that even though none of the respondents reported that their departments conducted housing inspections, these were close enough to fire inspections for comparison purposes. Both types of inspections, premises have to be entered to inspect, as opposed to weed abatement inspections where you can drive by the properties, in most instances, to inspect them.

Outputs are what a department does; outcomes are the consequences of that action (or inaction). The authors recognized that results-oriented management requires that outputs

be tangible and quantifiable; for example, in terms of number of inspections completed, number of calls answered, and so on. Outcomes - consequence of actions – are harder to define, but they need to be taken into account by management. Outcomes tell whether a program accomplished what was intended in the community. For example, completing inspections may or may not result in reduced incidence of fire. (Wood, 1999, p. 40)

“The purpose of conducting the inspection is to make the owner or occupant aware of any hazards that may exist, or have potential to exist. ...Remember you are there to help serve the people and businesses of your community” (NFAOLS 1994, p. 8-2). Unfortunately, we as fire service managers, all too often, either never analyze a program or only look at the program and analyze the numbers and never analyze the results for whether we are being effective or not. “A program also needs a method of self-analysis, and the fire prevention manager needs to ensure that such analysis takes place” (Coleman & Granito, 1988, p. 387).

In order to perform an effective analysis of a program, good records and data must be maintained and available. The author experienced difficulty in finding valid and accurate data for this report. An inordinate amount of time was spent trying to assemble accurate and valid records and data for this research and quite often the data that was found was incomplete. “Good records management is essential. ...They [records] also might be helpful in eliminating or minimizing liability. Lack of documentation always makes it difficult to prove something” (Hogan, 2000, p. 246). “An essential part of any fire inspection program is the development of an effective record keeping system. Such a system would be one which establishes a baseline for community fire safety as it currently exists and then has the capacity to track the success (or failure) of your efforts in the fire inspection area” (Carter, 1989, p. 22).

Records are essential for the proper administration of any fire prevention program.

Accurate and complete information regarding fire prevention and fire control activities

should be available if a thorough job is done. Analysis of statistical records can reveal specific problem areas in a program. ...Analysis of records can likewise point up the need for changes in fire prevention codes, modification of statutory requirements, and other changes in regulations. (Robertson, 2000, p. 254)

Another criterion of effectiveness is satisfaction. One way to measure satisfaction is to measure the satisfaction of the employees responsible for delivering a product or a program. Clearly based on the responses given by the Fire Department personnel in the internal survey, they are not satisfied with the way the current inspection programs are administered and carried out. They pointed out several areas they felt could be improved. One of the most important ways they felt the programs could be improved was by offering training specific to the inspection programs conducted by the Imperial Beach Fire Department. All four respondents stated in the instrument that they had received no inspection training from the department in the types of inspections they were responsible for.

As evidenced by the respondents' answers in the Telephone Survey Instrument, fire departments still do not devote much time or give much importance to training their engine company personnel in inspection techniques. Less than 50 percent of the respondents reported that their respective fire departments offered any type of fire prevention or inspection training to their engine company personnel. Yet, fire departments send their personnel sometimes on highly technical inspections often with little assurance that these personnel have the knowledge or skills to conduct them. The only knowledge that these personnel might receive in regards to this important public safety responsibility is from their peers. "Instead we assume that they will learn either by the osmotic process from their peers or from their immediate supervisors (who in all probability, had no more formal training than they did). We've developed the continuing process of the blind leading the blind" (Masten, 1987, P. 61).

The primary motivation behind the organization of most fire departments has been the suppression of fire in the interest of public safety, and little thought has been given to the allied function of fire prevention. Training programs for fire service personnel have concentrated for the most part on fire suppression activities, and there has been a conspicuous lack of emphasis on the prevention of fire, even in the programs of the major fire service conferences and in the national periodicals that serve the fire protection field. (Robertson, 2000, p. 68)

If fire departments are going to use suppression personnel for inspection duties, it is imperative that training be given to those personnel in this technical responsibility. Fire departments have an obligation to the public to provide trained and competent personnel when inspecting their premises for life safety issues and deficiencies. The research identified some inspection training standards.

The International Society of Fire Service Instructors (ISFSI) has addressed the issue of training fire service personnel in inspections as follows: ‘A structure to train within has already been created; NFPA 1031 defines performance objectives to which an inspector can be trained. The training is not and should not be a one time effort.’ According to ISFSI, the training must come in phases: basic training for entry level personnel; in-service training for all personnel; refresher training as necessary based on request or need; periodic training based on evaluation and assessment of the program, new codes, and staff performance; and reporting requirements. (Camp, 1999, p. 14)

“Fire department personnel who review and inspect fire protection systems must be thoroughly trained and receive constant in-service training to keep informed of the latest trends” (Bachtler & Brennan, 1995 p. 993). Additionally, any personnel conducting life safety inspections need specific training on the codes and authorities that they are responsible for

enforcing.

Fire Department personnel also expressed concern in the survey instrument that when violations are found on inspections and the responsible party is not fixing the violation, after numerous re-inspections, very little if anything happens to them and the violations simply are ignored and not fixed. This lack of follow-up and enforcement can bring liability to the City of Imperial Beach. “It is essential that procedures be established to follow up on a violation once it is discovered. Failure to follow up to make sure the violation is corrected could result in liability of the department for negligence. . . . Courts go out of their way to impose liability when a known violation is allowed to go uncorrected and someone is injured as a result” (Hogan, 2000, p. 233).

Another area of concern that was identified as a result of this study was the working relationship between the Deputy Building Official – Fire Marshal and the Fire Department personnel and the lack of oversight of the Fire Department inspection programs by the Deputy Building Official – Fire Marshal. In the interview, the Deputy Building Official – Fire Marshal reported that he had very little interaction with or knowledge of the Fire Department’s inspection programs. This lack of oversight, interaction, and coordination has led to inspection programs that have become ineffective and are not meeting their intended goals. No one with specific inspection training and knowledge has administered and evaluated the inspection programs on a continuing basis to assure their effectiveness. “Those responsible for a fire department’s code administration function need to understand the roles of other regulating agencies and the possible interactions among departments” (Coleman & Granito, 1988, p. 393).

This lack of coordination and oversight is further worsened because the Deputy Building Official – Fire Marshal works in the Building Department under the direction of the Community Development Director and consequently does not directly communicate with the Fire Chief.

Many issues are missed because of this arrangement and the lack of accountability to the Fire Chief by the Fire Marshal. In the 1997, *Uniform Fire Code*, the adopted fire code in the City of Imperial Beach, it clearly states that “the (fire) chief is authorized to designate a member of the fire department to exercise the powers and perform the duties of fire prevention engineer as set forth in this code. The fire prevention engineer could also be known as fire marshal” (UFC, 1997, Sec. 103.2.2.2). The code states that the fire marshal shall be a member of the fire department. There is obvious logic for this arrangement. Additionally, the fire code vests the authority for carrying out the provisions of the fire code with the fire chief and the fire department. It is very difficult to interact with and oversee the fire marshal when he doesn’t even work in your department. It is also difficult (impossible) for the Deputy Building Official – Fire Marshal to oversee and coordinate the Fire Department inspection programs when he has so many responsibilities and he is the only person in his department. The Fire Marshal needs to interact with and oversee fire life safety inspection issues on a daily basis. Because of the very nature of his department, the Building Department, fire issues are a lower priority than building and construction issues. Additionally, in regards to housing inspections, the *1997 Uniform Housing Code*, the housing code adopted by the City of Imperial Beach, states that “the building official is hereby authorized and directed to enforce all of the provisions of the code” (UHC, 1997, Sec. 201.1). However it doesn’t define the term building official and does not state the official needs to be a member of the building department.

The research also revealed that the current inspection form utilized by the Fire Department for fire inspections is not adequate. The form has not been updated since the 1980’s. In fact, on the form, the telephone area code identified for customers to call the Fire Department if they have any questions has been changed and not used in this area since the mid 1980’s. Additionally, the information used as references on the form is outdated and not valid.

Although the author believes there could possibly be resistance to any proposed changes to the Imperial Beach Fire Department's Inspection Programs, the resistance can be minimized by clear, accurate, and proactive communication with and amongst the stakeholders. "What your employees need first is information as to why the change is occurring. What is the rationale for the change effort. What is it, what will it do, and why are we making the change" (Baum, 2000, p. 29). I believe that these types of proactive communications would not only be beneficial for the employees to understand the reason for any changes, but these efforts would be beneficial for any person or customer that the change might affect, thereby lessening any resistance to the change.

The results of the literature search, records search, both surveys, and the interview with the Deputy Building Official – Fire Marshal reinforce the belief of the author that the Imperial Beach Fire Department Inspection Programs need to be thoroughly evaluated and significant changes to the various programs need to be instituted. It is hard to state or substantiate that the Imperial Beach Fire Department Inspection Programs are even meeting their most basic and important goal of protecting life safety and public welfare of the citizens and businesses of Imperial Beach. Especially, when the Fire Department cannot perform adequate inspections due in part to the lack of resources and training necessary to adequately perform the inspections. Some of these changes may require an increase in spending. The City of Imperial Beach, as previously documented in this study, is experiencing significant revenue challenges and potential shortfalls. Any proposed increase in spending will have to be thoroughly justified, if it is to have any chance of being approved by the governing body.

This study has helped the author understand the needs and shortfalls of the existing Imperial Beach Fire Department Inspection Programs. All three Fire Department inspections programs, weed abatement, housing inspections, and fire inspections are not as effective and

efficient as they need to be. The community of Imperial Beach, like all communities, deserves quality life safety inspection services. Creative and imaginative solutions will be needed to improve the effectiveness of these inspection programs. It is incumbent upon fire service managers and leaders to develop and provide effective inspection services to their communities. Effective life safety inspection programs are an important ingredient in protecting the health and welfare of any community. The results of this study have provided the data and information necessary to develop comprehensive and effective solutions to improve the existing Imperial Beach Fire Department Inspection Programs.

RECOMMENDATIONS

The problem, as previously stated, is that the City of Imperial Beach Fire Department had never analyzed and evaluated their various inspection programs for efficiency and effectiveness. The purpose of this applied research project was to analyze and evaluate the current Fire Department's various inspection programs for effectiveness and efficiency and make recommendations based on the conclusions of this report and seek approval for their implementation.

The research presented in this study has demonstrated the need for the City of Imperial Beach Fire Department to thoroughly evaluate its inspection programs and develop recommendations and implement changes to the various inspection programs in an effort to insure effective and quality life safety inspection services for the community of Imperial Beach. Based on the literature review, pertinent records search, surveys, and the analysis of the results of this applied research project, the following recommendations have been designed to facilitate this process:

1. Evaluate the current arrangement of having the Fire Marshal function under the direction of the Community Development Department.

2. Evaluate developing a new position in the Imperial Beach Fire Department. This new position would have Fire Marshal and inspection responsibilities. This would require that the Fire Marshal responsibilities be taken away from the Deputy Building Official. Additionally, increase the hours of the part-time Fire Department clerical position due in part to the increasing demands of inspection record management duties.
3. Initiate a study on the current housing inspection fee of \$10.00 and determine if it is adequate to cover the expenses of delivering the housing inspection program. Additionally, evaluate how this fee compares to what other local jurisdictions charge for housing inspection services.
4. Evaluate and determine the feasibility of developing a citizen volunteer program, modeled after the Sheriff's Volunteer Senior Patrol Program, for the purpose of providing housing and fire inspections. This program could be potentially coordinated by the proposed new inspection position in the Fire Department, if approved.
5. Evaluate and determine the feasibility of developing a Self-Inspection Program targeted at the 'B' Occupancies in the City of Imperial Beach.
6. Research and evaluate computer based Inspection Records Management programs for use in the City of Imperial Beach Fire Department. Make recommendations based on the results for instituting a computer based Inspection Records Management program.
7. Evaluate the current Imperial Beach Fire Department inspection forms and if changes are determined to be needed, develop new forms based on current inspection responsibilities.
8. Develop an informational bulletin detailing weed abatement requirements and inspection timelines and courses of action if the requirements are not complied with, for public dissemination.
9. Work with the Community Development Director and develop clear and concise

inspection follow-up policies and procedures and course of action timelines for non-compliance property owners.

10. Develop specific inspection training for Fire Department personnel in their areas of responsibility. Use NFPA 1031 as a guiding document to help facilitate the development of the curriculum. The following is a general guideline for development of the curriculum. This guideline is not intended to be all-inclusive and it is expected to evolve and change as the development process evolves.

Tentative Inspection Program Subject Matters

- Inspection techniques for each inspection program
 - Applicable code training and code enforcement regulations for each inspection program
 - Record keeping and data management
11. Obtain support for implementation of these recommendations from the Assistant City Manager, City Manager, and the City Council.

It is recommended that the author seek support and approval for the implementation of these recommendations immediately. The evaluation and development of these program recommendations will take approximately one year. It will be necessary to prioritize these recommendations and proceed on a course of action based on these priorities.

In the literature review the author reported that the IFSTA text, *Fire Inspection and Code Enforcement*, (1987) emphasized the importance of fire prevention inspections when it identified that “fire prevention inspections are the single most important non-firefighting activity performed by the fire service”(p.5). As fire service managers and leaders it is incumbent upon us to provide effective and efficient life safety inspection functions for the jurisdictions we are sworn to protect. A well-planned and comprehensive inspection program will go a long way in

assuring this. “The future of the fire service, is most likely going to be determined by the actions of its managers and leaders today” (Coleman & Granito, 1988, p.476).

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List of Fire Departments Sent the External Survey Questionnaire

Imperial County

Imperial City Fire Department
 Brawley Fire Department
 Calexico Fire Department
 El Centro Fire Department

Los Angeles County

Alhambra Fire Department
 Arcadia Fire Department
 Beverly Hills Fire Department
 Burbank Fire Department
 Compton Fire Department
 Covina Fire Department
 Culver City Fire Department
 Downey Fire Department
 El Monte Fire Department
 El Segundo Fire Department
 Gardena Fire Department
 Glendale Fire Department
 Hawthorne Fire Department
 Hermosa Beach Fire Department
 Inglewood Fire Department
 La Habra Fire Department
 La Verne Fire Department
 Long Beach Fire Department
 Los Angeles City Fire Department
 Los Angeles County Fire Department
 Lynwood Fire Department
 Manhattan Beach Fire Department
 Monrovia Fire Department
 Montebello Fire Department
 Monterey park Fire Department
 Pasadena Fire Department
 South Pasadena Fire Department
 Redondo Beach Fire Department
 San Gabriel Fire Department
 San Marino Fire Department
 Santa Fe Springs Fire Department
 Santa Monica Fire Department
 South Pasadena Fire Department
 Torrance Fire Department
 West Covina Fire Department

Orange County

Anaheim Fire Department
 Brea Fire Department
 Costa Mesa Fire Department
 Fountain Valley Fire Department
 Garden Grove Fire Department
 Huntington Beach Fire Department
 La Habra Fire Department
 Laguna Beach Fire Department
 Newport Beach Fire Department
 Orange County Fire Authority
 City of Orange Fire Department
 Santa Fe Fire Department

Riverside County

Cathedral City Fire Department
 Corona Fire Department
 Indian Wells Fire Department
 Indio Fire Department
 Moreno Valley Fire Department
 Murrieta Fire Protection District
 Norco Fire Department
 Palm Desert Fire Department
 Palm Springs Fire Department
 Rancho Mirage Fire Department
 Riverside Fire Department
 Temecula Fire Department

San Bernardino County

Chino Valley Fire Protection District
 Colton Fire Department
 Montclair Fire Department
 Ontario Fire Department
 Rancho Cucamonga Fire Protection District
 Redlands Fire Department
 San Bernardino Fire Department
 Upland Fire Department

List of Fire Departments Sent the External Survey Questionnaire

San Diego County

Alpine Fire Department
Bonita Sunnyside Fire Department
Borrego Springs Fire Department
Camp Pendleton Fire Department
Carlsbad Fire Department
Chula Vista Fire Department
Del Mar Fire Department
East County Fire Department
Encinitas Fire Department
Escondido Fire Department
Federal Fire Department
Imperial Beach Fire Department
La Mesa Fire Department
Lakeside Fire Protection District
National City Fire Department
North County Fire Protection District
Oceanside Fire Department
Poway Fire Department
Rancho Santa Fe Fire Protection District
San Diego Fire Department
San Marcos Fire Protection District
San Miguel Fire Protection District
Santee Fire Department
Solana Beach Fire Department
Vista Fire Department

Total 97 Fire Departments

Results From Telephone Survey

97 Telephone Contacts Made 55 Responded to the Survey Questionnaire = 56.7% Response Rate

Fire Department: _____ Number of Engine Companies: _____

Phone #: _____ Name of Respondent & Position: _____

1. Does your department perform Engine Company Prevention Inspections? _____

48 Yes = 87%

7 No = 13%

2. If yes, what types of occupancies does your department's engine company inspect?

48 responded to this question. 8 or 16% inspect all occupancies. 42 or 84% inspect a variety of occupancies. From only B's to everything but R's or E's.

3. Average number of inspections conducted by each engine company per year? _____

This number should be based on all shifts assigned to a single engine company. Example: Department Generic has an A, B, & C Shift assigned to each engine company. 1000 total inspections per year divided by 5 engine companies = An average of 200 inspections for each company per year.

36 responded to this question. The average number of inspections conducted by the respondents respective departments' engine companies was 444 inspections per year.

4. Average estimate of time per inspection devoted to company inspections? _____

35 responded to this question. The average estimated time it takes to conduct an engine company inspection by the respondent's fire department was 30 minutes.

5. How much fire prevention/code training do your company officers receive annually?

48 Responded to this question. 26 or 54% of the respondents stated their company officers received no training in these areas. 12 or 25% of the respondents stated their company officers received some sort of specific in-house (department) training in these areas. 10 or 21% of the respondents stated their company officer's received one-time training in the California State Fire Marshal's Prevention 1A or Prevention 1A and 1B classes.

6. How often are inspections performed for each occupancy? Annually / Semi-Annually / Bi-Annually? Is it the same for all occupancies? _____

48 responded to this question. 42 or 87.5% responded that their department inspects all occupancy inspections that they are responsible for annually. 2 or 4% responded that their department inspects all occupancy inspections that they are responsible for bi-annually. 4 or 7.5% responded that their inspection frequencies depended on the type of occupancy.

7. Does your department utilize a self-inspection program? If yes, what occupancies? Do you have an opinion on effectiveness of your self-inspection program?

53 responded to this question. 44 or 83% stated no. 9 or 17% stated yes. 2 stated that they felt their self-inspection program was effective. 4 stated that they felt their self-inspection program was ineffective.

8. How does your department track inspection results? Hard copy written records; computer?

48 responded to this question. 31 or 65% use some sort of computer software records management program. 17 or 35% use a hard copy written form and then file the records.

9. Are your engine companies responsible for other types of inspections other than fire inspections? If yes, please identify them (Example; weed abatement inspections, business occupancy inspections, housing inspections, etc.)

47 responded to this question. 33 or 70% stated that their engine companies were not responsible for any other type of inspections. 8 or 17% stated in addition to fire inspections their engine companies were also responsible for weed abatement inspections. 3 or 6% stated in addition to fire inspections their engine companies were responsible for hydrant inspections. 2 or 4% stated burn permit inspections and 1 or 2% stated target hazard inspections. None of the respondents department's engine companies were responsible for more than two types of inspections.

10. What are your engine companies average number of re-inspections? _____

43 responded to this question. On average, 60% of initial inspections had to be re-inspected at least once.

11. What is your compliance rate for engine company inspections in regards to elimination of inspection violations?

43 responded to this question. The average compliance rate of the respondents was 90%.

Please answer the following questions to the best of your ability. Your answers will have an affect on the outcome of the analysis and review of the Imperial Beach Fire Department Inspection Program and the recommendations that will be made as a result of this study.

1. Please describe briefly what type of inspections are conducted in the Imperial Beach Fire Department Inspection Program, their specific goals, and describe the authority's they are conducted under?

The Fire Department conducts inspections on all Commercial buildings, and residential rental properties. These inspections may include any one of these occupancies groups, A, B, F, M, H, S, E, R's or I.

The specific goals of the inspection program are to abate any hazards that may harm occupants or destroy property.

The authorities they are conducted under are the Fire Chief, the city municipal codes, Uniform Fire Code, Uniform Building Code, Title 19 and Title 24.

2. Are you satisfied that the Imperial Beach Fire Department Inspection Program is effective and efficient, and meets the intended goals of the program? If you do not believe the program is effective and efficient and/or does not meet the intended goals please describe the areas you believe are deficient and why.

The inspection program is not effective or efficient and the intended goals are not always met.

The inspection process consists of first inspection, re-inspection and then nothing is done after that if violations are not corrected.

Inspections and re-inspections should be done in timely manner.

Inspections should be consistent with what is written up and what is not.

Training should be conducted on how to inspect different occupancies and what special features to look for.

3. Have you received training on the types of inspections you are required to conduct in the inspection program? If you have received training, has it been adequate?

No training is conducted.

On the job training is the only training that is received, information which is passed down from the Captains while we are out doing inspections.

4. Are there any recommendations that you would like to make that in your opinion would make the Imperial Beach Fire Department Inspection Program more effective and efficient?

Software that will track prevention inspections

Enforcement of violations when they are not corrected.

Provide a training program in which we are trained how and what to look for on the different occupancies.

Name of Respondent: Firefighter John French – Imperial Beach Fire Department Records Manager

Please answer the following questions to the best of your ability. Your answers will have an affect on the outcome of the analysis and review of the Imperial Beach Fire Department Inspection Program and the recommendations that will be made as a result of this study.

1. Please describe briefly what type of inspections are conducted in the Imperial Beach Fire Department Inspection Program, their specific goals, and describe the authority's they are conducted under?

The FD does "after occupancy" inspections of all business, schools, apartments/condos with 3 or more units, and homes/apartments less than 3 units that are rentals. Inspections are also conducted for weed abatement.

The goal of fire inspections is to abate unsafe conditions, to protect life and property. A fire inspection is also intended to maintain a building and fire protection once it is built.

Inspections are conducted with the authority of the Fire Chief. His power is granted from several sources. The State of California grants power from The California Code of Regulations. Authority is also granted from the Imperial Beach Municipal Code. The City of Imperial Beach has adopted several codes such as the UFC, UBC, and Plumbing Code, etc. In addition, the city has created fees for rental property that require a fire inspection.

2. Are you satisfied that the Imperial Beach Fire Department Inspection Program is effective and efficient, and meets the intended goals of the program? If you do not believe the program is effective and efficient and/or does not meet the intended goals, please describe the areas you believe are deficient and why.

The IBFD inspection program is neither effective nor efficient. Members of the IBFD are not knowledgeable of the fire regulations. Therefore, many violations are missed. Further, there is a lack of enforcement on violations that have been noted. In the recent past, a process of inspect, give a written notice, re-inspect, and see you next year on uncorrected violations had been the norm.

Weed abatement inspections, for the most part, seem to be a beautification of the city. Time is wasted on overgrown green plants and a thin strip of weeds along an alley fence that pose little danger, if any. Also, time is wasted locating the correct address from the alley.

3. Have you received training on the types of inspections you are required to conduct in the inspection program? If you have received training, has it been adequate?

Training is very limited, and not adequate.

Types of training.

Fire prevention 1A, 1B, 1C. Good classes but I do not believe they fulfill the knowledge needed to perform a fire inspection.

“On the job training.” Information passed on from others with limited experience and knowledge of fire inspections.

4. Are there any recommendations that you would like to make that in your opinion would make the Imperial Beach Fire Department Inspection Program more effective and efficient?

Have stronger enforcement process for those that do not comply.

Have Fire Department personnel do “ride along” inspections with a prevention officer in a different city. Inspections should relate to the type performed in our city.

Have a temporary or volunteer prevention officer to perform the more complicated inspections. They could also train fire personnel to perform better inspections.

Use a computer program to track inspections.

Use a computer to generate a typed inspection form for the customer.

Weed abatement in alleys may be more effective with a mass mailing notifying property owners of common violations and that the Fire Department will be checking.

Name of Respondent: Paul Favor, Imperial Beach Fire Captain.

Please answer the following questions to the best of your ability. Your answers will have an affect on the outcome of the analysis and review of the Imperial Beach Fire Department Inspection Program and the recommendations that will be made as a result of this study.

1. Please describe briefly what type of inspections are conducted in the Imperial Beach Fire Department Inspection Program, their specific goals, and describe the authorities they are conducted under.

- a. Fire Prevention inspections

- b. Housing inspections

The goals I believe are to ensure Fire Safety to the residents and businesses in the City Of Imperial Beach. However, I believe in recent years that the emphasis has been put on quantity and not quality. As for whose authority the inspections are done under, I don't know. I believe the authority should be ultimately the State Fire Marshal.

2. Are you satisfied that the Imperial Beach Fire Department Inspection Program is effective and efficient, and meets the intended goals of the program? If you do not believe the program is effective and efficient and/or does not meet the intended goals please, describe the areas you believe are deficient and why.

- a. No, I am not satisfied with the effectiveness or the efficiency of the program.

- b. The program needs more backbone. (Violators fined)

- c. A better inspection form.

- d. If feasible we need a Fire Prevention Bureau. Even if it is only one Fire Prevention Officer.

- e. Under 4 units should be inspected by Building Dept.

- f. Too many inspections for Fire Personnel cuts down on Fire Training.

3. Have you received training on the types of inspections you are required to conduct in the inspection program? If you have received training has it been adequate? No. But we have asked for it!

4. Are there any recommendations that you would like to make that in your opinion would make the Imperial Beach Inspection Program more effective and efficient?

Yes, hire a Fire Prevention Officer full-time or even part-time to handle inspections on a regular basis. Concentrate on quality instead of quantity. Give housing inspections under 4 units back to the Building Dept. where they belong. Train existing Fire Personnel how to give proper inspections to Code using the proper authority and use a form that is worth the paper it is written on. The form should have a checklist of common violations with code number references on the form.

Name of Respondent: Steve Hauck, Imperial Beach Fire Captain

Please answer the following questions to the best of your ability. Your answers will have an affect on the outcome of the analysis and review of the Imperial Beach Fire Department Inspection Program and the recommendations that will be made as a result of this study.

1. Please describe briefly what type of inspections are conducted in the Imperial Beach Fire Department Inspection Program, their specific goals, and describe the authorities they are conducted under.

We conduct fire inspections on all commercial and public buildings. We conduct fire and housing inspections on all residential buildings of three units or more. In addition we conduct fire and housing inspections on buildings of less than three units when they have been issued a business license. We conduct weed abatement inspections. We act on complaints.

The goals of our inspection program are:

1. To limit the risk to, and loss of, life, the environment and property.
2. To ensure that the buildings, and what goes on in them, comply with the various codes that have been adopted as law by the City.
3. To familiarize company personnel with the buildings and property in the City.
4. To aid in the development of pre-fire plans.
5. To encourage property owners to keep their property in an attractive state.

The authority for our inspection program comes from various codes that the City has adopted. These include the UFC, UBC, California Title 19, 24, etc. The responsibility for conducting inspections has been delegated to the Fire Department.

2. Are you satisfied that the Imperial Beach Fire Department Inspection Program is effective and efficient, and meets the intended goals of the program? If you do not believe the program is effective and efficient and/or does not meet the intended goals please describe the areas you believe are deficient and why.

I feel the inspection program could be improved in several ways.

1. Our company officers do not completely understand what they are responsible for. Prevention training for our company officers would benefit our program by making the prevention inspections more time efficient, thorough and educational for our customers. This training should be commensurate with the type of inspections we are doing. Many of the prevention courses deal extensively with occupancies that do not exist in our community. San Diego Fire has an excellent field guide for their fire companies. A new version based on 1999 CFC is available.
2. Computer tracking of inspections. Our present system is cumbersome and paper intensive. Use the Department secretary to schedule, track and do related correspondence. Use our engine company in the field.

3. Develop a specific timetable for re-inspections (flow chart or job aid). We need consistency.
4. Limit the number of re-inspections allowed for each property before additional re-inspection charges or forwarding of inspection to Code Enforcement. Code Enforcement and Fire need to have well defined responsibilities to improve efficiency and cooperation. These responsibilities should be listed for anyone in the City who initially fields complaints.
5. Develop a reasonable inspection frequency for varying occupancies. Some occupancies may not require annual inspections. At present our inspection schedule is consuming an inordinate amount of time.
6. New inspection forms. As a result of our recent questionnaire, we have received several examples of simplified and codified forms that would aid the inspection process.
7. The inspection program would benefit from a pro-active prevention program. Plan checks, construction checks, initial occupancy inspections and inspections each time a business license is requested are all ways to educate, reduce later problems (violations) and reduce the need for field time by our engine company.
8. Consider self-inspection.
9. Fire Marshal. An in-house expert would certainly save time and effort with inspections, training and problem properties.
10. Streamline the weed abatement program. Use a proactive approach with newsletter or Citywide mail out to inform citizens of their responsibility. Most people have been cooperative once they understand the problem. In the past the convict crews have done the alleys. Consider doing some of the work ourselves. It might set a regrettable precedent, but I feel it would save time.
11. Use volunteers for some inspections.
12. Start the educational process at the time of business license application.
13. Indicate on the business license the type of occupancy.

3. Have you received training on the types of inspections you are required to conduct in the inspection program? If you have received training has it been adequate?

No Department-wide inspection training has ever been conducted. Any inspection training has been done individually.

4. Are there any recommendations that you would like to make that in your opinion would make the Imperial Beach Inspection Program more effective and efficient?

See above.

Name of Respondent: Paul Smith, Imperial Beach Fire Captain

Interview With Deputy Building Official / Fire Marshal Conducted on January 11, 2001

1. Please briefly detail your job responsibilities.

I am responsible for all building construction plan checks and building construction site inspections for the City of Imperial Beach. I am also responsible for Fire Marshal duties for the City such as building construction fire protection plan checks and construction site inspection. I am responsible for enforcing all construction and life-safety applicable codes.

2. How many people do you have assisting you in your department?

Building Inspectors 0 Fire Inspectors 0

3. Please give a brief history of your knowledge of how the building, fire, and housing inspections programs have evolved in the City of Imperial Beach.

When I first came here approximately 14 years ago, the Building Department consisted of a Senior Building Inspector and three assistants. Their responsibilities included building plan checks, building permit issuance, construction inspection, housing inspections, weed abatement, and code enforcement issues. In the early 1990's, the Building Department was relocated to the fire station. Sometime prior to this move, the Building Department had been reduced to a Senior Building Inspector and two assistants. One was responsible for code enforcement the other was responsible for housing inspections. Both had weed abatement responsibilities. At about this same time the Senior Building Inspector became responsible for some Fire Marshal activities and tasks. Between 1996 and 1997, all Building Department personnel were terminated by the City except me, the Deputy Building Official / Fire Marshal (Senior Building Inspector). At this time all housing inspections and weed abatement inspections were given to the Fire Department. Approximately in 1998, a code enforcement officer was hired and placed in the Community Development Department. The Building Department also works in Community Development Department. The Community Development Director is responsible for and oversees the Building Department activities.

Additionally, I believe the City of Imperial Beach charges a \$10.00 fee for housing and fire inspections. It is my opinion that this fee is not enough and does not cover the cost of delivering the programs.

4. Do you conduct fire inspections? If yes, what occupancies? I inspect new construction fire protection systems. I don't do maintenance fire inspection. Do you conduct fire sprinkler and riser inspections? No, I don't have the time. Fire alarm inspections? No. Fire protection hood systems? No. Will inspect sprinkler, fire alarm, and hood systems in new construction. No maintenance inspections to my knowledge are conducted on these types of fire protection systems.

Interview With Deputy Building Official / Fire Marshal Conducted on January 11, 2001

5. Do you monitor and coordinate with the Fire Department inspection programs? No.
Please describe your interaction with the Fire Department inspection programs.

Very little. I don't have the time and their inspection programs are not my responsibility.

**Imperial Beach Fire Department
Annual Inspection
Totals**

	Residential 6+ units	Commercial	Residential 5 and < units	Total
1995	289	341	0	630
1996	272	329	0	601
1997	279	353	0	632
1998	277	347	1,267	1,891
1999	204	211	0	415
2000	280	360	1,270	1,910

Imperial Beach Fire Department
Classification of Alarms: 1996-2000

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Emergency Medical	1314	1495	1298	1293	1486
Fires	168	104	121	122	131
False Alarms	58	42	55	28	50
Citizen Assist	78	51	77	58	69
Hazardous Condition	65	79	69	83	77
Other	4	5	3	4	0
Total Responses	1687	1776	1623	1588	1813

Imperial Beach Fire Department Average Daily Time CommitmentsI. Fire Prevention & Housing Inspections

Yearly Time Commitment Based on 2000 Inspections

Initial Inspection Average=20 minutes

Reinspection Average=10 minutes

Reinspection Rates Based on 1997 Averages

Initial Inspection	2000	x 20 min.=	40000 min.	
1 Reinspection	490	x 10 min.=	4900 min.	
2 Reinspections	<u>270</u>	x 10 min.=	<u>2700 min.</u>	
Total	2760		47600 min. / 365 days	130 min./day

II. Station Maintenance

Daily	60 min.	x 365	21900 min	
Weekly	120 min.	x 104	12480 min.	
Monthly	60 min.	x 24	<u>1440 min.</u>	
Total			35820 min. / 365 days	98 min./day

III. Routine Vehicle and Equipment Maintenance

Daily	30 min.	x 365	10950 min.	
Weekly	240 min.	x 52	12480 min.	
Quarter	480 min.	x 4	1920 min.	
Yearly	720 min.	x 1	<u>720 min.</u>	
Total			26070 min. / 365 days	71 min./day

IV. Training

Includes in-service, recruit, promotional, mandatory, special event and all

Department generated training. Average is based on year 2000 statistics.

150 hrs. x 60 min. / 365 days 25 min./day

V. Physical Training

90 min./day

VI. Emergency Responses

Based on year 2000 statistics.

1811 responses / 365 days x 30 min. x 1/3 day 50 min./day

VII. Rest Periods (Breaks)

30 min./day

VIII. Weed Abatement

Based on year 2000 statistics.

120 hrs. x 60 min. / 365 days 20 min./day

IX. Miscellaneous

Includes public relations, public education, record keeping, unscheduled maintenance and repairs and participation in special events.

60 min./day

X. Total

574 min./day

Imperial Beach Fire Department Average Daily Time Commitments
Based on year 2000.

I. Prevention	130 min. / day
II. Station Maintenance	98 min. / day
III. Routine Vehicle and Equipment Maintenance	71 min. / day
IV. Training	25 min. / day
V. Physical Training	90 min. / day
VI. Emergency Response	50 min. / day
VII. Rest Periods	30 min. / day
VIII. Weed Abatement	20 min. / day
IX. Miscellaneous	60 min. / day
X. Total	574 min. / day
XI. Eight-Hour Day	480 min. / day
XII. Deficit	94 min. / day