

Assessment of a Fire Prevention Bureau Service

Ohio Fire Executive Program

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## ABSTRACT

The problem addressed in my applied research project is the fact that our fire prevention inspector is going to retire at the end of this year and the Township Board of Trustees would like to eliminate the position. Does Concord Township need a fire prevention bureau? If it is found that a need exists for fire prevention bureau and a fire inspector, should the position be full-time or part-time? The research methods and procedures used to determine the answer to our questions was a review of information gathered from books on fire prevention bureaus, from the National Fire Academy building construction course, and a review of the Concord Township fire report, incident number 94-0894. Interviews were conducted of local fire chiefs and at a collection from Concord Township's fire prevention bureau was reviewed. The results of the interviews gave different perspectives on how each fire department's inspection bureau operated. The data collection discussed the following: prevention, enforcement, pre-construction planning and permitting, property inspections, and fire codes. The information from this applied research project shows clearly that the Concord Township Fire Department should replace the retiring Fire Inspector with another full-time inspector. Concord Township Fire Department should allocate more monies into the fire prevention bureau and more time into inspections and prevention.

## TABLE OF CONTENTS

Introduction	4
Background and Significance	4
Literature Review	10
Procedure	12
Results	13
Discussion	15
Recommendations	16
Reference List	17
Appendix A	18
1984-2001 Activities: Concord Township Fire Department Prevention Bureau	

## **INTRODUCTION**

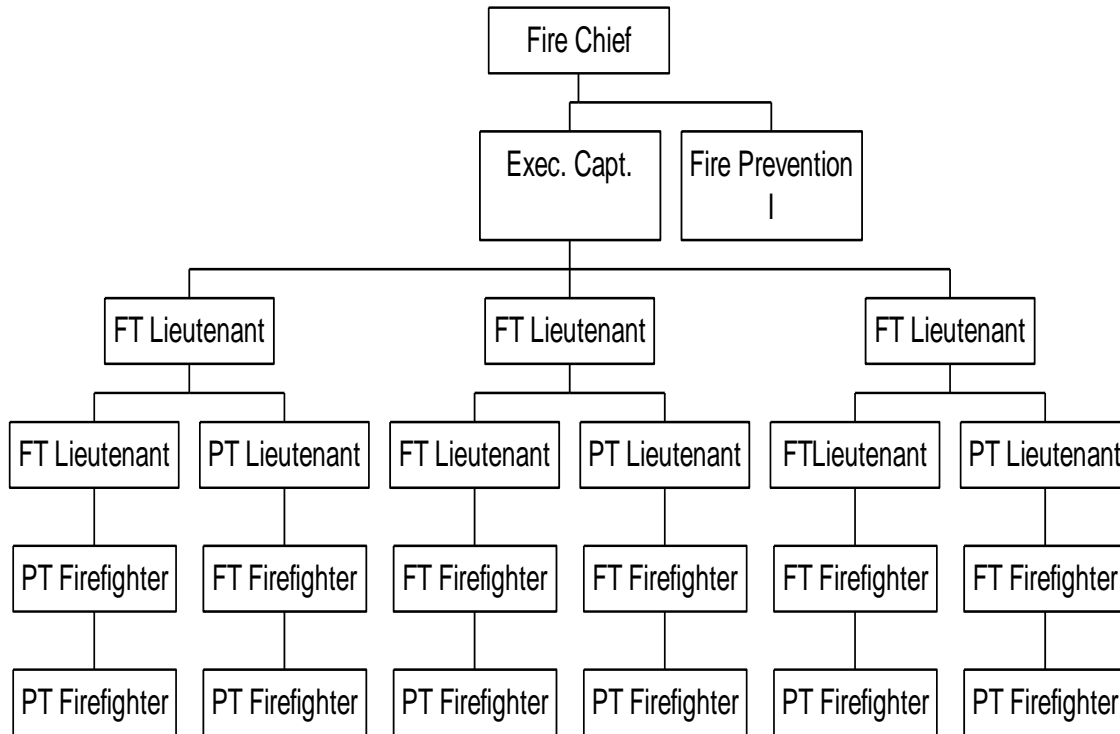
The Concord Township Fire Department full-time fire inspector is retiring at the end of this year. The position of fire inspector was created to accommodate the individual now in the position. When this individual retires, the Board of Trustees would like to eliminate the fire prevention bureau. The purpose of this project is to determine if there is a need, in Concord Township, for a fire inspector. Does Concord Township need a fire prevention bureau? If it is found that a need exists for a fire prevention bureau and a fire inspector, should the position be full time or part time? The aforementioned questions were used throughout this research project to find an answer to the original question: Do we need a fire prevention bureau? The research method used was the evaluative.

## **BACKGROUND AND SIGNIFICANCE**

In 1948, the Concord Fire Department was established as a volunteer agency that provided only fire suppression. The fire department was dependent on volunteers to answer alarms until 1972, when a full time Fire Chief was appointed. Until 1986, the fire department had one person on duty each evening from 10 PM-6 AM. In 1986, the township hired a full time firefighter and in 1988 more full time firefighters were put on shift, but still supplemented with volunteers.

In 1975, emergency medical service as a first responder was introduced and then started basic transport in 1976. In 2002, the fire department is a combination department, with three full time firefighters on shift each day, supplemented with four part time firefighters on shift twenty-four hours a day. Full time and part time firefighters respond from home when called back in for major incidents.

CONCORD ORGANIZATIONAL CHART  
2002



The Concord Township Fire Prevention Bureau was created in the early 1970's. At that time, the Fire Chief performed fire inspections. Prior to this, no fire inspections were done. The Fire Chief continued to do inspections until the fire department hired a part time fire inspector in 1981. This inspector, a lieutenant, came in part time, for four hours each day, to do inspections. In 1984, this Inspector became Fire Chief, and continued doing inspections until 1988. Then, 1988 through 1994, all inspections were done by on duty personnel. Every third day an inspection might be done. Follow up inspections, if completed, were not done in a timely fashion. In 1995, a full time fire inspector was incorporated into the fire prevention bureau. The decision to hire a full-time inspector was made by the Board of Trustees and the Fire Chief. The position of full time fire inspector was primarily created to accommodate the person. The Fire

Chief and Board of Trustees were concerned about a firefighter's health issues and the physical strain of responding as a line firefighter. The less physically demanding job of full time fire inspector was a better fit for this particular person.

When this full time inspector retires at the end of 2002, what would the consequences be of not replacing him? What if the Inspector was replaced with a part time inspector, or inspections again were conducted by on duty personnel? Without some type of fire prevention in the community, the fire department could experience a significant increase in loss of life and property due to fire. With inspections being completed only on a part time basis, inconsistent inspections may occur. This would leave a building being initially fire safe, following an initial inspection. However, if an owner were to make repairs or alterations that decrease fire resistance, with no timely follow up inspections to evaluate the changes, the buildings fire safety could be impaired.

A fire inspector evaluates new building fire protection systems. With no inspector or part time inspectors, new building plan reviews may or may not happen. When the inspector inspects during construction, questions can be answered and problems are identified and resolved before the building is occupied. The building department and the fire department are working together to insure a fire safe building. When a fire inspector is present in the community, there is a clear line of communication with the public. The fire inspector is the go between for the fire chief, so the fire chief is not directly involved with inspections. This allows for the fire chief to be a back up, or available third party, in cases where is an altercation between the fire prevention person and the building owner.

Most fire chiefs cannot do all the inspections for a community and adequately perform the other additional responsibilities of running the fire department. It is very difficult to have suppression personnel spend time cross training for fire inspections. Likewise, to take training time from the fire prevention bureau, thinking that suppression forces will make up the difference, is a false economy and detrimental to the overall goal of protecting life and property.

I have reviewed two fire incidents that illustrate the significance of having an active, full time fire prevention bureau and fire inspector. The following examples summarize the incidents and show the consequences of having inspections done on a part time basis versus having a full-time inspection bureau. The two communities had different outcomes, based on the type and frequency of involvement of the fire prevention bureau.

**Example 1:** WEK Plastics, 7280 Auburn Rd, Concord Township (Lake County) Ohio, 1994.

As reported in Concord Township Fire Department Incident Records, Run 94-0894, (1994), WEK was a plastic injection molding company. It's structure originated in the 1940's with several buildings tied together to create a one and two story building constructed in several phases. The entire structure was 24, 110 square feet, with a production area and 4,300 square feet of office space. WEK moved into the original building in 1968. At that time the Concord Township Fire Chief completed fire inspections. From 1981-1994, inspections were done by a part-time officer or on duty personnel. On November 16, 1977, the first of many problems were noted and a citation was issued. There were sixty-two problems listed on the inspection and these problems seem to continue until 1994. There were only seven inspections or follow up inspections done from 1980-1986. All inspections were done by on duty personnel from 1986-1994, so follow up inspections were either not done or delayed. All the inspections from 1977-

1994 usually had the same problems listed each time. On the 29<sup>th</sup> of October 1994, at 11:05 PM on a Saturday night, fire and explosion were reported at the WEK Company. First arriving fire units arrived to find the production area fully involved with fire. The fire required over twenty fire departments to help extinguish the blaze and over 100 firefighters to bring this fire under control. Fire units remained on the scene until 6:00 AM Sunday morning. The Department of Alcohol, Tobacco and Firearms and the Lake County Fire Investigation Unit were called to investigate. The loss was over 28 million dollars and it was the seventh largest fire loss in the United States for the year. The cause of the fire was left undetermined. Several possible causes for the fire spread were the failure of the fire doors to operate and the congestion of production materials in the isles. This fire left over 100 employees out of work and the revenue lost was in the millions to the Concord Township community. Consistent follow up of fire inspections with monitoring of corrective actions could have prevented this loss.

**Example 2:** Beacon Club Towers, Prairie Township (Franklin County) Ohio 1968.

As presented in National Fire Academy course “Building Construction for Fire Suppression Forces: Principles, Wood, and Ordinary Construction” (1986), the Beacon Club Towers, were two six-story wood-frame and brick veneer structures, were riddled with unstopped fire spread channels and other fire safety violations, some allowed by the local code and some not. The towers were built to burn, if let uncorrected. However, a fire disaster did not happen, because of the full-time fire prevention bureau inspector. The buildings were torn down, but not before the Prairie Township Fire Department fought and won a five-year legal battle with the developer. Prairie Township’s victory was a milestone in the history of fire prevention. It shows how



prevention, through regular inspections of new construction, backed up by strict code enforcement, can save lives and prevent disaster.

The problems with the Beacon Towers started after the contractor persuaded the Ohio State Building Department to approve the plans for the buildings. Normally the building code does not allow wood-frame construction over two stories, unless the building is completely sprinkled. The contractor stated that the use of fire-retardant wood structural members was comparable to non-combustible steel construction. The fire inspector for Prairie Township Fire Department found numerous problems with the construction, including aluminum wiring, only one elevator in each building, elevator shafts not fire rated, persons would have to walk over 200 feet to an exit, hot water boilers placed on combustible floors on the sixth floor, voids created in the mansard roof, balloon framing (no fire stops between floors), interior finish wall open above the studs, no fire stops around plumbing channels, voids above suspended ceilings, gaping holes around pipes, and hollow core doors.

In 1972, The Ohio Fire Marshall backed up the fire chief's stop work order on the uncompleted Beacon Towers (knick-named "tooth pick towers"). A five-year legal battle had begun. The fire chief gave the contractor the choice to remove the top four floors or tear down the building. The contractor appealed the case, and it went to the Ohio Supreme Court. The contractor subsequently went out of business and the community was left to raze the building. The Murray Commons Apartments were built in strict compliance with the Ohio Building Code under the watchful eyes of the fire prevention bureau. The structure is fully sprinkled and has smoke detectors and alarms.

This Prairie Township Fire Department incident illustrates that firefighters don't have to rush into burning buildings to save lives. A full time Fire Prevention Bureau, with consistent intervention, may have a significant impact on a community.

### **LITERATURE REVIEW**

Along with my review of the Wek Plastic and Beacon Tower incidents, multiple books and articles were studied and several fire chiefs interviewed to gather information on fire prevention bureaus. All the information indicates a need for some type of fire prevention bureau. In *Managing the Fire Services*, 5<sup>th</sup> Edition, Teems (1988) discusses how a comprehensive prevention program must be provided that protects lives and property (pp 379-401). In Concord Township, there are over 250 businesses that need to be inspected yearly, including one large hotel, five daycare facilities, five schools (elementary and middle), ten assisted living homes, and two nursing homes. With this business caseload for inspections, a comprehensive prevention program and code administration plan is essential.

We need to provide for the understanding of the relationship of the fire prevention bureau within the fire service organizational structure, as described in *Fundamentals of Fire Prevention*, Bare (1988). Bare discusses the organization, responsibilities, and the functions of a fire prevention bureau. In the "Fire Chief's Handbook", Corbett (1995) discusses the historical development of the different fire prevention activities, how a fire prevention bureau is organized in different departments, the duties of the fire prevention bureau and the selection of personnel for the bureau. He discusses the positive traits of an effective fire prevention bureau and how a well-organized fire prevention bureau operates efficiently in modern day fire departments and

industry. The different jobs done by a fire prevention bureau include code enforcement, plan reviews, legal issues, inspections, public education (done by some fire prevention bureaus), promulgate model codes, and occupancy permits (pp 963-986). Organization and administration of municipal fire prevention efforts are discussed in “Introduction to Fire Prevention” Robertson (1989). In this book we look at how different organizations set up their fire prevention bureaus, such as a one-person bureau to a twenty person bureau (pp76-98).

Articles from *Fire Engineering Magazine* such as “Politics and the Bureau” (1991, April) and “The Fire Prevention Bureau” (1990, June) by Glenn Corbett were reviewed. In “Politics and the Bureau” Corbett discussed the political game and its players. This article pointed out how the politics of a community can have a positive or negative affect on the community. The article goes on to show how to avoid the pit falls of the political game for fire prevention bureau. In “The Fire Prevention Bureau”, Corbett discussed at length how fire prevention bureaus, when run properly, can help in the reduction of loss of life and property. All the aforementioned articles were helpful in learning about different areas of fire prevention and how each community handles the operations.

The Ohio Revised Code (Section 505.38 (B) indicates that a fire prevention bureau of some sort must be established in a community

In each township not having a fire department, the board of township trustees shall appoint a fire prevention officer who shall exercise the all of the duties of a fire chief except those involving the maintenance and operation of fire apparatus.

The Ohio Administrative Code . (Section 1307:7-1-03: FM-102.0-102.2) provided further specifics on a fire prevention bureau's role in the enforcement of fire codes in a community:

Fire official: The fire marshal, any assistant fire marshal, any certified fire safety inspector.... the chief of the fire department in each township.....or the fire prevention officer of a township where no fire department is established shall be designated to enforce the provisions of this code. The fire official is herein also referred to as the code official

Inspections: The fire marshal, any assistant fire marshal, or certified fire safety inspector may inspect all structures, premises and vehicles pursuant to section 3737.14 of the Revised Code as often as may be necessary for the purpose of ascertaining and causing to be corrected, any conditions liable to cause fire, contribute to the spread of fire, interfere with fire fighting operations, endanger life or any violations of the provisions or intent of this code or any other ordinance affecting fire safety.

Also reviewed were all the Concord Township Fire Department Fire Prevention Bureau records from 1968 thru 2002, which illustrate how intermittent the inspections were until 1995, when a full time inspector was hired (Appendix A).

### **PROCEDURE**

Information gathered from the literature, interviews, Concord Fire Department operations, and research papers were reviewed. The present fire inspector from Concord Township, former fire chief of Concord, present Painesville City Fire Chief, Painesville City Fire Prevention officer and the Painesville Township Fire Chief were interviewed. Departments selected to interview s were with departments comparable in size and demographics. Interviews focused on

departments operations dealing with their fire prevention bureaus and how inspections were completed. In regards to Painesville Township, questions were included to identify who does their inspections, plan reviews and other bureau functions without a dedicated fire inspector. Fire loss, costs for operations, and the organization of their bureaus were discussed.

## **RESULTS**

The interviews gave different perspectives on how each fire departments inspection bureau operated. I interviewed the chief of Painesville City Fire Department. Painesville City operates with a full time Captain in charge of their fire prevention bureau and one part-time inspector. Painesville City has had a full-time inspector for over twenty years. All inspections and follow up inspections are completed, along with building plans review, and follow through with new buildings. Painesville City is seven square miles, with a population of 18,000, a full time fire department and city demographics are diverse with a good industrial base. (F. Whittaker, personal communication, January, 2002)

Painesville Township does not have an inspection bureau. They complete inspections with the on duty personnel and are not consistent. Painesville Township is twenty square miles, with a population of 18,000, a combination fire department, township demographics are diverse with some industry and a large commercial base (L. Thompson, personal communication, January 2002). In comparison, Concord Township has a full-time fire inspection bureau, the inspection bureau is active with routine inspections, follow up inspections, plan reviews, and on site during construction inspections (P. Jenkins, January 2002). Prior to 1995, inspections were incomplete and not all building plans reviewed. Fire Losses show the difference in the communities and the losses. Fire Loss for the last three years:

<u>Community</u>	<u>Fire Loss</u>	<u>Total Property Value</u>
Concord	\$878,551	\$5,900,000
Painesville Twp	\$400,429	\$3,144,000
Painesville City	\$1,462,700	\$7,123,000

My research data discusses the following:

**Prevention:** Fire prevention is the responsibility of every member of the fire service. Fire prevention coordinates planning with the Planning, Building, Zoning, Health, Police, and other departments. Fire prevention works with the schools, hospitals, factories, commercial buildings, and with the public.

**Enforcement:** The fire prevention codes regulate building construction, electrical wiring, hazardous materials, fire exits, fire protection equipment, and public assembly. Enforcement ensures that protection features are built in and maintained properly. This section shows the need for properly trained personnel to carry out code enforcement.

**Pre-construction planning and permitting:** The fire prevention bureau ensures fire protection is planned into new construction projects. Pre-construction meetings should take place before plans are submitted for review. The fire prevention involvement must be consistent and coordinated. Fire prevention and must learn to work with all the construction trades.

**Property inspection:** This is the backbone of the fire inspection bureau. It gives one on one with the property owners. It covers new and existing buildings, allows for evaluation of the built in fire protection systems. The fire prevention bureau must have the availability of code books, reference standards, and data collection forms. The training must be on going and ensure the fire

prevention inspector is current. A comprehensive code administration must place the protection of health, safety, and the welfare of our citizens foremost.

**Fire Codes:** The fire codes are primarily utilized for maintenance of protection features and is intended to work in concert with the building code. The uniqueness of the fire code makes the code monitoring that of monitoring the community's overall condition. An example would be that on a routine inspection the inspector notices a wall removed. The wall removed was a load-bearing wall causing the structure to be unstable. Structural collapse is a constant danger to firefighters; building codes and inspections can reduce firefighter deaths.

Ohio Law requires some type of fire inspection bureau. Through out the state and the country there are many variations of fire prevention bureaus, from one-person operations to departments with a staff of twenty. Some have specialized operations where everyone has a different specialization, such as electrical. This type of organization is less cost efficient due to the specialization. Some fire prevention bureaus use civilian inspectors, retired firefighters, disabled firefighters, some "force" firefighters into the fire prevention bureau, and some require all potential chiefs to serve in fire prevention. Surprisingly, no information was found in articles, research books, or any other venue which negates the need for a fire prevention bureau..

## **DISCUSSION**

The WEK plastic factory fire and the Beacon Towers in Prairie Township potential fire were the good examples of a lax fire prevention bureau and a pro-active fire prevention bureau and the results. The strengths of having a pro-active fire prevention bureau is an important step toward achieving better protection of life and property. The weaknesses are that most fire departments

do not put the time and monies into the fire prevention bureau and the enforcement of the fire codes. Many fire departments make attempts to do inspections, but are usually short handed in the fire prevention bureau. The most successful part of the research was the valuable information found to support the need a fire prevention bureau. There exists an incredible amount of research on the topics of fire prevention need at the National Fire Academy. It seems this topic usually comes up during budget hearings and when monies are tight.

### **RECOMMENDATIONS**

The Concord Township Fire Department should replace the retiring Fire Inspector with another full-time fire inspector. Concord Township Fire Department should allocate more monies into the fire prevention bureau and more time into inspections and prevention. With the number of inspections done each year, the time is rapidly approaching when the hiring of a second inspector for code enforcement and research will be necessary.



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