ISO CLASSIFICATION

Executive Planning

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An applied research project submitted to the National Fire Academy as part of the Executive Fire Officer Program

December 2000

Appendices Not Included. Please visit the Learning Resource Center on the Web at http://www.lrc.fema.gov/ to learn how to obtain this report in its entirety through Interlibrary Loan.

ABSTRACT

This applied research project examined the ISO classification rating process. The problem that motivated this research was that the ISO classification of the Miramar Fire-Rescue Department was not in compliance with the vision of the organization.

The purpose of this applied research project was to explore the organization's need to improve their ISO classification and identify the steps needed to direct a strategic plan to meet the vision of the department.

This applied research project used the historical and descriptive research methods. The following research questions were posed:

1.) Why is it important to improve the community's ISO classification?

2.) What criteria does ISO use to determine a fire department's classification?

3.) What strategic process should be adopted to improve the ISO classification?

The procedures used to complete this applied research project included a literature review of fire service textbooks, fire service journals, the internet, an interview and a survey instrument.

The results of the research revealed the importance of the ISO classification to the fire service, the criteria that must be addressed to meet the ISO classification standards and the steps required to direct a strategic planning effort.

Recommendations were presented to the Miramar Fire-Rescue Department to construct a strategic plan to improve the organization's ISO classification. The improved

classification provided the department with a method to meet the vision of the organization and their personnel.

TABLE OF CONTENTS

ABSTRACT……2

TABLE OF CONTENTS…….……...4

INTRODUCTION……...5

BACKGROUND AND SIGNIFICANCE……...6

LITERATURE REVIEW……8

PROCEDURES…….23

RESULTS……..25

DISCUSSION……34

RECOMMENDATIONS…….……..37

REFERENCES……..40

APPENDIX A (Letter to ISO)……...42

APPENDIX B (Improvement Schedule from ISO)……44

APPENDIX C (Survey Instrument)……56

APPENDIX D (Interview Questions)…….58

APPENDIX E (e-mail to ISO)……61

INTRODUCTION

The Miramar Fire-Rescue Department faced almost a decade of declining morale and a lack of direction. Once a leader in the community, the department had not been able to make the advances in technology and policy to keep pace with the other fire-rescue departments in the area. As employee turnover increased, the organization became concerned with the quality of service that was being provided to the community. In May of 2000, a new fire-rescue chief assumed the leadership role of the department. After restructuring the administrative staff, the new chief focused on increasing the department's morale and productivity. Part of the chief's vision for the organization was the improvement of the department's ISO classification.

The problem that motivated this research was that the ISO classification of the Miramar Fire-Rescue Department was not in compliance with the vision of the organization.

The purpose of this applied research project was to explore the organization's need to improve their ISO classification and identify the steps needed to direct a strategic plan to meet the vision of the department.

This applied research project used the historical and descriptive research methods. The following research questions were posed:

1.) Why is it important to improve the community's ISO classification?

2.) What criteria does ISO use to determine a fire department's classification?

3.) What strategic process should be adopted to improve the ISO classification?

BACKGROUND AND SIGNIFICANCE

The City of Miramar Fire-Rescue Department was recognized as a leader in the industry in the early 1990's. The department has been delivering both fire and medical services since 1955. In 1991, the department's morale peaked when the organization's paramedics won the Clincon Award signifying the department's excellence in emergency medical services. Soon after receiving the Clincon Award several factors occurred that would significantly alter the future development of the organization.

In 1992, the existing fire chief retired. Within a few years of the chief's retirement

a new city manager was hired. The stable political climate that once existed between the fire department and the former city administration began to deteriorate. The city was also experiencing a tremendous growth in its previously rural area during this period. Approximately 15,000 acres of vacant land were being developed for high-rise office buildings, warehouses, industrial occupancies and residential homes.

New demands and expectations were rapidly being placed on the fire department as they attempted to meet the needs of the expanding population. Unfortunately, the poor relationship between the city's administration and the fire department hindered the fire chief's ability to obtain new facilities, new technology and additional administrative staff. Lacking proper resources, the existing administrative staff members were unable to meet deadlines and complete their assignments. Overworked chief officers became frustrated by the city's lack of commitment and morale quickly declined throughout the organization.

In August of 1993, the department requested an evaluation from ISO. The chief hoped that a commitment to ISO would revitalize the spirits of the organization. The ISO project was assigned to a single division chief. The other administrative division chiefs had little or no input with the ISO process. The purpose or need for the review from ISO was not explained to the administrative staff or line personnel. No formal plan was developed to assist the ISO raters in obtaining the information they were seeking to properly classify the department. At the completion of the evaluation period the department received a disappointing 5/9 split classification, one of the lowest ratings in the area. The 5/9 ISO classification further contributed to the department's low morale and poor self-esteem.

In May of 2000, a new fire-rescue chief was hired. The chief immediately recognized the department's lack of direction and poor morale. He began to rebuild the relationships with the city's administration and the local politicians. With the new support from city hall, the chief however, was able to obtain technology and additional staffing that had been lacking for years. He was still faced with the difficult task of improving morale and showing a renewed commitment to the community. The chief decided to focus on the fire-rescue department's ISO classification as part of the organization's new vision.

This research project is extremely significant to the Miramar Fire-Rescue Department as a means to improve morale, provide assurance to the public of the department's commitment to service and to identify areas for improvement so that the department can continue to develop. It is critical to the organization's overall vision that

the steps needed to direct a strategic plan be identified to insure that the department will have the ability to improve their ISO classification.

This paper was prepared to satisfy the applied research requirements associated with the Executive Fire Officer Program at the National Fire Academy. This research relates to Module 4 "Strategic Planning" of the Executive Planning Course. Module 4 describes the method to initiate a strategic planning effort.

LITERATURE REVIEW

A literature review was conducted to summarize existing research regarding the importance of an ISO classification to the fire service, the areas of the fire service that are rated by ISO and to identify the steps needed to direct a strategic plan. The literature review included the review of published trade journals, fire service magazines, fire service textbooks, the internet and a personal interview.

ISO

Bachtler and Brennan (1995) define ISO as follows:

> The Insurance Service Office (ISO) is a nationwide nonprofit service organization that provides services to the property and casualty insurance industries and was formed over the course of many years by the consolidation of various regional and state insurance rating organizations (p. 175).

Bachtler and Brennan (1995) describe the ISO classification process as follows:

> In developing a modified insurance classification system for cities, the emphasis had been on the objective analysis of evaluating suppression features, of measuring major differences among cities, and of recognizing the potential for

interface between the ISO's individual building survey and rate-making function and its city-wide classification function (p. 180).

Granito and Hickey (1999) describes the purpose of the ISO classification and the associated rating schedule:

> The current Grading Schedule objectively reviews and correlates Those features of Public Fire Protection that have a significant effect on minimizing fire damage to the property of origin and developing Public Protection Classification numbers based on the fire defenses in place. Positive credit is given for existing fire protection instead of deficiency for what is not in place.
>
> The purpose of the ISO Inc. Public Protection Classification Survey is to gather information needed to determine a fire insurance classification which may be used to develop property insurance premium calculations. Grading schedule is not intended for property loss prevention or life safety purposes and no life safety or property loss recommendations will be made (p. 107).

Bachtler and Brennan (1995) discuss the ISO survey:

> There are several methods by which a survey can be initiated. First a community, because of what it perceives to have been significant changes or improvements to its water system or fire department, may request a regrading.
>
> Another way that a regrading may occur is if a major annexation occurs which significantly changes the boundaries of the city, or a new city incorporates

with its own fire department, and either one of these is brought to the attention of the ISO, in which case it will probably initiate a regrading.

Finally, the ISO has a generally established resurvey cycle of its own which attempts to regrade communities with a population less than 25,000 every 15 years and those with populations over 25,000 every 10 years (p. 201).

Importance

Granito and Hickey (1999) describe the importance of Public Protection Classification process as follows:

> The FSRS is important to all city leaders because:
>
> - A Public Protection Classification for a given city affects fire insurance premiums paid by both commercial and residential property owners. Generally, the better a city grades, the lower the premiums are for fire insurance. As the Public Protection Classification improves on the scale form 10 to 1, there is a general percent reduction in insurance rates for commercial owners insured with carriers that use ISO published rates.
>
>   The highest reductions are indicated between Class 10 (Unprotected), Class 9 (Semi-Protected) and Class 8 (Protected) plus the change from Class 4 (Protected) to Class 3 (Protected). These distinguishable differences reflect changes in fire suppression capability as determined through historical loss analysis. It is important to emphasize that the above general "percent of premium

decrease" presents a general concept. Insurance companies that file for rate deviations for specific commercial or personal lines of property insurance and individual state loss experience may change the actual premium structure between Public Protection Classes.

Dwelling fire insurance is typically divided into grouped classifications as follows: Class 10 (Unprotected), Class 9 (Semi-protected), Classes 5 through 8 (Protected), and Classes 1 through 4 (Protected). Again, rate deviations between insurance companies impact on standard dwelling fire insurance and homeowner's insurance which typically covers fire, theft, liability, temporary housing and other specific extended coverage. Individual cities need to work with local insurance agents and brokers to determine the impact a classification change will have on potential premiums or rate factors between classes.

*City administrators, including chief fire officers, who pay attention to the concepts in the Grading Schedule can expect to receive improved credits when a city is graded. Many of the items in the Grading Schedule relate to management policies on operations, records management, testing programs and private protection programs to reduce needed resources by the city. Sound management practices can earn credits just the same as purchasing equipment.

*Through the application of the Grading Schedule, it is recognized that public fire protection is the only local government delivery system where an improvement in service has the potential for reducing costs in

> the private sector through insurance premium savings. Lower fire insurance rates could lead to an incentive plan to assist in the financial support of public fire safety. (A portion of insurance monies saved by entrepreneurs could be recommitted by them to the support of public fire safety.) This concept has far-reaching implications during a time of scarce resources (p. 107).

Perry (1995) further adds:

Although many property owners will never have a fire in their home or business, most insure their property. The amount they pay for fire insurance is largely determined by the insurance Services Office (ISO) rating of the local fire department according to the Fire Suppression Rating Schedule (FSRS), a "point based" evaluation system that ranks fire departments from 1 to 10 (1 being the best, 10 the worst—effectively no public fire protection). A fire department can review its rating with its city council and discuss the improvements that can be made to the department to lower its rating, resulting in lower insurance rates. This review is especially important during budget discussions. Many times, these savings are greater than the department's budget.

Regardless of how much money the fire department saves, the money available for operating the department and making the capital improvements needed to provide better fire protection or lower insurance rates always will be limited (p. 10).

Hickey (1993) also discusses insurance savings:

Basically, city property insurance premiums decrease a s a city improves through the classification range from 9 to 1. A city's fire protection class may be used to establish fire insurance rates and premiums for both commercial and residential property. Building construction, exposure conditions, occupancy factors, and the installation of automatic sprinkler protection also affect the fire insurance rates of individual properties. The specific relationship of the FSRS to fire insurance rates is discussed in Chapter 3 (p. 5).

Fire-Rescue Magazine (1998) discusses insurance premiums, "If ISO knows you exist, at least a 20 percent insurance reduction is possible, even at a Class 9" (p. 44).

Dykstra (1989) discusses the possibility that insurance savings may not be available:

Where many people get confused on this issue is in thinking that an improved fire class will reduce fire rates on properties in their community. This is not always the case. For example, in Minnesota, once a community is Class 7, fire insurance rates do not change for dwellings, even if the community improves to Class 1. For commercial properties: while rates do go down for each class improvement, many property owners can reduce their rates more by minor changes in their own building than the reduction for a one or two class improvement can give them, especially if the costs to the community for the improvements are passed on to the property owner in the form of increased taxes. (p. 15).

Dykstra (1989) talks about the purpose of the ISO rating:

The Rating Schedule states: "The Schedule is a fire insurance rating tool, and is not intended to analyze all aspects of a comprehensive public fire protection program. It should not be used for purposes other than insurance rating" (p. 15).

Granito (1998) discusses another type of rating process:

The second way to rate your department is by using the newest, most comprehensive and what should be the most useful long-term assessment program.

This is the Commission on Fire Accreditation International (CFAI) Fire and Emergency Services Self-Assessment Manual and accreditation process, which has the potential to lead a department to a voluntary fire and emergency service award of accreditation. This comprehensive program recognized the great gain obtained when citizens, local officials, and fire and other emergency personnel assess and evaluate their level of service delivery and make desirable adjustments (p. 88).

Granito (1998) suggests:

Although I sometimes hear fire officers express low interest in ISO and state board ratings, I've noticed an increase in attention paid to them by municipal managers and elected officials. I suspect, there are three reasons for this. First, until very recently there were no other "official" ways to obtain a general view of a department except, perhaps, for two NFPA standards: 1201, Standard for Developing Fire Protection Services for the Public; and 1500, Fire Department Occupational Safety and Health Program. Second, many municipal officials relate the ratings to the department's firefighting capability, and straight

> firefighting runs are on the decline; therefore, some budget keepers view "firefighting" ratings having the potential to point toward reductions in the size of fire departments. Third, an improved rating (grade 4 to grade 3, for example) lets elected officials announce, happily, widespread community savings in certain insurance premiums (p. 88).

Coleman (1998) discusses issues other than insurance savings.

> Personally, I've gone through five ISO gradings, and I've learned something from every one of them. I'm a strong believer in the principle that fire and emergency services management is the responsibility of the fire chief. The best of all worlds is when the top professionals from both sides of this issue join forces to provide the most cost-effective and efficient services for the community being protected. To do anything less isn't in the interest of either the taxpayer or the ratepayer (p. 26).

Assistant Fire-Rescue Chief Dave Donzella of the Pembroke Pines Fire-Rescue (personal interview, November 11, 2000) expressed his views as follows:

> It was important for our department to improve our ISO classification because it provides our personnel with an increased sense of morale and pride. The effort bonded our employees and allowed our firefighters to feel a sense of ownership in our department. It was also important to obtain fire insurance savings for our community.

Rating Criteria

Bachtler and Brennan (1995) provide an overview of the ISO rating schedule:

> The Fire Suppression Rating Schedule (FSRS) is divided into two sections.

Section I is a Public Protection Classification (PPC) which is an indication of an entity's ability to handle fires in small to moderate size buildings. These are defined as buildings which have a Needed Fire Flow (NFF) of 3,500 gpm or less. Section II of the Fire Suppression Rating Schedule (FSRS) consists of individual public protection classification numbers for larger properties that have Needed Fire Flows (NFF) greater than 3,500 gpm.

The Fire Suppression Rating Schedule (FSRS) has three major features: Fire Alarm; Fire Department; and Water System, all of which directly affect the measurement of fire suppression insofar as their city-wide effect is concerned.

The Fire Alarm section examines how the public reports a fire and how the fire department receives that report. In a typical alarm received by telephone, the call taker will receive the call and alert firefighters, advising them of the location of the emergency. Because different cities receive fire alarms in different ways, the Fire Suppression Rating Schedule (FSRS) attempts to review all possible variations and assigns points to indicate equivalencies.

The Fire Department section considers apparatus, equipment, staffing, automatic and mutual aid, prefire planning, and training. The interrelationships of engines, truck companies, minor equipment, paid and volunteer firefighters, and department training are all evaluated using a point system to relate equivalencies.

The Water System section considers the supply works, main capacity to deliver fire flow, distribution of hydrants, hydrant size, type and installation, hydrant inspection and condition, and alternative water supplies (p. 181). Tricario (1996) further lists rating elements:

In order for a department to qualify for a grade higher than a “10”, it must meet these criteria:

- The fire department must be permanently organized under the applicable state or local laws. The organizational structure must include one person responsible for operations.
- The department must serve an area with definite boundaries.
- The department must have sufficient membership to assure at least four members able to respond to structural fires.
- A minimum of two hours of training must be conducted every two months.
- Alarm facilities must be arranged so that there is no delay in the receipt of alarms and the dispatch of apparatus.
- There must be at least one piece of apparatus meeting the criteria of NFPA 1901, Automotive Fire Apparatus.
- The apparatus must be housed to protect it from the weather.

Dykstra (1989) describes the percentages of the individual rating sections and how these areas are evaluated:

The Fire Suppression Rating Schedule is now divided into only three sections where the old schedules had six. These sections and their relative importance are:

Fire Alarm Facilities – 10%

Fire Department – 50%

Water Supply – 40%

We have a simple overall approach to the schedule.

- We determine the water supply needed for fire suppression. ("Needed Fire Flow" which is determined by the size, construction and occupancy of the buildings in the community.)
- The water supply is tested to see if it can deliver that amount to the fire department's pumpers.
- The fire department is evaluated to see if it has the equipment to pump and deliver the water.
- Does the fire department have enough manpower available to use the equipment?
- Is there a fire alarm system to call the firemen to the fire and does the system work? (p. 14).

Bachtler and Brennan suggest other helpful items to assist in the rating.

1.) staffing records for the last year, including minimum and maximum levels if applicable;

2.) records of all time off during the last year, including vacation, sick leave, Kelly days, etc.;

3.) a training record for each member of the department, broken down by category of training;

4.) a list of all training facilities and aids;

5.) information regarding the communications center, including number of calls received, number of operators on duty, and type and numbers of dispatch circuits;

6.) copies of all preplans completed, including sketches showing frequency and dates completed;

7.) a complete set of water system maps, including schematics of all plants and distribution sites;

8.) copies of all formal written automatic aid agreements;

9.) a complete record of all hours spent in stations and all responses made if volunteers are part of the system; and

10) a record of all structural responses for the last year, including the number of personnel responding to each.

Strategic Process

Bryson (1995) describes strategic planning as "a disciplined effort to produce fundamental decisions and actions that guide what an organization is, what it does, and why it does it".

Jackson and Mathis (1998) found strategic planning to be "the process of identifying organizational objectives and the actions needed to achieve those objectives."

Goodstein, Nolan and Pfeiffer (1992) discuss strategic planning and how it differs from long-range planning:

> Applied Strategic Planning is the process by which the guiding members of an organization envision its future and develop the necessary procedures and operations to achieve that future. In other words, Applied Strategic Planning helps the organization to create its own future. Therefore, it is different from long-range planning, and it is more than merely attempting to forecast the future and plan accordingly (p. 1).

Byrnes (1993) describes the five steps planning process:

*Five Steps in Formal Planning

1.) Define your objectives. This key first step defines what you want to achieve.

2.) Assess the current situation in relation to your objectives. You must clearly assess where you are and just how far you have to go.

3.) Formulate your options regarding future outcomes. Now you must design specific options to choose from to reach your objective.

4.) Identify and choose among the options. After creating and reviewing all of your options, you must select the option you assess as the most effective.

5.) Implement your decision and evaluate the outcome. If this plan is to work, it will be critical for you to set up short-term measuring points to mark how well you are doing (p. 72).

Bryson (1995) describes a ten step strategic planning process as follows:

Step 1: Initiating and Agreeing on a Strategic Planning Process.'

Step 2: Identifying Organizational Mandates.

Step 3: Clarifying organizational Mission and Values.

Step 4: Assessing the Organization's External and Internal Environments.

Step 5: Identifying the Strategic Issues Facing the Organization.

Step 6: Formulating Strategies and Plan to Manage the Issues.

Step 7: Reviewing and Adopting the Strategies and Plan.

Step 8: Establishing an Effective Organizational Vision.

Step 9: Developing an Effective Implementation Process.

Step 10: Reassessing Strategies and the Strategic Planning Process.

(p. 23).

Goodstein, Nolan and Pfeiffer suggest a nine step strategic planning process as follows:

1. Planning to Plan
2. Values Scan
3. Mission Formulation
4. Strategic Business Modeling
5. Performance Audit
6. Gap Analysis
7. Integrating Action Plans
8. Contingency Planning
9. Implementation (p. 7).

Support Center (1995) reveals their five step strategic planning process as follows:

Step 1. Getting Ready

Step 2. Articulating Mission and Vision

Step 3. Assessing the Situation

Step 4. Developing Strategies, Goals, and Objectives

Step 5. Completing the Written Plan

Finally, Bryson (1995) describes the process to begin the strategic plans:

1. Start where you and the other people who might be involved in or affected

by the process currently are.

2. You need a compelling reason to undertake strategic planning
3. There is no substitute for leadership
4. Taylor the process to the organization or community and its unique situation
5. The biggest innovation in strategic planning is having key decision makers talk with one another about what is truly important for the organization or community as a whole
6. The resource most needed to undertake strategic planning is not money but the attention and commitment of key decision makers.
7. Remember that the biggest payoffs from strategic planning may come in surprising ways or from surprising sources
8. Outside consultation and facilitation can help
9. If the going gets tough, keep in mind the potential benefits of the process (p. 234).

Literature Review Summary

In summary, the findings and observations of the articles included in this research helped identify the areas that needed to be improved to meet ISO's standards, why it is important to improve a fire department's classifications and the steps needed to direct a strategic plan. More specifically, the ISO classification procedure appears to have a widespread application in the fire service.

Two note worthy outcomes were produced by the literature review. Although

several articles stress that the community would receive substantial insurance savings for an improved ISO classification there were no specific dollar amounts mentioned in the articles. In fact, one article indicated that an improved rating may not lead to insurance cost savings. There was also no universally accepted model for strategic planning. Although many of the models shared common elements, they varied in regards to complexity and application.

PROCEDURES

The procedures used to complete this research included a literature review of fire service textbooks, fire service journals, the internet, an interview and a survey instrument.

The literature review began in June of 2000 at the National Fire Academy's Learning Resource Center. Additional literature was provided by the staff of the Learning Resource Center in July of 2000. A literature review was also conducted at Florida Atlantic University's Library, Nova Southeastern University's Library and the internet between July and November of 2000.

An interview was conducted with Pembroke Pines Fire-Rescue Department's Assistant Fire Chief, Dave Donzella. Chief Donzella represented the only ISO Class I department in Broward County, Florida. The purpose of the interview was to gain insight on the ISO grading system and obtain information on the department's strategic procedures. A copy of the ten-question interview can be found in the appendix D. The interview lasted approximately one hour. The segments of the interview have been included in the Literature Review and the Result portions of this applied research report.

A survey instrument was developed. The survey was field tested on members of the Miramar Fire Prevention Bureau. The survey was changed based on comments from fire prevention bureau staff members. The final draft of the survey was mailed to twenty-five (25) Fire-Rescue Chiefs in Broward County. The fire departments in Broward County, Florida were selected as the survey population because of their common procedures, equipment, technology, licensing and availability. Of the twenty-five surveys mailed, 19 responses were received. A copy of the survey has been included in the appendix C portion of this applied research proposal.

The results of the survey were entered into an excel data base and analyzed. The excel data base can be found in the Results section of this applied research project.

Limitations

The research results were limited to samplings of Broward County Fire Department, an interview and the literature review. The survey population only consisted of one (1) Class I ISO rated department. The survey results and the literature review contained limited information on the economic cost to improve the ISO classification and the insurance cost savings.

The interview was restricted to a single member of the team that helped the Pembroke Pines Fire Department obtain their class I rating. It would have been more beneficial for this research to interview the other members of the Pembroke Pines staff and members of other fire-rescue departments that had recently improved their ISO rating.

Requests to ISO for general information to assist in upgrading our department ISO classification resulted in a copy of our department previous report from 1993. A

copy of the report can be found in appendix B of this research paper. More current ISO information would have improved this study. It was also disappointing to discover that ISO does not provide specific information regarding insurance savings to the community. A copy of e-mail sent to ISO regarding financial impact can be found in the appendix E section of the research paper.

Because of the lack of economic impact information in this study, questions regarding the feasibility to improve one's ISO classification could not be adequately addressed.

RESULTS

1. Why is it important to improve the community's ISO classification?

Hickey (1993) discusses the importance of the ISO classification as follows:

> A city Public Protection Classification, determined by application of the FSRS, impacts on both the public and private sectors. This impact is important to the city's chief executive officers, urban planners, fire administrators, and water supply superintendents.
>
> City chief executives, including mayors, administrators, and city managers, are charged with the responsibility for needed fire protection and safety. The FSRS is one document that establishes fire protection functional needs in three major areas. These areas are Emergency Operations Centers (EOC) for receiving and handling fire alarms, an Emergency Services Delivery System for fire suppression, and Water Supply for both domestic consumption and fire protection. Responsible chief executive officers should understand the criteria

covered by the FSRS in each of the three areas as a measure of fire suppression capability for their cities.

Even more important, a city CEO needs to understand the Public Protection Classification process as it relates to insurance underwriting in the city. A Public Protection Classification is one guide used to develop insurance premiums for commercial, industrial and residential property in a given city. As a basic principle, the better a community classification, the lower the insurance premiums for occupied property.

Today cities are specifically interested in economic development. Commerce and industries seeking to expand or relocate carefully consider prospective city Public Protection Classifications published by the Insurance Services Office/Commercial Risk Services. A city Public Protection Classification not only provides a guide to the city insurance structure but also is an indicator of a city's commitment to public services (p. 4).

Assistant Fire-Rescue Chief Dave Donzella (personal interview, November 11, 2000) indicated that their improved ISO classification was extremely important because it bonded his fire fighters and allowed his personnel to feel a sense of ownership in their department.

A survey of the 26 fire-rescue departments was conducted to examine the ISO classification and identify department's who had recently improved their ISO rating (see table 1).

The survey revealed that of the responding organizations only the Pembroke Pines Fire-rescue Department received a Class I rating from ISO. Pembroke Pines Fire-Rescue

Department and the Broward County Fire-Rescue Department were the only organizations that indicated an insurance savings to the community. The Pembroke Pines Fire-Rescue Department estimated an insurance costs savings at approximately 3%. The Broward County Fire-Rescue Department estimated an insurance costs savings at approximately 6%. The Pembroke Pines Fire-rescue Department had improved their ISO rating within the last five years at a cost of $750,000. Broward County Fire-Rescue Department estimated a cost of $1,340,000 to improve their ISO classification. Based on the results of this survey, the Pembroke Pines Fire-rescue Department was selected for further study of their ISO criteria and strategic planning processes and methods.

TABLE 1

Comparison of Local Fire-Rescue Department

ISO Classification

Fire Dept. Name	SRR	ISOC	IC5	ECI	AEC	RIC	PRIC
Broward County	Yes	3/9	Yes	Yes	$1,340,000	Yes	6%
Cooper City	Yes	4	No				
Coconut Creek	Yes	6	No				
Coral Springs	No						
Dania	No						
Davie	Yes	5-9 Split	Yes	Yes	$500,000	No	N/A
Deerfield Beach	Yes	3	No				
Fort Lauderdale	Yes	3	Yes	Unk	Unk	No	Unk
Hallandale Beach	Yes	3	Yes	Yes	Unk	Unk	Unk
Hollywood Fire-rescue	Yes	2	No				
Lauderdale-By-The-Sea	Yes	4	Yes	Yes	$20,000	Yes	Unk
Lauderdale Lakes	Yes	3	No				
Lauderderhill	No						
Lighthouse Point	Yes	4	No				
Margate Fire-rescue	Yes	3	No				
Miramar	N/A	5-9 Split					
North Lauderdale	Yes	4	Yes	Yes	$3,000	Yes	Unk
Oakland Park	Yes	5	No				
Parkland	Yes	6	No				
Pembroke Pines	Yes	1	Yes	Yes	$750,000	Yes	< 3%
Plantation	No						
Pompano Beach	Yes	4	No				
Sunrise	Yes	3	No				
Tamarac	Yes	5	No				
Wilton Manors	No						

Note. SRR = Survey Response Received

ISOC = ISO Classification; IC5 = Improved Classification in last five years; ECI = Economic Cost for Improvement; ACE = Amount of Economic Cost; RIC = Reduced Insurance Costs; PRIC = Percentile Reduction in Insurance Costs; UNK = Unknown

Summary: The survey group consisted of all the fire departments in Broward County, Florida. Of the 25 fire departments contacted 19 responded. Of these 19 departments that completed the survey only one department obtained a Class I ranking. There was one- Class II department, six- Class III departments, five- Class IV departments, two- Class V departments, two- Class VI departments, one- Class III/IX split, and two- Class V/IX splits. Seven of the 19 responding departments had attempted to improve their ISO rating within the last five years. Only Broward County and Pembroke Pines Fire Departments indicated reduced insurance costs to their communities based on their improved ISO classification.

2. What criteria does ISO use to determine a fire department's classification?

Dykstra (1989) listed the following fire suppression rating criteria:

Fire Suppression Rating Schedule

- **Telephone Service** – Each telephone line provided for fire department emergency and business service is credited, up to the number needed. The number of lines needed depends upon the number of calls received. The telephone directory listings are also evaluated as to convenient and conspicuous location for both emergency and business numbers. Maximum of 2 points credit.
- **Operators** – Each fire alarm operator is credited, up to the number of operators needed. The number of operators needed depends upon the total number of calls and the method of operation. Maximum 3 points credit.

- **Dispatch Circuits** – Fire departments, except for a single station department with on-duty personnel receiving alarms directly at the station, need adequate means for notifying personnel of the location of fires. Credit is given for the ability and reliability of the alerting system to notify those members expected to respond. Maximum of 5 points credit.

The 1988 NFPA standard 1221: Standard For The Installation. Maintenance and Use of Public Service Communication Systems, is used as reference for the Alarm section.

- **Engine Companies** – Credit is given, depending on the amount of equipment, for each in-service pumper up to the number of needed pumpers. The number of pumpers needed depends upon the building needed fire flows, response distances and method of operation. Maximum of 10 points credit.
- **Reserve Pumpers** – Credit is given for pumpers in reserve. Maximum of 1 point credit.
- **Pump Capacity** – Credit is given for pump capacity of in-service pumpers, reserve pumpers and pumps on other apparatus up to needed pump capacity. The pump capacity needed depends upon needed building fire flows. Maximum of 5 points credit.
- **Ladder Service** – Credit is given for ladders, tools and ladder truck equipment normally carried on in-service apparatus for operations such as forcible entry, ventilation, salvage and overhaul operations in

all cities. The number and type of service needed depends upon the height of buildings, the response distances and the method of operation. Maximum of 5 points credit.

- **Reserve Ladder Service** – Credit is given for ladder and service trucks in reserve. Maximum of 1 point credit.
- **Distribution of companies** – Credit given for the area of the city within satisfactory first alarm response distance of pumpers, and ladder and service trucks. Maximum of 4 points credit.
- **Company Personnel** – Credit is given for the personnel responding to first alarms of fire. Maximum of 15 points credit.
- **Training** – Credit is given for training facilities used to train individual fire fighters and companies: training at fire stations: training of officers, drivers and recruits: and, pre-fire planning surveys. Maximum of 9 points credit.

NFPA standards 1901, 1911, 1914 and 1962 are used to evaluate equipment and annual apparatus and hose test programs.

- **Evaluation of Water Supply System** – Credit is given for the available water supply at representative locations in the city. The adequacy of the supply system may be limited by the water supply works, the water distribution system or the spacing of fire hydrants. Any water delivery method will be evaluated: it does not have to be the traditional hydrant and main system. Maximum of 35 points credit.

- **Hydrant** – Size, Type and Installation – Credit is given for the number of satisfactory hydrants installed. Maximum of 2 points credit.
- **Inspection and Condition of Hydrants** – Credit is given for the frequency and completeness of hydrant inspections and for the condition of the hydrants. Maximum of 3 points credit.

American Water Works Association Standards C502, C503 and Manual M-17 are used for reference in the Water Supply section.

- **Total Credit and Divergence** – A difference between the suppression potential of the Fire Department and the capability of the Water Supply System prevents the better feature from being utilized to the degree credited. Therefore, an adjustment is made to reflect the difference between these two features.

The class of protection at each of the few buildings in a city that have a Needed Fire Flow greater than 3500 gpm is determined by comparing the available protection *with the protection needed for each such building.*

- **Evaluation of Fire Department Companies** – Credit is given for each in-service engine and ladder company, automatic-aid engine and ladder company up to the needed engine and ladder companies. The number of needed engine and ladder companies depends upon the needed fire flow for the building being evaluated.
- **Water Supply Works** – Credit is given for the available water supply for the building being evaluated. The adequacy of the supply system

may be limited by the water supply works, the water distribution system or the spacing of fire hydrants.

- **Classification for an Individual Property** – The class of protection available for a specific building is the least protection of that provided by the Fire Department Companies and that provided by the Water Supply Works (p. 15).

3. What strategic process should be adopted to improve the ISO classification?

Assistant Chief Dave Donzella (personal interview, November 11, 2000) discussed his department's planning process. Chief Donzella indicated that a formal plan was constructed that clearly identified duties, responsibilities and time frames. The planning team consisted of chief fire officers and members of the utilities department. According to Chief Donzella the participation of the utilities department was a critical step in obtaining their Class I ISO rating. It was also extremely important all employees buy into the plan. Chief Donzella stated the following:

We went to the floor and spoke with our fire fighters. They provided us with their commitment to make our organization a Class I fire department. We included everyone, dispatchers, the utilities department and all personnel. Our department culture was committed to the ISO tract.

Goodstein, Nolan and Pfeiffer suggest the following nine step strategic planning process:

1. Planning to Plan
2. Value Scan

3. Mission Formulation
4. Strategic Business Modeling
5. Performance Audit
6. Gap Analysis
7. Integrating Action Plans
8. Contingency Planning
9. Implementation

DISCUSSION

Relationship Between the Study Results and the Findings of Others

The literature review and the personal interview supported the importance of the ISO classification procedure to the fire service and the need to follow a specific strategic process when facing a critical issue.

Colemans (1998) writes:

> Personally, I've gone through five ISO gradings, and I've learned something from every one of them. I'm a strong believer in the principle that fire and emergency services management is the responsibility of the fire chief. The best of all worlds is when the top professionals from both sides of this issue join forces to provide the most cost-effective and efficient services for the community being protected. To do anything less isn't in the interest of either the taxpayer or the ratepayer (p. 26).

Assistant Fire-Rescue Chief Dave Donzella of the Pembroke Pines Fire-Rescue (personal interview, November 11, 2000) expressed his views as follows:

It was important for our department to improve our ISO classification because it provides our personnel with an increased sense of morale and pride. The effort bonded our employees and allowed our firefighters to feel a sense of ownership in our department.

Granito (1998) writes: The first, and perhaps the easiest way to obtain a department rating is to let an ISO or state rating board do most of the work. Advantages are that the method of scoring each item is well tested, the raters generally are experienced and the process is reasonably short (p. 87).

Granito (1998) writes about the rating criteria as follows:

Because ISO evaluations are designed to provide a basis for setting fire insurance rates, the items typically checked are linked directly to the ability of a department to receive and transmit alarms, flow water, and arrive at a fire with sufficient resources and in a timely way (p. 88).

Bryson(1995) writes about the importance of strategic planning:

The second benefit is improved decision making. Strategic planning focuses attention on the crucial issues and challenges an organization faces, and it helps key decision makers figure out what they should do about them. Strategic planning thus can help organizations formulate and clearly communicate their strategic intentions. It can help them make today's decisions in light of their future consequences. It can help them develop a coherent and defensible basis for decision making and then coordinate the resulting decisions across levels and functions. And finally, it can help them exercise maximum discretion in those areas under their organization's control (p. 7).

Author's Interpretation of the Study Results

ISO's rating classification is a standard that is recognized as a measure of a department's success in the fire service. Because of the ISO's acceptance, its rating does project a great deal of importance for fire departments. The rating criteria that ISO uses is clearly defined and does provide each individual fire department with some latitude in meeting a specific standard. The literature review did reveal some unexpected results. Although the majority of articles talked about insurance cost savings there was little evidence of the actual savings in dollar amounts or percentages. Discussing the insurance cost with Assistant Chief Donzella (personal interview, November 2000) revealed that ISO does not provide insurance savings amounts. He estimated that the savings were approximately 3%, however, he indicated that these figures were not available. Prior to the literature review, this author was under the belief that the insurance cost saving would provide the economic incentive to purchase the equipment and manpower to improve the department's rating. Although the fire service discusses lower insurance premiums when selling the need to improve their ISO rating, the real motivating force appears to be employee pride and improved department's morale.

It was also surprising that the ISO Classification is not designed to actually improve the delivery of services for the fire department. ISO is clear that their primary purpose is to establish insurance rating and not to conduct a comprehensive analysis of the department.

The literature review was not able to produce a strategic model or process that is universally accepted by the fire service. This author's fire department has had little involvement with the concepts of strategic planning. The literature review revealed

numerous strategic theories that all implied that a strategic plan should be used for the successful completion of any long-term project. When discussing strategic planning with Chief Donzella (personal interview, November, 2000), he indicated that they had a formal plan to obtain their Class I rating, however it was not based on a particular strategic model or procedure. The author questions if it is always necessary to have a strategic plan for every project in order to be successful.

Organizational Implication of the Study Results

The study assisted the Miramar Fire-Rescue Department in recognizing the importance of improving the department's ISO classification and identifying the steps needed to direct a strategic plan.

The results of this research will allow the department to meet the vision of the organization. The improved ISO Classification will act as a stepping stone for future accreditation.

RECOMMENDATION

Based on the literature review and personal interview, it is recommended that the Miramar Fire-Rescue Department direct a strategic plan to improve their ISO classification. Although the insurance saving benefits are unclear, the improved ISO rating will benefit the department in the following areas.

- Providing assurance to peers and the public that the organization has defined missions and objectives.
- Providing a detailed evaluation of the department and the services it provides to the community.

- Develop a method for addressing deficiencies and areas for improvement that will help the department grow.
- Receive national recognition for the department by fire service and the public.
- Foster pride in the organization, from department's members, community leaders and citizens.

A cohesive team within the department must be developed to provide the necessary research, analysis, documentation, reporting and actions required to achieve and maintain the standards and requirements set forth by the ISO survey. The strategic plan should include the following steps:

1. Planning to Plan. Decides who will be on the strategic team.
2. Value Scan. Assist team members in understanding each others values.
3. Mission Formulation. Brings the plan into focus by explaining why the team exists and what it will do.
4. Strategic Business Modeling. The strategies logically link team's goals and objectives to the day-to-day tasks.
5. Performance Audit SWOT Analysis. Identifies the planning team strengths and weaknesses and will examine outside threats and opportunities.
6. GAP Analysis. Indicates that there is little or no gap between the present situation and the ideal future.
7. Integrating Actions Plans. The plan recognizes the need for clear linkages between goals.

8. Contingency Planning. Should help the planning team to develop a tracking system to identify items that could affect the plan.
9. Implementation. Performing the functions identified in the action plan.

The department should also consider the accreditation rating process. Accreditation is a nationally recognized program endorsed by the international City/County Management Association and the International Association of Fire Chiefs. The accreditation process appears to be a more comprehensive program that will have a greater influence on improving the department's delivery of service to the community. This program has long term implications that will help establish the department's future mission and vision statements.

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