# THE IMPACTS OF CHANGES IN THE USE OF ISO RATINGS BY INSURANCE COMPANIES SERVING NORTH MONTEREY COUNTY

**Executive Leadership**

By: Chris Orman
North County Fire District
Monterey, California

An applied research project submitted to the National Fire Academy as part of the Executive Fire Officer Program
October 2006

## CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed _____

Chris W. Orman

**ABSTRACT**

The North County Fire District (District) focused its operations and planning around improving its Insurance Services Office (ISO) grade in effort to decrease insurance rates in the District. Upon winning the improved grade, insurance rates did not significantly decrease and some residents experienced cancellation of their policy. The problem was that District management was not aware of current methodologies that insurance companies use to establish their rates. The purpose of this paper was to identify the current methods used by insurance companies to establish rates, so as to guide planning and operations within the District.

Descriptive and evaluative research methods were used to answer the following questions. What is the current ISO process for determining insurance rates? What methods other than ISO do insurance companies use to establish insurance rates use? Are fire agency capabilities still a factor in for determining insurance rates? Will new methods of establishing insurance rates have an impact in the provision of fire service? Can NCFD continue to have an impact on insurance rates?

The research procedures consisted of interviews with insurance agents, interviews with city managers, and a literature review. The results showed that Insurance companies establish their premiums more on incurred losses, hazards in existence, and other factors more than the on the effectiveness of the local fire department. The results suggest North County Fire District should work towards operations and activities that have an effect on reducing the actual losses within the District and re-focus efforts on life safety as a priority.

**TABLE OF CONTENTS**

## INTRODUCTION

For eighteen years, the North County Fire District had focused all of its operations and planning around improving its Insurance Services Office (ISO) Public Protection Classification (PPC) of Six in effort to decrease insurance rates for residents and business. The fire chief worked with the local water purveyors to improve the fire capabilities of the many water systems. Training programs were implemented, and documentation of pump tests, training, hose pressure tests, were improved. A ladder truck was purchased through a partnership with the Moss Landing Power Plant (MLPP).

In 2004 the District applied for an evaluation from the Insurance Services Office (IS0) and received a Public Fire Protection Class of four (ISO grade) in 2005. The District Board of Directors and the administration assumed that because of the improved ISO grade, insurance premiums for businesses and residents would decrease between 15 and 30%.

After achieving the improved PPC, firefighters and others, residing within the District reported insurance rates did not decrease substantially and in fact, increased in some cases. Some residents living in the Urban Wildland Interface (UWI) sustained cancellation of their policy or substantially increased rates.

The problem was that District operations and planning were not inline with current methodologies that insurance companies use to establish their rates. The purpose of this paper is to identify the current methods used by insurance companies to establish rates, and to use this methodology to guide planning and operations within the District.

Descriptive and evaluative research methods were employed to answer the following questions.

1. What is the current ISO process for determining insurance rates?
2. What methods other than ISO do insurance companies use to establish insurance rates use?
3. Are fire agency capabilities still a factor in for determining insurance rates?
4. Will new methods of establishing insurance rates have an impact in the provision of fire service?
5. Can NCFD continue to have an impact on insurance rates?

## BACKGROUND AND SIGNIFICANCE

The North Monterey County Fire District in California provides fire protection to approximately 45,000 people in an area of 125 square miles from three fire stations. The District staffs three full-time fire engines and staffs other equipment with call-back personnel and paid reserve firefighters. The District improved its Insurance Service Office (ISO) Public Protection Class (PPC) from a Six to a Four in 2005.

Improving the ISO rating had long been the major focus of the administration. The fire chief used the ISO as a planning tool. He worked for nearly twenty years to improve the nearly 200 water systems in the area and document their fire protection capabilities. He worked to increase daily staffing levels and to document training. He was able to get the local power plant to buy a ladder truck for the District and succeeded in improving the PPC before his retirement in 2005.

The District management had long believed and reported to the Board of Directors, that improving the PPC would drop insurance rates by as much as 15 to 30%. However, after the improved PPC, firefighters that lived in the District reported little or no decrease in their homeowner's premiums. The District discovered that some residents in the Urban Wildland Interface (UWI) were in jeopardy of cancellation of their insurance policies. Several homeowners living greater than three miles from a fire station reported having difficulty getting insurance. Some living farther experienced their rates increasing significantly or having their policies cancelled. It was apparent to the District that insurance rating procedures had changed.

It was clear to the Board of Directors that using ISO for planning was not as effective as it may have been. The Board of Directors hired a new fire chief in 2005 and

instructed the chief to develop a strategic plan for the fire District to address future operations and capital needs with the aim of providing the best possible service to the community for the most reasonable cost. The District previously assumed that lower insurance rates would offset the cost of augmenting fire department services, but the rules had changed. The question was how had these rules changed and what would the impact be to the fire department. Would the new rules have an effect on the District operations? Would the District operations have any affect on insurance rates in the future? Would it be beneficial to plan to improve the current PPC? If the District did not use the ISO as a rationale for investing in the fire operations, what rationale would there be?

This research project relates to the National Fire Academy's Executive Leadership class as it explores and provides background to an issue in which significant influence of elected officials and firefighters needs to occur. The research project relates to United States Fire Service Administration in that it supports efforts to reduce the loss of firefighters lives, promotes within our community a comprehensive, multi-hazard risk-reduction plan, and it responds appropriately in a timely manner to an emerging issue.

## LITERATURE REVIEW

The ISO is an organization that serves as a resource and consultant service to the insurance industry in 48 of the 50 states in America. Insurance companies subscribe to receive hazard and risk information for specific communities (O'Connell, 1998). It's history dates back to 1889 when the National Board of Fire Underwriters (NBFU) moved from their practice of basing insurance rates solely on the risks of a business and began insisting on construction improvements, greater care in fire prevention, and the

introduction of fire protection systems for the prevention and extinguishment of fires. The inducement for a business or community was that it would receive lower insurance rates if it complied, and risked losing coverage if it did not (Todd, 1966). The NBFU created a formalized grading schedule for municipal fire protection in 1916 and consolidated this grading system under one organization in 1971 with the formation of the Insurance Services Office (O'Connell, 1998). The rules at ISO changed in 2003 when it was required that every residence be within five miles of a fire station in order to receive any credit for being within a fire department jurisdiction (Stevens, 2004). They also introduced a program called Fireline to pre-determine the risk to residences from wildland fires and thus establish rates or mitigation requirements (ISO Inc., 2004).

Farmer's Insurance uses the ISO system and determine premiums based on the grade of the local fire service and the distance from the fire station. A house greater than five miles from a fire station would not be eligible for insurance unless they mitigated the distance with a water system, home sprinklers, or fire preventive construction. Farmer's uses ISO to determine commercial and business insurance, but as separate entities. They insure the building for its replacement cost and factor in mitigations. They insure the business in that building based on the contents and type of occupancy. (B. Tiet, personal communication, September 26, 2006)

State Farm and other insurance companies have moved away from ISO rating. State Farm is the nation's largest insurer of residential properties and stopped using the ISO rating in 2000. State Farm developed its own system of determining rates using the five digit zip code system to reflect prior claim experience in that area (Kang, 2006).

Western Mutual Insurance Group described a method similar to State Farm, they based their premiums on losses and risks within a given zip code area and the distance from a staffed fire station. Premiums are lowest if a home is within 3 miles of a fire station. (I. Garcia, personal communication, September 26, 2006)

One of the biggest issues is with large commercial or industrial occupancies. Frank O'Connell (personal communication, August 28, 2006), engineer with FM Global Incorporated, stated that because a large corporation it is able to shop for insurance services aggressively, they can demand concessions from an insurer. There are only so many dollars available for insurance and/or to implement hazard mitigations to decrease the hazard and risk, so insurers must balance the level of risk to their premium and still make a profit. Competition is fierce. He stated that because F.M. Global is a mutual insurance corporation, it is customer owned which means that it is not a publicly traded company; this takes the greed factor out of risk assessment. They are able to require necessary mitigations and charge a reasonable premium. FM Global assigns an engineer who looks at the specific risks of a client, recommends or requires mitigations and determines a premium based on the final risk with the hazards mitigated. They assume that the mitigations will handle the fire.

He went on to explain that their competitors do not factor the local fire department into their rate structures, so it would be impossible for F.M. Global to use the local fire department as a factor and remain competitive.

Lynda McIntyer, esq., General Manager and Harbor Master for the Moss Landing Harbor District. (personal communication, October 16, 2006) The Moss Landing

Harbor District (Harbor) is home to numerous businesses, industries, and of course, hundreds of boats and ships.

The Harbor's insurance company visits the Harbor every few years and assesses hazards and risks and charges accordingly. Ms. McIntyre is interested in developing a fire plan with the help of the Fire District in an effort to affect their fire insurance rates, however her insurance agent has stated their insurance is based on their hazards and risks. The local fire department is not factored into their rating system other than they acknowledge it is a paid department.

Though ISO discourages the use of their information for fire department planning, Straw (2004) encouraged the improvement of a community's PPC to decrease insurance rates. Calando (2000) suggested that achieving an improved ISO grade was extremely important because it improved morale of the firefighters and in achieving the grade; it brought them a sense of ownership. Caliendo also established that the ISO could not determine how much, if any, insurance savings would be realized by an improvement in the fire department grade. He found it surprising that the ISO was not designed to improve delivery of service by the fire department.

Clarence C. Monday (2002) looked to the ISO to improve the quality of life in his Virginia community. He further discovered that any ISO class below five gets roughly the same rates from insurance companies that subscribe to ISO.

The several insurance companies contacted in Monterey County corroborated this fact. State Farm and Western Mutual both indicated that what mattered most was the resident's proximity to a fire station. Location of the house to wildland fuels, slope and

construction features mattered more than the capabilities of the fire agency. (B. Tiet, personal communication, September 26, 2006)

For large industries that have the wherewithal to hire a risk management firm for insurance, the benefit is non-existent. The fire department's capabilities are not factored into the cost of insurance (F. O'Connell, personal communication, August 28, 2006).

ISO developed an insurance program for residential areas with wildland called Fireline that predicts the risk to residences in UWI areas based on wildland fire factors which was proven to be 95% accurate during the 2003 fires in Southern California. (ISO, 2004)

Emerson (n.d.) concluded that the savings in insurance, though substantial, would not be enough to provide for changes in his fire department in Tunica County, Tennessee. Having a poor ISO rating has a negative impact on the community economically because of the millions of dollars spent on higher insurance premiums. However, there is no correlation between higher fire department budgets and lower ISO ratings. Maximum savings in insurance occur below a grade of ISO 4 (Cannon, 2005). Fire chiefs overwhelmingly agree that using ISO's PPC program as a basis for planning is a good idea (Crawford, 2006). Strawderman (2001) recommended not using the ISO grading schedule as the only planning tool.

Buchanan (1998) studied the differences between using the ISO as fire department planning tool and utilizing a national accreditation process. He emphasized that ISO and many others discourage the use of ISO as a fire department planning too. He reminds that it is an insurance company tool not a fire department tool. Second, he

notes that there are at least some economic benefits from achieving an improved PPC, but those benefits are not tangible with accreditation.

State Farm agent, Eric Silvers (personal communication, September 8, 2006) stated that fire losses are actually not a very significant portion of the losses that drive homeowner's insurance rates. Burglaries, thefts, wind and water account for most of the claims he deals with on a daily basis. Fire damage is relatively rare. Eric confirmed that State Farm began using a different method than ISO in 2001. Only a portion of a homeowner's insurance premium is specifically to cover fire.

City managers are generally in favor of responding to changes in establish insurance premiums by increasing emphasis on prevention and bolstering the fire department's capabilities. (D. Mora, personal communication, October 11, 2006)

In summary, insurance companies use similar methods to establish the cost of insurance in a given area. Many insurers still utilize ISO but others have moved to a zip-code system that determines a premium based on the history of loss in that area. All insurers require a property to be within at least five miles of a fire station. There is economic savings in a PPC improving down to six or lower, but once at that level, there is little likelihood that insurance rates will drop further with further improvements.

Though it was never recommended to use ISO as a planning tool, many fire departments do use it as such, and fire chiefs generally consider it a good idea. At least one City Manager, who presumably has a big-picture view of the community, and who has considerable influence in determining the fire department budget, believes that changes in insurance should result in changes in fire operations. City managers tend to be proponents of sprinkler systems for businesses.

**PROCEDURES**

Using the Internet, the on-line catalogue at the National Fire Academy's Learning Resource Center in Emmitsburg, Maryland was searched for literature using the terms: Insurance Services Office; Grading Schedule; Fire Insurance; Performance Evaluation; Research; Public Protection Classification System; and Cost Effectiveness and made an interlibrary loan request through the Monterey County Library system.

F.M. Global, the risk management consultant for the Moss Landing Power Plant, was contacted via telephone to find someone who could provide information on how they determined the costs of insurance for the Moss Landing Power Plant. What, if any, relationship there was between ISO, the North County Fire District, and the risk analysis system that they use for determining rates.

The Moss Landing Harbor District was contacted to determine how insurance costs are calculated by their insurance provider.

A search for insurance rate-setting processes was done by contacting insurance companies. A search was conducted for insurance companies in the North Monterey County by searching the phone book. Quotes for insurance were solicited from internet sources by using the Google search engine with the terms: Castroville Homeowner Insurance and Castroville Business Insurance.

A prototype property was created with a specific address and features (Appendix A), and this prototype was used as the example to give to all the insurance representatives as the basis for developing quotes. Variables such as distance from a fire station or fire

hydrant, the PPC of the fire agency, etc, fire alarms were allowed. Each insurance representative was asked what factors could result in lower insurance rates,

The City Manager for the City of Salinas was interviewed for his insights on the ISO and its relationship to decisions made for the fire protection in the City.

Limitations:

Many insurance agents were reluctant or incapable of answering detailed questions regarding how their insurance rates are set. Price quotes for insurance were determined not to be relevant to the research, but rather the factors that went into establishing insurance prices were the focus.

Elected officials declined to respond to a questionnaire because as one city council member stated, it was not their place to do so. They referred it to their City Managers. Most City Managers referred the questionnaire to their fire chiefs. Ultimately, only one City Managers responded to requests for an interview. A questionnaire was submitted to all city managers in Monterey County. Only three were returned and they had been completed by the fire department of that city.

Terms:

ISO - Insurance Service Office. A non-profit agency that assesses the hazards and risks within a community, and provides that information to subscribing insurers.

PPC – Public Protection Classification: A numerical grade assigned to a fire department based on its capabilities based on water supply, staffing, equipment, stations, dispatch, training, etc. A PPC of 10 is essentially no fire service and one is the best possible fire service available. PPC and ISO grade are used synonymously in this study.

Urban Wildland Interface – Areas with a high potential and/or history of wildfire in which homes have been built. The UWI has evolved in recent years to be a particular hazard for insurance companies and fire departments.

**RESULTS**

To answer the first question, the ISO is an organization that serves as a resource and consultant service to the insurance industry in 48 of the 50 states in America. Insurance companies subscribe to receive hazard and risk information for specific communities (O'Connell, 1998). It's history dates back to 1889 when the National Board of Fire Underwriters (NBFU) moved from their practice of basing insurance rates solely on the risks of a business and began insisting on construction improvements, greater care in fire prevention, and the introduction of fire protection systems for the prevention and extinguishment of fires. The inducement for a business or community was that it would receive lower insurance rates if it complied, and risked losing coverage if it did not (Todd, 1966). The NBFU created a formalized grading schedule for municipal fire protection in 1916 and consolidated this grading system under one organization in 1971 with the formation of the ISO (O'Connell, 1998).

Methods for determining insurance rates depend on the type of occupancy. For residential properties, the biggest change began when State Farm, the nation's largest insurer of residential properties, stopped using the ISO and developed their own system of determining rates using the five digit zip code to determine their prior claim experience in 2000. (Kang, 2006)

The rules changed again in 2003 when it was ISO required that every residence be within five miles of a fire station in order to receive any credit for being within a fire department jurisdiction. (Stevens, 2004)

Western Mutual Insurance Group, representative, Irma Garcia stated they base their premiums on losses and risks within a given zip code area and the distance from a staffed fire station. Premiums are lowest if a home is within 3 miles of a fire station. (personal communication, September 26, 2006)

Dillenback & LoManto, insurance brokers in Monterey, stated that they use the ISO information to establish insurance rates for the companies that they represent. (personal communication, March, 2006,).

Farmer's Insurance of Marina, California stated they use the ISO system and determine premiums based on the grade of the local fire service and the distance from the fire station (B. Tiet, personal communication, September 26, 2006). A house greater than five miles would not be eligible for insurance unless they mitigated the distance with a water system, home sprinklers, or fire preventive construction. Business insurance is very similar for the building, but not for the business itself. Farmer's uses ISO to determine commercial and business insurance, but as separate entities. They would insure the building for its replacement cost and factor in mitigations. They would insure the business in that building based on the contents and type of occupancy.

Dillenback & LoManto Insurance Agency, Inc. stated that they use ISO to assess risk and establish rates for insurance (personal communication, March 2006). Homes must be within five miles of a fire station. Home sprinklers receive no additional credit because most of the big risk is from wildland fires.

Frank O'Connell is an engineer for F.M. Global a company that provides risk management and insurance services to the single greatest valued property in Monterey County, the Moss Landing Power Plant (MLPP). O'Connell (personal communication, August 28, 2006) stated that MLPP is the highest capacity Power Plant in the State of California capable of generating 6500 megawatts of electricity. MLPP is owned by a large investment organization. Because it is a large corporation it is able to shop for insurance services aggressively thus whittling their costs to the bone before signing a contract.

O'Connell also stated that F.M. Global is a Mutual Insurance Corporation, meaning it is not a publicly traded company so its customers own it. Being a mutual insurance company takes the greed factor out of risk assessment. F.M. Global uses performance-based standards to assess insurance risk. These are different than the National Fire Protection Association (NFPA) consensus based standards, which O'Connell describes as the lowest possible that would be accepted by all.

He pointed out that ISO looks at Construction, Occupancy, Protection, and Exposures (COPE) in determining what risks exist. In other words, what type of building is being insured, what will be done in that building, what protection features are in place and what is nearby that might be affected by a fire in that building.

A power plant is a very high risk with a very low frequency of occurrence for problems. A very dangerous fire that occurs involves the pressurized oil that cools the bearings on the generating turbine. In tests done by F.M. Global, a pressurized oil fire at one-tenth the pressure of the MLPP almost took down their test facility.

F.M. Global assigns an engineer who looks at the specific risks of a client recommends or requires mitigations and determines a premium based on the final risk with the hazards mitigated. They recognize that their customer will have only so much to budget toward insurance and risk mitigation. The engineer looks primarily at the reliability of the public water system. In a seismic area such as California, they will often require an onsite water supply with an independent generator and pumps. They will require automatic valves in natural gas lines that will close in an earthquake.

Caliendo (2000) suggested that achieving an improved ISO grade was extremely important because it improved morale of the firefighters and in achieving the improved grade, it brought them a sense of ownership. He also established that the ISO could not determine how much, if any, insurance savings will be realized by an improvement in the fire department grade. He found it surprising that the ISO was not designed to improve delivery of service by the fire department. Monday (2002) looked to the ISO to improve the quality of life in his Virginia community. He discovered that any ISO class below five gets roughly the same rates from insurance companies.

O'Connell (personal communication, August 28, 2006) pointed out that F.M. Global does not factor local fire department into determining insurance rates. They try to install protections and mitigations so a problem is taken care initially. He stated that their view is that by the time a fire department is called, the condition is already very bad. It will inevitably take some amount of time for the fire department to arrive and deploy. The fire department may or may not have training and education in a specific product or process, or the fire department may already be on another incident. They do not penalize a client because of the deficiencies of a local fire department. Competitors do not factor

in the local fire department in determining rates so F.M.Global could not either and still be able to compete.

Lynda McIntyer, esq., General Manager and Harbor Master for the Moss Landing Harbor District. (personal communication, October 16, 2006) stated that the Moss Landing Harbor District (Harbor) is a special district under California State law. The Harbor owns all of the property at, and contiguous to the Moss Landing Harbor. It is home to numerous businesses, industries, and of course, hundreds of boats and ships.

The Harbor has an insurance policy with National Insurance. This insurance company visits the Harbor every few years and assesses the hazard and risk and charges accordingly. The Harbor has a small fire boat that is not currently functioning. It has a standpipe system for its longest dock, but it is not tested nor rated and when used, has always separated at pipe connections.

The Harbor has not been evaluated by the Fire District, and previous Harbor administrations were not amenable to developing a relationship with the Fire District. Ms. McIntyre is interested in developing a fire plan with the help of the Fire District, however her insurance agent has stated their insurance is based on their hazards and risks. The local fire department is not factored into their rating system other than they acknowledge it's a paid department.

ISO developed an insurance program for residential areas with wildland called Fireline that predicts the risk to residences in UWI areas based on wildland fire factors such as fuels, slope, construction features, etc. This program was validated by fires in Southern California in 2003 that showed a 95% or greater accuracy in predicting that residences in areas were at highest risk from wildfire. (ISO, 2004)

Given a prototypical residence in North County, seven insurance companies were asked to provide information on what factors played into establishing their rates. Even with companies that subscribed to ISO, the insurance rates were not greatly affected by the PPC of the fire district. There was no change based on proximity to fire hydrants or even residential sprinkler systems. Small changes were based on the location of the residence with regard to wildland fuels, the features of the residence (type of roof, deck etc.) and the presence of smoke detectors and extinguishers. The rate would be affected by distance from a fire station and whether the fire agency was paid or volunteer. (see appendix B)

Cannon (2005) wrote that having a poor ISO rating has a negative impact on the community economically because millions of dollars are spent on higher insurance premiums. He further noted that there is no correlation between higher fire department budgets and lower ISO ratings. Maximum savings in insurance occur below a grade of ISO 4.

Crawford (2006) concluded that fire chiefs overwhelmingly agree that using ISO's PPC program as a basis for planning is a good idea. Strawderman (2001) recommended that the ISO grading schedule should not be used as a department's only planning tool.

Salinas City Manager, Dave Mora (personal communication, October 11, 2006) expressed that he felt that ISO was largely irrelevant. Commercial and residential sprinklers are the main front for fire protection. If a building catches fire, the life safety should be provided for – everyone is out of the building and safe. After that, the fire

should be kept from spreading and the building replaced, probably better than it was originally.

State Farm agent, Eric Silvers (personal communication, September 8, 2006) stated that fire losses are actually not a very significant portion of the losses that drive homeowner's insurance rates. Burglaries, thefts, wind and water account for most of the claims he deals with on a daily basis. Fire damage is relatively rare. Eric confirmed that State Farm began using a different method than ISO in 2001. Only a portion of a homeowner's insurance premium is specifically to cover fire.

## DISCUSSION

The current ISO process used by insurance companies varies. Although ISO is still used to determine insurance rates, but there is a wide variety of ways that the information they provide is applied. There seems to be a range of methods used by insurance companies to establish the cost of premiums. Farmers and Western Mutual and All State still subscribe to ISO but they apply the information differently. State Farm, Western Mutual and others have moved to a system that establishes the cost based on the amount of losses incurred in a given zip code area. Dillenback & LoManto (personal communication, March, 2006) stated that they use the ISO with the companies that they represent. O'Connell (F. O'Connell, personal communication, August 28, 2006) stated that F.M. Global and other larger risk management companies do not use ISO information but instead measure the hazard and assess the risk themselves.

When insurance companies use methods other than ISO, the impact of fire services upon rates is negligible. Quotes obtained for a prototypical residence were based

on type of construction, location and other factors, but not the capabilities of the fire department regardless if the company used ISO or not. Insurers repeatedly stated that PPC numbers from one to six were pretty much the same as far as they were concerned. Rates climbed the farther away from a fire station a residence was. A paid department generated lower rates than a volunteer department as far as insurance went. (NetQuote, et. al. personal communication, October 11, 2006) It certainly appears that a direct relationship between fire department capabilities as measured by ISO grade and decreased insurance rates is a myth, at least in part.

For the very large corporate industry, the fire department is not a factor in determining rates. It is assumed that by the time the fire department is called, the place is a total loss. (F. O'Connell, personal communication, August 28, 2006)

ISO is frequently used in determining commercial insurance rates for the building and for the business that occupies that building. However, there is little difference in insurance costs between a PPC of five and a one, so there is not a valid economic motive for taxpayers to want to pay to improve their fire department once it has achieved a PPC below five. Installing a sprinkler system has more of an impact on commercial insurance rates than the capabilities of the local fire department. (B. Tiet, personal communication, September 26, 2006)

Establishing business insurance rates is very similar process from company to company for the building, but not for the business itself. Farmer's uses ISO to determine commercial and business insurance, but as separate entities. They would insure the building for its replacement cost and factor in mitigations. They would insure the

business in that building based on the contents and type of occupancy. (B. Tiet personal communication September 26, 2006)

There is still at least some economic benefit in residing close to a fire station, especially in wildfire prone areas. The ISO rules changed in 2003 that required residents to be within five miles of a fire station to receive credit for being covered. (Stevens, 2004) ISO introduced a program called Fireline to pre-determine the risk to residences from wildland fires and thus establish rates or mitigation requirements. (ISO Properties Inc., 2004)

Western Mutual gives a discount to residents within three miles of a fire station. Farmers stated they would need mitigations to be implemented to a residence beyond five miles from a station in order to write an insurance policy. (B.Tiet personal communication September 26, 2006)

At least some in the fire service have long recognized that establishing an economic basis for their fire department is tough. That apparently is why the ISO says it is not a planning tool, but at the same time encourages departments to improve their PPC. The PPC is the only economic nail on which to hang the fire helmet. (Straw, 2004) All the other mechanisms for assessing the capability of the fire department have little or no economic basis. Even without decreased insurance rates firefighter morale and other altruistic reasons are the motivation for improving a PPC or achieving accreditation (Caliendo, 2000). Monday (2002) is likely correct in saying that an improved fire department will improve the quality of life in a community but the metrics of such a statement will be difficult to prove. That is not to suggest it is not worth the research.

Having a poor ISO rating has a negative impact on the community economically because millions of dollars are spent on higher insurance premiums. There is no correlation between higher fire department budgets and lower ISO ratings. Maximum savings in insurance occur below a PPC of Four (Cannon 2005). Fire chiefs overwhelmingly agree that using ISO's PPC program as a basis for planning is a good idea (Crawford, 2006). Strawderman (2001) recommended that the ISO grading schedule should not be used as the only planning tool.

State Farm agent, Eric Silvers (personal communication, September 8, 2006) stated that fire losses are actually not a very significant portion of the losses that drive homeowner's insurance rates. Burglaries, thefts, wind and water account for most of the claims he deals with on a daily basis. Fire damage is relatively rare. Eric confirmed that State Farm began using a different method than ISO in 2001. Only a portion of a homeowner's insurance premium is specifically for covering fire losses. Their primarily concerned with burglaries, storm damage, and other losses other than fire. He believes that damage from fire is a relatively low occurrence in his service area.

At least one City manager was in favor of responding to changes in insurance premiums by increasing emphasis on prevention and bolstering the fire department's capabilities. (D. Mora, personal communication, October 11, 2006)

So in summary, it appears that ISO is still being applied, but not stringently so. Insurance companies across the board believe that proximity to a paid fire station is of utmost importance. A city manager believes sprinkler systems are most effective in controlling fires. One insurance broker believes that fire is a relatively low risk for his area. Most insurance representatives believe that the greater risk is from building in UWI

zones. Businesses and industry are not likely to factor in the capabilities of a local fire department because it cannot be assumed that the local fire department will be affective regardless if they have a PPC of 5 or 1.

Although it has long been officially recommended that ISO not be used as a planning tool for fire departments, it is unofficially endorsed and encouraged. Increasing fire department morale, decreasing insurance rates and other reasons are given for achieving an improved PPC. In summary, it appears there is little valid reason for improving beyond a 5.

## RECOMMENDATIONS

It is recommended that the North County Fire District investigate and consider other planning strategies instead of using ISO. It is clear that with a PPC of Four, the District is likely saving as much money as is possible for its constituents in insurance premiums. It is unlikely tha investments in lowering its PPC will produce significant direct economic savings in insurance rates. As Dave Mora (personal communication, October 11, 2006) said, the first priority of the fire department is life safety. With that as the number one priority, the cost of insurance will be less relevant and the focus of the fire department may change.

If life is indeed the greater priority over property, North County Fire District should look at its highest life loss problems. Currently, (and not identified by this study), vehicle accidents account for over a dozen deaths in the District's service area. Additional focus on this problem may be an effective option. Investment in equipment, training, personnel to improve the mortality of accident victims may be beneficial.

Investment to increase prevention efforts for fire, illness and injury may also produce measurable results.

North County Fire District should look into having an effect on the fire and safety problem with the insurance concepts in mind, but without regard to insurance premium savings. The benefits of the mitigations for which insurers give discounts are the same prevention tools that the District can and should be promoting. Fire preventive construction features, alarms, extinguishers, smoke detectors and decreasing the fuels surrounding a structure are the same things that fire departments know decrease fire losses. North County Fire District should look into collaborating with insurers to combine the fire prevention message, especially in UWI areas.

North County Fire District covers a tremendous amount of territory with three stations. Although it may be fiscally and physically impossible to cover all residents and businesses with a fire station within five miles, this may be one goal worth pursuing.

Accreditation should be explored to determine what if any benefits it could bring to the economy of the community. It is agreed that morale is important and meeting identified goals is good for the fire department, but it is not reasonable to assume that the citizens would want to pay for excesses if they are not warranted.

Additional research should be conducted to identify a formula to determine an economic benefit for a fire agency. Fire agencies, though perhaps erroneously, have traditionally pointed to the ISO as an economic reason for being and as the rationale for improvements in that the citizens would receive an economic rebate in the form of decreased insurance rates. Without that, there is little tangible evidence for a fire

department to improve its level of service.  North County Fire District is at that point now.

**REFERENCES**

Buchanan, J. (1998) *Evaluating the ISO grading system and the fire and emergency services accreditation program*. (*Applied Research Project No. 28914* ) Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Cannon, Bobby Jr. (2005) *An Evaluation of the Fayette County Fire Department's State of Readiness in Lowering the ISO PPC Rates in Fayette County (Applied Research Project No. 38215)* Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Caliendo, S. (2000) *ISO Classification (Applied Research Project No. 14611)* Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Crawford, D.F. (2006) *Determining Appropriate Locations for Additional Fire Stations in Rural Fire Protection Districts,* (*Applied Research Project No*.38662) Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Emerson, R.D. (no date) *A Study to Determine if the Cost of a County Fire Department Can Be Offset by Insurance Savings in Tuica County, (Applied Research Project No. 37488)* Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

ISO Properties, February 2004, (no author noted) *Pinpointing Insured Losses in the Southern California Wildfires of 2003*, ISO Publications, Jersey City New Jersey.

O'Connell, T.J (1998) *An Evaluation of Fire Service Accreditation and ISO Grading Processes as Organizational Service Quality Tools* (*Applied Research Project No. 29047*) Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Kang, B. (2006, July). State Farm abandons ISO grading schedule: Fire chiefs wonder, "What now?" Retrieved October 12, 2006, from Firewise Web site: http://www.firewise.org

Monday, C. (2002) *Integration of the ISO Rating Schedule Into the Fire Department's Strategic Plan, (Applied Research Project No. 34650)* Emitsburg, MD; National Fire Academy, Executive Fire Officer Program

Straw, E. F. (2004, June). How to improve your ISO classification. *Firehouse*, 70-71.

Stevens, L. (2004). Your next ISO rating. Retrieved October 12, 2006, from Southern fire Web site: http:www.southernfire.com/askiso.html.

Strawderman,S. (2001) *Evaluating ISO improvements for Prince William County, VA Fire and Rescue System*, (*Applied Research Project No. 32502*) Emmitsburg, MD; National Fire Academy, Executive Fire Officer Program

Todd, A.L. (1966). *A spark lighted in Portland - The record of the National Board of Fire Underwrithers*. New York, NY: McGraw Hill.

# Appendix A

Prototype Example Property

- 10951 San Miguel Canyon Road
- Salinas, California 93907
- Single-story ranch style house built in 1980
- Wood frame construction
- Stucco Siding
- Composition Shingle Roof
- In Urban Wildland Interface area (UWI) but 100 foot area cleared around it.
- 1500 Square Feet
- 3 bedrooms
- 2 bathrooms
- 2 car garage
- Forced air gas heat
- Central air conditioning
- Non-covered or enclosed deck/patio
- Smoke alarms in all rooms
- Fire extinguishers in place at front and rear exits

# Appendix B

**Following is a summary of information received from insurance agents representing various insurance companies accessed in the study.**

**Dillenback & LoManto Insurance Agency, Inc.**
533 Hartnell Street
Monterey CA 93940
(Personal Communication with Josh and Anthony on March 22, 2006)

- ISO used to determine Rates
- Must be within five miles of a fire station
- Discounts for fire/burglary alarms
- Discount for gated community
- Fuels, slope, wildland interface important, but only if customer mentions it.

**Farmers Insurance of Marina California – Benny Tiet, Agent.**
**265 Reservation Road**
**Marina, CA 93933**

- ISO used to determine Rates for residences
- Commercial properties are insured by building and by business.
    - Sprinklers are worth a significant discount.
    - Type of occupancy makes a big difference.
- Fire Department PPC 5 and below is same factor for determining rates for residential or commercial.
- Residential properties must be within five miles of a fire station.
    - Discounts for fire/burglary alarms
    - Discount for gated community
    - Insurance is higher for wood roofs, siding, decks, swimming pools.
    - Fireline program from ISO is utilized in rural areas.
- Big difference between paid and volunteer fire departments. Volunteer departments are considered, “high risk”.

**Western Mutual Insurance Company– Irma Garcia**
**CA License 0D93602**
**1-877-wmu-tual**
**No address available**
ISO is not used to determine rates for residences or commercial occupancies.

- Residential properties receive best rates if they are within 3 miles of a fire station.
- Residences covered by a paid fire department receive the best rates. Volunteer fire departments are considered higher risk.
- Discounts are given for fire alarms, burglary alarms, and fire extinguishers. No more than a total of 5% decrease.
- The protype property that I used would not be insurable by their company as it is at or near the 3 mile limit!

**The Corinth Company – Caludia Vallin**
**975 Fair Oaks Avenue**
**Pasedena, CA 91105**

- The use ISO depending on the type of occupancy.
- It is not used much for residential.
  - Businesses and commercial properties are calculated using ISO.
  - PPC grades below Five receive the same rate.
- A properties must be within 3 to five miles of a fire station depending on access, UWI, and other mitigations in place.
  - Type of construction and fuel clearance is most important.
  - Extinguishers, alarm systems, gated communities, count towards small discounts.
  - The type of roof doesn't matter, the age of roof does.

**State Farm Insurance – Eric Silvers**
**425 N. Ninth Street**
**Yakima, Washington**

- In 2000, State Farm switched to a method of assessing insurance premiums based on the losses incurred within the area of the residence.
- Construction features, alarms, detectors, and occupying the home during the day will result in small discounts.
- Losses incurred within a zip-code zone affect insurance premiums for that zone. A zip-code with tremendous losses (for any reason) will pay higher insurance than a zone with few losses. An area with mixed uses, e.g. a downtown area with offices, warehouses and residents, will pay a higher insurance premium if there are large losses in the commercial district.
- Crime and storms account for the largest portion of the losses in Mr. Silver's service area. Fire accounts for a tiny portion of the losses he has records of.

**Answer Financial Inc. (Net Quote) – Marissa Rivas**
**mrivas@answerfinancial.com**

- The PPC class is used in two halves. If a fire department is volunteer the lowest they could be counted for is a PPC of Six. PPC of Five and lower is a paid or paid/volunteer combination and counts pretty much the same for residential.
- Commercial occupancies and the businesses in them are dependent more on the ISO process. However, sprinklers, distance to the fire station, proximity of fire hydrants, alarms, building contruction, type of occupancy all matter more in determining rates. If there's a question, the insurance company will likely do a site specific evaluation to determine the insurance costs. Mitigations may be required to reduce ongoing insurance costs (and risk).

**All State – Robert Feldman**
**License # oc48551**
**888-983-6400**

- ISO is used for routine commercial structures and business rates.
- Commercial Sprinkler systems are cause for significant discounts.
- If a business is large or high risk, they will do their own risk assessment.
- ISO is not used to determine residential rates.
- Paid fire departments are better for rates than volunteers.
- "ISO is likely to be drastically changed or eliminated within the next five years."
- Discounts