



*Assisting Communities  
With Their ISO Rating*

**Mike Pietsch, P.E. Consulting Services, Inc.**

3101 S. Country Club Rd.  
Garland, TX 75043-1311  
972.271.3292 Phone  
214.728.6507 Cell  
972.840.6665 Fax  
michaelpietsch@tx.rr.com

**A Report From**

**MIKE PIETSCH, P.E. CONSULTING SERVICES, INC.**

**To**

**WILSON COUNTY ESD #2**

**Improvement in ISO  
Public Protection Classification  
(Updated FSRS)  
Areas Afforded Fire Hydrant Protection**

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***Submitted by:***

***W. Michael Pietsch, P.E.  
Civil Engineer***

***Mike Pietsch, P.E. Consulting Services, Inc.  
3101 S. Country Club Rd.  
Garland, TX 75043-1311  
Phone: 972-271-3292 Fax: 972-840-6665  
E-Mail: [michaelpietsch@tx.rr.com](mailto:michaelpietsch@tx.rr.com)***

***Fire Suppression Rating Study for Wilson County ESD #2 – Updated FSRS  
(Areas Afforded fire Hydrant Protection)***

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**What is Insurance Services Office, Inc. (ISO)?**

To help establish appropriate fire insurance premiums for residential and commercial properties, insurance companies need reliable, up-to-date information about a municipality's fire protection services. Insurance Services Office, Inc. (ISO) is the principal (and most precise) provider of this information through the Public Protection Classification (RATING) program.

**What is the Public Protection Classification (Rating) Program?**

ISO collects information on a community's public fire protection and analyzes the data using their Fire Suppression Rating Schedule (FSRS). ISO then assigns a Public Protection Classification from 1 to 10. Class 1 represents the best public protection while Class 10 indicates less than the minimum recognized protection.

By classifying a community's ability to extinguish or control a structural fire, ISO assists communities in evaluating their public fire protection infrastructure. The program provides an objective, countrywide standard that assists communities in planning and budgeting for facilities, equipment, and training. By securing lower fire insurance premiums for communities with better public protection, the ISO rating program provides incentives and rewards for communities that choose to improve their firefighting services.

ISO has extensive information on more than 68,000 fire-response jurisdictions.

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## **Explanation of the Updated FSRS**

ISO evaluates municipal fire protection efforts in communities throughout the United States by applying the Fire Suppression Rating Schedule (FSRS). The Updated FSRS evaluates key elements of a community's fire defense infrastructure, which include:

**Fire Service Communications** – Approximately 9% of the grading point total is based on the ability of the Fire Service Communications Center serving the community. 911 telephone systems, adequacy of telephone lines, operator supervision and staffing, along with dispatch hardware and software systems are the major items considered in the Updated FSRS.

**Fire Department** - 47% percent of the grading point total is based on the infrastructure of the fire department. The Updated FSRS considers adequacy of staffing levels for existing apparatus, adequacy of equipment on the apparatus, evaluation of training, existence of automatic aid, geographic distribution of fire companies, operational considerations, and NIMS compliance for company officers.

**Water Supply** - 38% percent of the grading point total is based on the community's water supply, distribution system, and proximity of fire hydrants to existing structures. This majority of the credit within this item is an evaluation of the amount of water available throughout the community, in volume and pressure, compared to the fire demand. A major change in this section based on the Updated FSRS is the fact that flow tests are required throughout the distribution system annually (around 3 tests per year for the response area of the Eagle Creek Emergency Services).

**Community Risk Reduction (Fire Safety Control)** – 6% of the grading point total is based on the efforts of the Fire Marshal's Office serving the community; in conjunction with the adopted fire code. Fire prevention code enforcement, fire investigations, and public fire safety education are the 3 components evaluated within this section of the grading point total which develops the ISO rating.

**Texas Exception to the FSRS:** Unique to the State of Texas is a document titled the Texas Exception (formally referred to as the CTT section of the Texas Addendum). This document assigns credit to communities that allowed a certain percentage of their firefighters (paid or volunteer) to attend Fireman's Training School (specific to the weeklong spring or summer school at Texas A&M University) and volunteer firefighters that have obtained at least the equivalent of the basic firefighter certification.

Receiving this credit are volunteer firefighters certified through either:

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- The State Firemen's and Fire Marshal's Association of Texas as basic, intermediate, or advanced firefighter (or their equivalent); however this excludes the introductory certification.

Or

- The Texas Commission on Fire Protection as a volunteer firefighter

In addition communities with a certain percentage of their in-service engine companies equipped with compressed air foam can receive an additional 1.00 point assigned to the grading point total which develops the ISO rating.

Mathematically, this section could add an additional 5.56 points to a grading point total which develops the ISO rating. Normally 4 to 5 additional grading points are achieved via the Texas Exception for communities with volunteer or combination fire departments. A career fire department normally achieves between 1 and 2 additional points assigned to their grading point total as a result of the Texas Exception.

## **Overview of the Updated FSRS**

The current FSRS (adopted in Texas on March 1, 2015) has been revised to: Update existing provisions from the current 2003 edition of the FSRS, change the weighing of the specific items within the current FSRS, and add new sections that recognize the community's efforts to reduce fire losses through Fire Prevention, Fire Investigations, and Public Fire Safety Education. Specific to the State of Texas this credit, along with significant additional credits for firefighter training and compressed air foam, has always existed within the ISO rate making process.

The updated rating document will slightly reduce the available credit to a community's grading point total which develops the ISO rating for most communities in the State of Texas with a volunteer or combination fire department. For communities with a career fire department and a progressive Fire Marshal's Office the recently updated ISO rating document should be point neutral.

The 3 core categories in the Updated FSRS and the total credit points assigned to each of the 3 major categories remain unchanged. However, within these 3 categories the contents of the individual items comprising each category (Fire Service Communications, Fire Department, and Water Supply) have had their weighting adjusted.

For communities outside Texas a new category titled "Community Risk Reduction", which has always existed in Texas, has been added to provide up to 5.50 additional points (in Texas 11.06 additional grading points have always been available through the "Texas Addendum" – sometimes referred to as the "Texas Exception").

Due to the vigilance of the Texas State Fire Marshal's Office and the ISO Committee of the Texas Fire Chiefs Association (negotiations have been ongoing since January of 2009) the new "Community Risk Reduction" section of "Updated FSRS" in conjunction with the Texas Exception to the FSRS will still have 11.06 additional grading points available to the communities in Texas

## **The Effect of PPC Code on Fire Insurance Premiums**

All insurance companies (whether they admit or not) utilize ISO's PPC classes in establishing premiums for both commercial and residential property policies in the State of Texas. Here's how it works:

### **PPC and Commercial Fire Insurance Premiums**

A community's investment in their fire defense infrastructure is a proven and reliable predictor of future fire losses. Statistical data on insurance losses demonstrates the relationship between a community's ability to mitigate fire loss, as measured by the ISO PPC program, and reduced property destruction due to fire. Therefore insurance companies use the ISO PPC program to assist in establishing annual premiums for both commercial and residential properties. In general, assuming all endorsements and perils remain constant, the price for insurance in a community with a lower (better) ISO PPC is less than in a community with higher (worse) ISO PPC.

Insurers determine insurance premiums for commercial properties after analyzing size, construction type, occupancy, protection (such as fire extinguishers and automatic sprinklers), and exposure to adjacent structures. For individual properties, either class rating or specific rating applies. In class rating, the insurer develops rates for similar types – or classes – of buildings, such as small churches, schools, or motels.

Specific rating includes an on-site survey and analysis of conditions at the particular property to determine the premium rate. Insurers use specific rating for buildings protected by automatic sprinklers, buildings with specific hazards or processes, or other properties that do not meet the criteria for class rating.

Both class rating and specific rating consider the Public Protection Classification at the property. Insurers develop their rating systems in order that the lower (better) the PPC at a given commercial property, the lower the insurance rate. In addition a lower (better) PPC has been shown to be an excellent economic development tool along with positively affecting a community's bond rating.

## **ISO's Methodology**

A community may request an ISO survey anytime they wish. At that time an ISO Field Representative will be assigned the survey. He will contact the community and set a time convenient to both the community and ISO. He will analyze the community's fire defenses as outlined under the "Explanation of the FSRS".

An extensive amount of support data will be required to verify answers to specific questions that are utilized to analyze the three major items that comprise a community's grading point total. When all questions are answered and the support data is properly formatted the Field Representative will return to his office and complete the grading. When the grading is complete he submits it for review. After the review is complete the grading is then submitted to the community for their review. If the community feels all grading items were analyzed fairly the grading is sent to the State Fire Marshal's Office for their approval.

Once the State Fire Marshal's Office approves the grading the community is notified via a letter to the City Manager or Mayor of their new rating. This entire process normally takes around 1 year.

## **Explanation of this Study for Wilson County ESD #2**

This report will analyze the ISO rating (Public Protection Classification - PPC) based on the requirements of the new updated ISO rating document with the fire defense infrastructure, as existed on December 16, 2015, for Wilson County ESD #2 and then develop a grading scenario that should result if an ISO survey commenced. Based on the grading scenario developed by this report a list of suggested improvements will be demonstrated, which if implemented will assist Wilson County ESD #2 in improving the ISO rating for all areas within the fire response boundary afforded fire hydrant protection.

Please note that throughout this report the words ISO Rating, ISO Classification, PPC, Subzone (used only by State Farm), Insurance Number, and Class are synonyms. I use these different references to the ISO rating throughout my reports so everyone reading the report will understand that the ISO rating is referred to in many ways.

The grading scenario will require that the Eagle Creek Emergency Services maintain 2 engine companies and 1 ladder/service (rescue) truck company in-service deployed from 1 fire station. Throughout this report the word “company” implies both the apparatus and the required staffing for the apparatus. 2 additional fire stations are required to eliminate areas which will be rated an ISO PPC 10, but will not be a requirement to improve the grading point total which develops the ISO PPC based on ISO’s survey in January of this year.

Wilson County ESD #2 presently has the ISO equivalent of 1 engine company and 0.13 of a ladder/service (rescue) truck company available to respond to all first alarm structure fires deployed from 1 fire station. It is imperative that Wilson County ESD #2 provide the Eagle Creek Emergency Services with a second engine company; if the mission of Wilson County ESD #2 is to improve the ISO PPC.

Water supply must provide at least 2000-gpm for 2-hours while delivering a maximum daily consumption rate which has occurred during the last 3-years. Throughout the community the distribution system capacity and fire hydrant placement must meet the needed fire flow demand as determined by the ISO rating document. In addition flow tests must be performed annually throughout the distribution system. This is not every hydrant flow tested annually; but a random sample (around 3 flow tests per year for a response boundary the size of that served by Wilson County ESD #2 – in lieu of actual flow testing hydraulic water modeling is creditable).

The communications center serving Wilson County ESD #2 will be analyzed based on NFPA 1221; as interpreted by ISO.

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The Office of the Fire Marshal will be reviewed based on the updated rating document within the category of “Community Risk Reduction”.

The Texas Exception will review volunteer firefighters that have attained a certain level of firefighter certification and/or attended the weeklong spring or summer session of Fireman’s Training School at Texas A&M University. Paid firefighters receive the identical credit for attending the weeklong spring or summer session of Fireman’s Training School at Texas A&M University. In addition the Texas Exception assigns additional credits for fire departments that choose to use compressed air foam.

At the conclusion of this scenario a list of suggested improvements will be presented which, if implemented, will improve the ISO Public Protection Classification (PPC) for Wilson County ESD #2 based on the “Updated FSRS” for areas afforded fire hydrant protection.

## **Executive Summary**

The key item, from an ISO rating perspective, for a fire response area such as that served by Wilson County ESD #2, is to make sure all built-upon areas afforded fire hydrant protection are within 5-road miles of a fire station housing an engine company. Built upon areas not afforded fire hydrant protection should have a fire station within 5-road miles housing at least a tanker (a minimal amount of equipment is required to on the tanker to receive ISO rate credit).

The reason the 5-road mile threshold is so critical: Any structure outside 5-road miles of a fire station housing creditable (by ISO requirements) apparatus is rated an ISO 10 (no recognized fire protection) regardless of the water supply infrastructure. Currently several insurance companies will not renew policies for class 10 areas. Even properties (residential or commercial) within class 10 areas that can receive insurance pay the highest possible rate. To eliminate the ISO PPC 10 areas 2 additional fire stations are required each deploying an engine company.

Based on information obtained during my recent survey of the emergency response area served by Wilson County ESD #2 the Eagle Creek Emergency Services will be required by the updated ISO rating document to have a minimum of 2 engine companies and 1 ladder/service (rescue) truck company in-service available to respond to structural alarms of fire deployed from at least 1 fire station. Throughout this report the word “company” implies both apparatus and staffing. 1 reserve engine and 1 reserve ladder/service (rescue) truck are also required. However, based on the updated ISO rating document recently adopted in Texas reserve apparatus now receives only one-half of it’s weighting under the prior ISO rating document. For areas such as that served by Wilson County ESD #2 reserve apparatus do not carry enough weight to justify the expense of providing these additional apparatus. However, if replacement apparatus is purchased the phased out apparatus should be maintained as reserve until after an ISO survey concludes.

At present the Eagle Creek Emergency Services has the ISO equivalent of just 1 engine company and 0.13 of a ladder/service (rescue) truck company deployed from 1 fire station.

Areas of significant deficiency within the *Fire Department* section are: A fully equipped second engine company is required; but not provided, a fully equipped ladder/service (rescue) truck is required; but not provided, staffing levels are very deficient based on the requirements of the ISO rating document, an incomplete training program (the major factor is the fact that a training facility is not available within a reasonable driving distance of the response area served by Wilson County ESD #2), and the existing fire station is not of sufficient size to house the apparatus required by ISO and provide EMS.

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The *Water Supply* section demonstrates a fairly good level of compliance with the updated ISO rating document; where standard fire hydrants are available. Water supply, as compared to the fire demand (determined by the updated ISO rating document), is good throughout the areas considered within this report afforded fire hydrant protection. The inspection, maintenance, and flow testing of the fire hydrants does not meet the intent of the updated ISO rating document.

*Fire Service Communications* has 2 significant areas of deficiency based on the updated ISO rating document and NFPA 1221; as NFPA 1221 is interpreted by ISO. Monitoring for integrity is not provided for the primary dispatch method emergency power is required at the communications center and the Eagle Creek Emergency Services Fire Station. In addition the emergency power sources must be tested weekly under a load (not the entire load of the communications center or fire station) for 1 hour.

*Community Risk Reduction* is performed by the Office of the Wilson County Fire Marshal. At present a modern fire code is not adopted by a legal document and enforced throughout unincorporated Wilson County. The International Fire Code (2012 or 2015 edition) is the suggested code by ISO. The second deficiency is the fact that the Wilson County Fire Marshal's Office is not staffed to the level required by the updated ISO rating document to perform building inspections and investigate fires deemed suspicious throughout all of unincorporated Wilson County.

At present the developed areas within the primary response boundary of Wilson County ESD #2 is assigned an ISO rating of 6/9 within 5-road miles of the Eagle Creek Emergency Services Fire Station. What the 6/9 indicates is within 5-road miles of the Eagle Creek Emergency Services Fire Station and 1000-feet of a creditable fire hydrant the ISO rating is 6. Within 5-road miles of the Eagle Creek Emergency Services Fire Station yet outside 1000-feet of a creditable fire hydrant the ISO rating is 9 (next to the worst possible ISO rating). Even though it is not shown by ISO a 6/9 indicates to the insurance industry that class 10 areas may exist (areas over 5-road miles from the Eagle Creek Emergency Services Fire Station or an automatic-aid fire station). An ISO rating of 10 indicates no recognized fire protection. Several insurance companies will not write new policies or renew existing policies in class 10 areas.

This report will address improving the ISO rating of 6 and eliminating the class 10 issue. Solving the /9 issue is beyond the scope of this report.

My study indicates that the response area afforded fire hydrant protection served by Wilson County ESD #2 would sustain an ISO rating of 6 (within 5-road miles of a fire station housing an engine company and 1000-feet hose lay distance of a creditable fire hydrant), based on the **existing** fire defense infrastructure, if the

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extensive amount support data required by ISO was properly formatted and presented to the ISO Field Representative by my consulting firm. However, the grading point total which develops the ISO PPC 6 developed by this study is much nearer the threshold number of 50.00 required to attain an ISO PPC 5 than the grading point total developed by ISO in January of this year.

At present the areas within the primary response boundary of Wilson County ESD #2 afforded fire hydrant protection; yet within 5-road miles of the existing Eagle Creek Emergency Services Fire Station are assigned an ISO PPC of 6.

If an ISO rating of 5 were attained for the areas presently assigned an ISO rating of 6 the commercial property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **3 per cent** (effect of lowering the ISO rating from a 6 to a 5) and the residential property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **5 per cent** (effect of lowering the ISO rating from a 6 to a 5).

If an ISO rating of 4 were attained for the areas presently assigned an ISO rating of 6 the commercial property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **7 per cent** (effect of lowering the ISO rating from a 6 to a 4) and the residential property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **9 per cent** (effect of lowering the ISO rating from a 6 to a 4).

If an ISO rating of 3 were attained for the areas presently assigned an ISO rating of 6 the commercial property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **16 per cent** (effect of lowering the ISO rating from a 6 to a 3) and the residential property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **11 per cent** (effect of lowering the ISO rating from a 6 to a 3).

If an ISO rating of 2 were attained for the areas presently assigned an ISO rating of 6 the commercial property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **18 per cent** (effect of lowering the ISO rating from a 6 to a 2) and the residential property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **19 per cent** (effect of lowering the ISO rating from a 6 to a 2).

As pointed out in the above paragraphs an ISO rating of 3 is critical to the commercial property owners and an ISO rating of 2 is critical to the homeowners.

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If an ISO rating of 1 were attained for the areas presently assigned an ISO rating of 6 the commercial property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **20 per cent** (effect of lowering the ISO rating from a 6 to a 1) and the residential property owners within 5 road-miles of the Eagle Creek Emergency Services Fire Station and 1000 feet of a creditable fire hydrant would save a possible **20 per cent** (effect of lowering the ISO rating from a 6 to a 1).

Even though a Class 1 does not receive an appreciable reduction in insurance premiums over an ISO PPC of 2 it has been shown to be a valuable economic development tool.

As an example of the effect of an improved ISO PPC: If a homeowner's premium is \$2,000 per year and the ISO PPC improves from a 6 to a 4 resulting in a 7% reduction; the 7% reduction applies to the entire premium in Texas (not just the fire portion as it does in other States). Therefore, the homeowner would see the entire \$140 reduction in annual premium if all endorsements (perils and property value) remained the same. This information is generated and updated annually by the Texas Department of Insurance and published by the Texas State Fire Marshal's Office; not ISO or Mike Pietsch. Whereas \$140 per year does not seem like a significant amount of money over a 12-month period; consider each home in the primary response district served by Wilson County ESD #2, within a 1000-foot hose lay distance of a creditable fire hydrant and 5-road miles of a fire station housing an engine company, and extrapolate \$140 per year over the 10 to 15-year life span of an ISO rating and that amount of money is very significant to the citizens of your district.

*Presently Wilson County ESD #2 has fire response areas, which are within a 1000-foot hose lay distance of a creditable fire hydrant and 5-road miles of a Wilson County ESD #2 Fire Station, rated an ISO Class 6. If this Class 6 ISO rating improves to a 4 a 2 class (rating) improvement would result. Normally, all improvements 2 classifications or more are edited at ISO's Home Office in New Jersey (much more severe edit) not ISO's Regional Office in Austin, Texas. I know this as fact; I edited these ratings for over 11 years. It has been my experience that an improvement of 2 classifications or more must move well into the new class in order to guarantee that the community remains in that class after the review is complete.*

*I would not feel comfortable submitting a grading point total less than 63.00 to New Jersey if the response boundary served by Wilson County ESD #2 presently rated an ISO PPC 6 had the mission of an ISO rating of 4. If the mission of the response boundary served by Wilson County ESD #2 was to achieve an ISO rating of 3 the grading point total would need to exceed 73.00 respectively. The point total to exceed is 83.00 if an ISO rating of 2 is to be achieved. An ISO PPC 1 is normally not achievable for a volunteer or combination fire department.*

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## **EVALUATION OF JANUARY 2015 ISO RATING**

A recent ISO rate survey was performed in January of this year by Mr. Dale Broyles (an excellent ISO Field Representative). The survey demonstrated a grading point total of 41.37 which resulted in an ISO rating of 6 for areas within 5-road miles of the Eagle Creek Emergency Services Fire Station and a 1000-foot hose lay of a creditable fire hydrant.

After reviewing the ISO report from January of 2015 at my home all aspects of the rating are correct except water supply (40% of the grading point total), number of required engine companies (12% of the grading point total), and fire department training (9% of the grading point total).

After discussing the ISO grading point total for Wilson County ESD #2 with Mr. Broyles there was some confusion during his visit concerning the fire department training data; however, based on the fact that Mr. Broyles allowed 3.26 additional points to the training item via the Texas Exception training actually graded 4.60 out of the 9 possible points in the training item; not 1.34. There are easy and inexpensive points in this item that can be gained by properly presenting the 8 items that comprise the training section. These improvements are discussed at great length in the fire department suggested improvements section of this report.

The number of required engine companies actually benefited Wilson County ESD #2. Based on my analysis 4 engine companies would be required in Wilson County ESD #2 deployed from 4 fire stations. The reason so many additional fire stations may be required by ISO, if a future survey commences, is due to the lack of through streets. However, based on ISO's January 2015 survey (which required only 2 engine companies deployed from the single fire station) parlayed with a conversation with Mr. Broyles I used 2 engine companies as the requirement in developing my grading point total. Regardless of the number of required engine companies(2, 3, or 4); if a second engine company was placed in service from the existing fire station an ISO PPC 4 should be attainable.

The water supply section of the grading point total is incorrect. Mr. Broyles stated that the water suppliers did not cooperate during his visit and as is ISO policy the water supply data from the past survey (2007) was used. I would like to point out that during my visit the representatives serving the Oak Hills Water Supply Corporation were beyond cooperative. They were as cooperative as any water provider I have worked with over the past 42-years. Based on their cooperation the water supply section will improve by at least 10 grading points upon re-survey by ISO. The Water Supply section of the ISO rate making process will improve the ISO PPC to a 5 by itself; if the data is properly prepared by my company and presented to Mr. Broyles.

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There is no question that an ISO PPC 4 is easily attainable for Wilson County ESD #2 with the addition of a second engine company and a ladder/service (rescue) truck company to the apparatus fleet of the Eagle Creek Emergency Services.

## **Analysis of the Report**

This report will demonstrate a grading point total, based on the updated ISO rating document, which develops an ISO rating (Public Protection Classification), which should result if an ISO survey commenced for the areas afforded fire hydrant protection within 5-road miles of the Eagle Creek Emergency Services Fire Station within the primary response boundary of Wilson County ESD #2.

Based on this grading point total a list of suggested improvements is offered within this report for your consideration which would allow the primary response boundary of Wilson County ESD #2 to improve the grading point total which develops the ISO rating in order that an ISO rating of 5, 4, 3, or 2 results from a future survey. Hopefully these suggestions will coincide with Wilson County ESD #2's Master Plan and improve emergency response for all citizens served by the Eagle Creek Emergency Services.

The grading point total developed by this report, based on the existing fire defense infrastructure serving the primary response boundary of Wilson County ESD #2, is 47.81 (ISO rating of 6) using the updated ISO rating document. In order to guarantee that an ISO rating of 4 is achieved at the conclusion of a future ISO survey a grading point total of at least 63.00 should be attained. The primary response boundary of Wilson County ESD #2 was assigned an ISO rating of 6 in January of 2015 for the areas within 5-road miles of the Eagle Creek Emergency Services Fire Station and a 1000-foot hose lay of a creditable fire hydrant.

After analyzing the data assimilated to develop this report at least 1 fire station will be required, deploying at least 2 engine companies and 1 ladder/service (rescue) truck company, at the conclusion of a future ISO survey. In addition a second and third fire station (each deploying an engine company) are required to eliminate potential class 10 areas on the north and south side of the fire response boundary served by Wilson County ESD #2. These fire stations are not required to develop the point total which develops the ISO rating; only to extend the rate credit.

With the existing fire defense infrastructure afforded Wilson County ESD #2 it is very likely an ISO rating of 5 will be achieved upon re-survey by ISO. By providing a second engine and a ladder/service (rescue) truck to the Eagle Creek Emergency Services fleet of apparatus an ISO PPC 4 should be easily attained; with the possibility of an ISO PPC 3.

The suggested improvements within this report relate only to a fire insurance classification within the primary response boundary of Wilson County ESD #2. These suggestions are not for property loss prevention or life safety purposes and no life safety or property loss prevention suggestions are made.

## **Grading Scenario**

The Basic Fire Flow will be 2000-gpm. Based on the existing fire defense infrastructure serving the primary response boundary of Wilson County ESD #2 the grading point total for the areas afforded fire hydrant protection is 47.81 (ISO rating of 6) utilizing the updated ISO rating document. Please see the grading summary at the conclusion of this report for a more detailed explanation. The grading point of 47.81 will be the benchmark for improving the grading point total which develops the ISO rating and further improve the emergency response capabilities of the Eagle Creek Emergency Services.

The suggestions which follow apply only to the areas within the primary response boundary of Wilson County ESD #2 afforded fire hydrant protection:

### **General**

1. An excellent map is available which demonstrates the streets, roads, etc. (with their names legibly displayed), fire hydrants, fire stations, and fire response boundary of Wilson County ESD #2. Making sure each hydrant (public and private) available to the Eagle Creek Emergency Services is plotted on this map is critical to improving the ISO rating of your district. This suggestion is an **absolute**. ISO will need 2 paper copies of this along with a “Shape File” in order to complete their analysis of the primary response boundary served by Wilson County ESD #2.
  
2. A second map must be developed that demonstrates the built-upon and non built-upon area with the desired graded boundary served by Wilson County ESD #2. This map must demonstrate the areas within the primary response boundary of Wilson County ESD #2 that cannot be built upon (flood plain, golf course, lake, etc.). This map should be on a single page (not a set of sectional maps). This suggestion is an **absolute**.

## **Fire Department**

For a community to provide a reasonable level of protection under the analysis system used, a fire department should have suitably located apparatus of proper types. In general, the maximum response distances for the first due engine company should not exceed 1.5-miles and for the first due ladder/service truck company should not exceed 2.5-miles. Any area (regardless of the water supply available) outside 5-road miles of a fire station housing an engine company is considered not protected (ISO rating of 10).

Critical to the timely extinguishment or control of a fire is the need for sufficient firefighters arriving with the first responding apparatus. A comprehensive training program for these firefighters is essential for effective fire ground operations.

The Eagle Creek Emergency Services is required by the updated ISO rating document to maintain 2 engine companies and 1 ladder/service (rescue) truck company in-service, available to respond to structural alarms of fire, for areas afforded fire hydrant protection, within the primary response boundary of Wilson County ESD #2 deployed from 1 fire station. 1 reserve engine and 1 reserve ladder/service (rescue) truck are also required.

At present the Eagle Creek Emergency Services has 1 engine company and 0.13 ladder/service (rescue) truck company in-service deployed from 1 structural fire station. Reserve apparatus is not provided.

The following suggestions are offered for your consideration. They are based on attaining a perfect grading point total within the updated ISO rating document.

1. The Eagle Creek Emergency Services has access to an excellent, fully ISO compliant, training facility in Bexar County. However, utilizing this facility involves excessive travel distances (30-miles) and strips Wilson County ESD #2 of its staffing and apparatus when traveling to the Bexar County training facility.

A fully ISO compliant training facility consists of 3-story drill tower, a fire-resistive fire building, and a flammable liquids pit (substituting classroom training along with videos is acceptable when the EPA does not allow the burning of flammable liquids as is the case throughout Texas). The facility must be on at least a 2-acre site.

To maximize all available ISO credits this facility must be utilized. As a minimum 6 drills of 3-hour duration, or a total of 18-hours, should be accomplished for each firefighter (paid or volunteer) on an annual basis. These drills must be at the training facility or a suitable off-site location for

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the classroom portion of the drill. Records must be maintained for a contiguous 12-month period documenting the drills for full credit.

Training field evolutions, to receive ISO rate credit, must be the firefighter and the apparatus specific to the fire department they serve. It is for this reason that this report suggests providing a training facility within the primary response area served by Wilson County ESD #2. A second option would be a training facility serving all of Wilson County or a facility shared between Wilson County ESD #1 and #2.

At present drills at the training facility do not occur. It is very challenging, if not impossible, to provide the level of training required by the ISO rating document in a combination or volunteer fire department. However, all training items are prorated. Therefore, any training field evolutions will increase the grading point total which develops the ISO rating. If a creditable training facility was provided and utilized to extent ISO requires **4.41 points** would be added to the grading point total which develops an ISO rating.

A very significant benefit to providing a training facility specific to Wilson County ESD #2 or all of Wilson County is with this facility being available the number of firefighters willing to join the fire department normally increases. This increases the base of volunteers when the prospective firefighters know the increased level of training available. When the base of volunteers increases so should the level of volunteers responding to first alarm structure fires; which is a very significant deficiency within the entire ISO rating process for the primary response area served by Wilson County ESD #2.

Please consider; if a countywide facility was provided today there does not exist a travel distance restriction based on the updated ISO rating document for any single fire department to the training facility. However, ISO interprets their licensed rating document via an internal document titled "The Field Procedures Guide". Based on the "Field Procedures Guide" ISO changes the requirements within the items which develop the grading point total which determines a community's ISO rating. For example: Approximately 15-years ago (very recent within ISO) this guide stated that for full credit a training facility must be within 5-road miles of the nearest fire department boundary for full credit. If the facility was outside 5 road miles yet within 10-road miles the facility was credited at 50%. If the facility was over 10-road miles it received no credit.

The point of the above paragraph is when a countywide facility is most likely the best option it should be located as proximate to the majority of the fire departments as possible.

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2. Increase the amount of training at the company level. Company level drills should be a minimum of 1-hour in duration. The ISO rating document adopted in Texas will require the volunteer and paid firefighters receive 16-hours per month of company level drills (in addition to the drills at the training field). This is impossible in all but a few combination or volunteer fire departments throughout the United States. The company training item, as most within the ISO rating document, is prorated; therefore each additional hour documented by the Officer in charge of training will improve the grading point total which develops the ISO rating. At present Wilson County ESD #2 has 3-hours per month of company level drills with an average attendance of 50% (this is the ISO equivalent of 1.50-hours per month). If 16-hours of company level drills were performed each month by each suppression member of Wilson County ESD #2 **2.85 points** would be added to the grading point total which develops the ISO rating.
  
3. Properly preplan all commercial structures within the primary response boundary of Wilson County ESD #2 and update them annually. Providing this level of preplanning would **add 1.89 points** to the grading point total which develops the ISO rating based on the updated ISO rating document. At present approximately preplans of the commercial structures within the response boundary served by Wilson County ESD #2 do not exist. To receive the entire 1.89 available points all preplans must be documented with sketches and written explanations of the hazards involved. This item, as are most within the ISO rate making process, may be prorated. Therefore, additional preplans will improve the grading point total which develops the ISO rating. With so few commercial structures within the primary response boundary of Wilson County ESD #2 implementing this suggestion should be simple.
  
4. Wilson County ESD #2 received a significant amount of additional credits allotted to their grading point total via the Texas Exception by allowing their firefighters to attend the annual weeklong Fireman's Training School (spring or summer session) at Texas A&M University. The same credit is available to volunteer firefighters that achieve at least the basic volunteer certification (167-hours) regardless if they attend the weeklong session of Fireman's Training School (spring or summer session). 3.26 additional grading points were available to the primary response boundary of Wilson County ESD #2 via the Texas Exception for this additional training. Please note that a volunteer reaching the 167-hour level of certification that attended Fireman's Training School once during the 3-years prior to an ISO survey commencing counts twice. Continued certification of the volunteer firefighters (to at least the basic level) and attendance at Fireman's Training School are very important tools in improving the ISO

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rating for all areas within the primary response boundary of Wilson County ESD #2. Each volunteer firefighter attaining the basic volunteer certification would increase the grading point total which develops the ISO rating by **0.11 points**. Each volunteer or paid firefighter attending the weeklong spring or summer session of Fireman's Training School would increase the grading point total which develops the ISO rating by **0.11 points**. A volunteer firefighter reaching the 167-hour certification level and attending a weeklong session of Fireman's Training School within the 3-years prior to an ISO survey commencing would add **0.22 points** to the grading point total which develops the ISO rating.

Attendees (paid or volunteer) at the weeklong school may be either students or instructors. Personnel attending the Fire Marshal's section during the weeklong school also receive this additional credit via the Texas Addendum.

5. Provide the Eagle Creek Emergency Services with a second engine company and deploy it from existing Fire Station #1. Providing this apparatus will **add 9.61 points** to the grading point total which develops the ISO rating.
6. Provide the Eagle Creek Emergency Services with a ladder/service (rescue) truck and deploying it from existing Fire Station #1. Providing this apparatus will **add 4.87 points** to the grading point total which develops the ISO rating. As we discussed during my site visit this apparatus does not have to be a \$500,000 heavy rescue. A phased out ambulance, engine, or even a retired moving van that carries the required equipment will be fully credited by ISO.
7. Wilson County ESD #2 should have the Eagle Creek Emergency Services' engine pump tested annually. This is actually worth 22% of the entire credit for each engine in-service and reserve. ISO will ask for the last 3 pump test results; however, if 2 pump tests could occur prior to an ISO commencing the majority of the credit will be granted by ISO. Providing at least 2 pump tests with the proper documentation will add **1.69 points** to grading point total which develops the ISO PPC.
8. The Eagle Creek Emergency Services should have all hose tested annually. This is actually worth 11% of the entire credit for each engine in-service and reserve. ISO will ask for only the last 3 test dates for 1 section of hose. Providing this level of hose testing with the proper documentation will add **1.06 points** to the grading point total which develops the ISO PPC.

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9. To improve first due response distances, and eliminate areas which will be rated an ISO 10 (no recognized fire protection), 2 additional fire stations should be erected. To be a recognized fire station by ISO, in order to attain an ISO rating of 8 or better (lower), all future fire stations must deploy an engine company. At present these fire stations are **not** required to develop the grading point total which establishes the ISO rating; only to eliminate areas rated an ISO PPC 10, i.e. extend the credit. The optimum location for these additional fire stations are as follows:
- a. A second fire station should be erected in the vicinity of Roemer Lane approximately 2.25-miles East of U.S. Hwy 181.
  - b. A third fire station should be erected in the vicinity of Cimarron and Saddle.

For completeness this report will address the lack of thru streets. The number of thoroughfares in any community greatly affects the number of required fire stations. I understand the reluctance of the citizens residing in any subdivision within Wilson County ESD #2 to allow thoroughfares joining them with an adjacent subdivision or subdivisions. However, the following street extensions would greatly enhance the response capabilities of the Eagle Creek Emergency Services.

- a. Extend Palo Verde to Jones.
- b. Extend Encino to Roemer.
- c. Extend Burr Oak to Cherry.
- d. Extend Misty Bend to Cimarron.
- e. Extend Creek Top to Cimarron.
- f. Extend Palo Alto to Oak Fields.

Also to consider is that the existing fire station is not of sufficient size to house all the required fire apparatus. To optimize the ISO rating the existing fire station should deploy 2 engine companies, 1 ladder/service (rescue) truck company, and an ambulance. The existing fire station should be renovated or demolished and re-built. Another option would be to keep this fire station as it exists today and build a modern second fire station that could house all the required apparatus, improve first due response distances, eliminate class 10 areas, and provide adequate living space for future paid firefighters.

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10. ISO will require that the Eagle Creek Emergency Services have a reserve ladder/ service (rescue) or ladder truck (yes, even though Wilson County ESD #2 does not have one in-service). However, the “Updated ISO Rating Document” has reduced the credit for reserve apparatus by 50%. Therefore this report will not suggest providing a reserve ladder truck or forming a “Memorandum of Understanding” for a reserve ladder/service (rescue) truck or ladder truck.
  
11. ISO will require that the Eagle Creek Emergency Services have a reserve engine. However, the “Updated ISO Rating Document” has reduced the credit for reserve apparatus by 50%. Therefore this report will not suggest providing a reserve engine or forming a “Memorandum of Understanding” for a reserve engine.
  
12. The following equipment is required by the updated ISO rating document for each engine and ladder/service (rescue) truck (both in-service and reserve). The equipment that is the most heavily weighted within the updated ISO rating document is denoted by an asterisk.
  - a. Engines in-service and reserve:
    1. 1200-feet of 2.50-inch, 3-inch, 4-inch, or 5-inch hose or any combination that totals 1200-feet. However, at least 200-feet of the 1200-feet must be 2.50-inch or 3-inch.\*
    2. 15-feet of soft-suction or 20’ of hard suction hose.
    3. 300-gallon or larger booster tank.\*
    4. 200-feet of booster (redline) hose or 200-feet of pre-connected 1.5-inch or 1.75-inch hose.
    5. 400-feet of 1.5 or 1.75-inch hose\*.
    6. A heavy stream device (monitor – ground or portable) capable of delivering 1000-gpm\*.
    7. A large spray nozzle for the heavy stream device (may be carried on the engine, ladder or ladder/service vehicle for full credit)\*.
    8. A distributing, piercing or cellar nozzle.
    9. 1, 2.5-inch shut-off straight stream nozzle attached to a play pipe capable of delivering at least 250-gallons per minute\*.
    10. 2, 1.5 or 1.75-inch combination nozzles\*.
    11. 1, 2.5-inch combination nozzle\*.
    12. 4 self-contained breathing apparatus (minimum of 30-minute capacity\*.
    13. 4 spare cylinders (minimum capacity of 30-minutes).
    14. 2, 12 x 14-foot salvage covers.
    15. 2 hand lights (a basic flashlight is not creditable).
    16. 1, 2.5 or 5-inch hose clamp.

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- 17.1 hydrant hose gate (2.5-inch). A gated wye (2.5-inch x 1.5-inch x 1.5-inch) is creditable.
  18. Gated wye (2.5-inch x 1.5-inch x 1.5-inch).
  19. Mounted radio\*.
  20. Portable radio\*.
  21. 24-foot extension ladder\*.
  22. 12 or 14-foot roof ladder.
- b. Ladder/Service (Rescue) Trucks in-service and reserve.
1. 4 self-contained breathing apparatus (minimum of 30-minute capacity)\*.
  2. 4 spare cylinders (minimum capacity of 30-minutes)\*.
  3. 6, 12 x 18-foot salvage covers.
  4. Electric generator (minimum of 3.0-KW)\*.
  5. 3 portable flood lights.
  6. 1 smoke ejector or positive ventilation fan\*
  7. 1 oxy-acetylene cutting unit (a thermal imaging camera, plasma cutting unit, or chain saw with a carbide tip will substitute)\*.
  8. 1 power saw\*.
  9. 4 hand lights (flashlights are not creditable).
  10. A hose hoist or hose roller.
  11. 6 pike poles (2, 3-feet or longer and 4, 6-feet or longer).
  12. Mounted Radio\*.
  13. Portable radio\*.
  14. 1, 24-foot (or longer) extension ladder.\*
  15. 1, 16-foot roof ladder.\*
  16. 1, 10-foot collapsible (attic) ladder.
  17. 1, 14-foot or longer combination ladder.

Substitutions exist for some of the above required equipment. Please contact my company for assistance as part of the contract for this report. The in-service engine is assumed to be very well equipped as outlined above for this report.

13. The most significant deficiency within the entire ISO rate making process for the communities such as Wilson County ESD #2 is the lack of firefighters responding to first alarm structure fires. The ISO rating document requires that 6 firefighters per company be on-duty with each existing engine and ladder truck. A ladder/service (rescue) truck requires 3 on-duty firefighters for full credit. This level of staffing is needed at the fire site for optimum utilization of the apparatus, and when the staffing level drops below 4 firefighters per company (2 for a ladder/service {rescue} truck company), the ability to utilize the apparatus effectively is seriously impaired.

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I would deem this report incomplete unless I point out that only 1 fire department in Texas maintains 6 firefighters per company on-duty (paid staffing) with each of the first due apparatus; this credit is achieved via 202 on-duty firefighters which staff the EMS units. However, many communities strive to maintain a minimum of 4 firefighters, on-duty with each existing engine and ladder truck and 2 firefighters on-duty with each existing ladder/service (rescue) truck.

For a volunteer or combination fire department the maximum credit that can be attained for the volunteer firefighters is the equivalent of 4 career firefighters on duty. The volunteer equivalent of 4 career firefighters is 12 volunteers responding to structural alarms of fire with each engine and ladder truck with 6 volunteers required to respond with each ladder/service (rescue) truck. For the Eagle Creek Emergency Services to meet this requirement an average of 30 volunteers should respond to all structural alarms of fire on first alarm if the second engine and a ladder/service (rescue) truck is provided. This level of volunteer response is normally associated with a volunteer roster of approximately 60 to 70 firefighters. It is unrealistic to believe that the Eagle Creek Emergency Services could attract this level of volunteer participation based on the present population within the response area served by Wilson County ESD #2. Therefore, improving staffing levels most likely will be via paid firefighters (part-time paid are creditable based on the number of hours they work in a 12-month period) or duty crews. See the next paragraph for the method of prorating the credit.

An alternative method to improve staffing credits within the ISO rating document is to develop duty crews. The duty crew is a group of volunteers that are on-duty at a specified fire station during certain hours of the day. A duty crewmember receives the identical credit as a paid firefighter. The hours a duty crewmember is on-duty at the fire station is prorated. For example: 6 duty crewmembers on-duty 28 hours per-week is the equivalent of 1 paid firefighter on-duty at all times. ISO will require extensive documentation demonstrating the hours that a duty crewmember is on-duty at the fire station. Many communities to some extent compensate the volunteer firefighters who serve in this duty crew capacity. This is the exact method part-time paid firefighters are credited by ISO.

A second method to improve the level of fire department staffing is increasing volunteer response to first alarm structural fires. This normally requires increasing the base of volunteers in order that more volunteer firefighters are available to respond. Most likely this is not a viable option for Wilson County ESD #2.

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A third method to improve fire department staffing levels is the provision of paid firefighters on-duty 24/7. The paid firefighters could perform maintenance duties, prepare the preplans, and assist with Fire Marshal's building inspections as available (assuming an updated code was adopted).

Another alternative available to Wilson County ESD #2 is to certify all EMS personnel to at least the level of an introductory volunteer firefighter. ISO will credit all on-duty EMS personnel as on-duty firefighters (adding 1.44 points for each EMS personnel on-duty 24/7); if the EMS personnel meet the following 3 criteria: The first is that all EMS personnel are fire certified (to a minimum volunteer level or above) and carry their bunker gear on the EMS unit. A second requirement is that 1 EMS unit must be dispatched to all **structural** alarms of fire. The third requirement is that the EMS personnel must be available to take part in fire operations (operating the engine, pulling hose, etc.) if needed. Please consider that if a single EMS unit was on-duty at all times at the Eagle Creek Emergency Services Fire Station **2.88 points** would be added to the grading point total which develops the ISO rating.

Each additional paid firefighter, duty-crew member, or EMS personnel fire certified on-duty 24/7 would **add 1.44 points** to the grading point total which develops the ISO rating.

An increase in the volunteer response to first alarm structural fires by 1 firefighter will increase the grading point total by **approximately 0.48 points** which develops the ISO rating.

## **Emergency Communications**

In order to assure a timely response to fire emergencies a communications center must have adequate telephone facilities (emergency and business circuits) for the public to report emergencies, sufficient operators on duty, and the facilities to dispatch fire department companies without interruption.

The following suggestions are presented for your consideration based on the updated ISO rating document:

1. Provide “Monitoring for Integrity” for the primary dispatch method serving Wilson County ESD #2. Monitoring for integrity requires a visual and audible alert be activated if a principal component of the dispatch circuit is rendered inoperable. To receive credit under the updated rating document the following must be satisfied: Please note that any requirement followed by an N/C results in *no credit* for this monitoring even though all the other items are provided. The items without an N/C must be available for full credit. Pro-rated credit is available for the items without an N/C.
  - a. A list of the principal components of the primary dispatch circuit that are monitored must be provided: **N/C**
  - b. All portions of the circuit and all components must be identified for integrity status/failure condition. In addition all circuit components must be monitored for power supply and emergency power integrity/failure with both visual and audible trouble signals: **N/C**
  - c. Power supply and emergency power integrity/failure condition must be monitored for the circuit and all components at all locations including remote radio transmitter/receiver antenna sites. **N/C**
  - d. All portions of the circuit and all components must be identified for integrity status/fault condition and all circuit components must be monitored for power supply and emergency power integrity/failure with visual and audible trouble signals. **N/C**
  - e. Verification of visual signal activation with test circuit failure feature as specified in NFPA Standard 1221 must be provided.
  - f. Verification of audible signal activation with test circuit failure feature as specified in NFPA Standard 1221 must be provided. The audible trouble signal can be an intermittent or continuous tone or buzzer.

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- g. Verification of reactivation of audible trouble signal when an additional fault condition occurs while previous silenced fault condition remains active as specified in NFPA Standard 1221 must be provided.
- h. Trouble signals routed to a dedicated display screen or panel not used for routine dispatching activities as specified in NFPA Standard 1221 must be provided.
- i. Trouble signals must be displayed at a location where personnel are in constant attendance and are responsible to respond to a trouble signal as specified in NFPA Standard 1221. **N/C**
- j. For radio circuits duplicate transmitters must be provided for the primary dispatch circuit as specified in NFPA Standard 1221. **N/C**

Providing this level of monitoring will **add 0.90 points** to the grading point total which develops the ISO rating.

- 2. Provide emergency power for the communications center and the Eagle Creek Emergency Services Fire Station. Once provided the emergency power should be tested weekly under a load (not the entire load) for an hour. If the suggested emergency power sources were provided and tested as required by NFPA 1221 and the ISO rating document **1.60 points** would be added to the grading point total which develops the ISO rating.

## **Water Supply**

For a water supply works to be considered adequate under the analysis system used, it should be able to deliver the basic fire flow (3500-gpm) for a 3-hour period and during that period provide consumption demands at the maximum daily rate.

The arterial mains and secondary feeder mains should be of sufficient capacity to deliver the needed fire flows throughout the community. The arterial mains should extend to all areas of the community; they should be looped for mutual support and spaced at approximately 3000-foot intervals or less. The minimum size distribution main should be 6-inches (8-inches is preferred) in diameter and this size used only in widely spaced residential areas when the gridiron is such that there is not over 600-feet between connections to other mains. A 6-inch dead-end main is not considered satisfactory for supplying fire hydrants. A minimum size of 8-inch pipe (10-inch is preferred) should be used in commercial and high-density residential areas and this size pipe should be limited to areas with an excellent gridiron. This will help insure meeting the corresponding fire demand throughout the community.

Before the water supply available can be fully utilized by the fire department, there must be sufficient fire hydrants in the vicinity of the subject buildings. The number of hydrants required varies with the fire flow demand but when the spacing is not over 300-feet in commercial, industrial, and institutional areas and not over 600-feet in one and two family dwelling areas, sufficient hydrants normally will be available. Hydrants should conform to the American Water Works Association Standards. The connection from the distribution main to the hydrant should be not less than 6-inches in diameter. Hydrants attached to water mains less than 4-inches in diameter are not credited within ISO's Rating Document. All hydrants should be inspected annually with a pressure test (a pressure test is **not** a flow test); complete records should be kept of all inspections.

A flow testing program should part of the distribution system maintenance. ISO will require approximately 50 fire hydrant flow tests (minimum of 2 fire hydrants utilized) per year be performed. The test results should be maintained on file and documented with the date performed. ISO will want to see records going back 5 years if the "Updated FSRS" is allowed into Texas.

The following suggestions are offered for your consideration:

1. Arterial looping, distribution system gridirons, and hydrant placement will help improve the water supply item of the grading (30 points are available within this item). This is the most heavily weighted item within the development of the grading point total which establishes the ISO rating.

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The results based on a flow-testing program throughout the response boundary of the area served by Wilson County ESD #2 parlayed with the placement of fire hydrants will be the most critical items within the entire grading process for the area served by Wilson County ESD #2. There is a possible **9.21 additional points** to be gained within this grading item.

2. Each fire hydrant should be inspected annually with proper records maintained throughout the boundary of Wilson County ESD #2. Each fire hydrant should be pressure tested (a pressure test is not a flow test) and flushed as part of the inspection process. At present this suggested level of inspection is not met. In addition a representative sampling of flow tests (2 flow tests per year) should be performed annually in the areas within the boundary of Wilson County ESD #2 afforded fire hydrant protection. ISO will require, for full credit, that all sections of the distribution system have a flow test once every 5-years (a total of 10 flow tests over the 5-year period. At present this sampling of flow tests is not being performed. There is a possible **5.39 additional points** to be gained within this grading item.

## **Fire Safety Control**

The consistent, systematic application of fire safety control regulations combined with a good public education program in fire prevention can be an important factor in reducing the overall incidence of fire and the consequent fire losses. Successful execution of such programs necessitates that a sufficient number of properly trained personnel be provided. A nationally recognized body of model fire prevention, building and safety codes represent the combined knowledge of many experts in this field and, when adopted with little or no modifications, afford a community the opportunity for reasonable control of hazardous materials and building construction.

The following suggestions are offered for your consideration:

1. Adopt the 2015 or 2012 edition of the International Fire Code and have it enforced throughout unincorporated Wilson County. At present a Fire Marshal's Office does exist specific to Wilson County; but a recognized code is not available. There exists a possible **2.88 available points** to the areas evaluated within this report if an up-to-date fire code was adopted by ordinance or other legal document and enforced throughout unincorporated Wilson County.
2. Staffing levels assigned to the Fire Marshal's Office serving Wilson County should be increased by 2 inspector/investigators. This additional staffing assigned to the Fire Marshal's Office serving Wilson County is required based on the updated rating ISO document. Providing these additional inspector/investigators will add **0.62 points** to the grading point total which develops the ISO rating.
3. Insure that a photocopy of the school fire exit drill reports for the past 3 school years is available for ISO when the survey commences. The grading summary which develops the ISO rating has this credit assigned for this report. Approximately 1.50 points will be lost if these reports are not available for ISO.

## **Summary of Suggested Improvements**

When the suggested improvements referred to as absolutes are in-service parlayed with providing the Eagle Creek Emergency Services with a second engine company and a ladder/service (rescue) truck company Wilson County ESD #2 is ready to improve the ISO rating.

Presently Wilson County ESD #2 has been assigned an ISO rating of 6 for areas afforded fire protection within 5-road miles of the existing Eagle Creek Emergency Services Fire Station. There is no question this rating will improve to an ISO PPC 4 upon re-survey; with the potential result of an ISO PPC 3.

## **Plan of Action**

When a second engine company and a ladder/service (rescue) truck company is in-service request a survey from ISO survey and attain at least an ISO rating of 4, with an ISO rating of 3 a potential result for the areas afforded fire hydrant protection within 5-road miles of the existing Eagle Creek Emergency Services Fire Station. By implementing the additional suggested improvements presented within this report that are economically feasible within the budget constraints of Wilson County ESD #2 an ISO rating of 3 should be attainable. The suggested improvements which do not require significant capital expenditures are as follows:

- a. Have Wilson County update the presently adopted Life Safety 101 Code to the 2015 (2012 would also receive the majority of the credit) edition of the International Fire Code with little or no modification and enforce the code throughout Wilson County – add 2.88 points.
- b. Have Wilson County add 2 inspector/investigators to the Office of the Fire Marshal to provide building inspections in order that they meet the intent of the adopted code and investigate fires deemed suspicious – add 0.62 points.
- c. Preplan the commercial buildings in Wilson County ESD #2 response boundary – add 1.89 points.
- d. Increase training at the company level. Each additional hour of training per month with an average attendance of 50% will add 0.13 points. If 2 drills per month of a 3-hour duration were held with an average attendance of 50% – add 0.39 points.
- e. Provide 2 rounds of pump testing that demonstrates 1 interval between the 2 tests of 14-months or less – add 1.69 points.
- f. Provide 3 rounds of hose testing that demonstrates 2 intervals between the 3 tests of 14-months or less – add 1.06 points.

If suggestions a thru f were implemented 8.53 additional points will be added to the grading point total of 47.81 resulting in a grading point total of 56.34 (ISO PPC 5). Providing the second engine and a ladder/service (rescue) truck to the apparatus fleet of the Eagle Creek Emergency Services would add 14.48 points to the grading point total of 56.34 resulting in a grading point total of 70.82 (ISO PPC 3). This would place Wilson County ESD #2 above the threshold of 70.00 points required for an ISO rating of 3; however the threshold to exceed is 73.00

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to guarantee an ISO PPC 3 results from a future ISO survey based on the updated ISO rating document.

When the second engine company and the ladder/service (rescue) truck company are in-service, and as many of the suggested improvements provided within this report are implemented, an updated ISO survey should be requested from Mr. Dale Broyles – **not ISO's Austin Office**. Due to the vigilance of the Texas State Fire Marshal's Office and the ISO Committee of the Texas Fire Chief's Association an ISO survey request can be made at any time in the State of Texas. This is not the case in the other 49 States.

Once a survey is requested Mr. Broyles will be submitting his various pre-survey packets that must be completed prior to his visit. These packets are extremely time consuming and tedious to complete. My assistance will save all District Officials (Water, Fire, Fire Marshal, and Communications) involved in the ISO process for Wilson County ESD #2 a considerable amount of time in completing these packets of information. In addition the ISO Field Representative will have the extensive amount of required support data properly formatted to maximize the ISO rating for the primary response area served by Wilson County ESD #2. My assistance assures the ISO Field Representative will have the exact information he requires.

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## **Conclusion**

Implement the suggested Action Plan and improve the presently assigned ISO rating of 6 to an ISO rating of 4 or 3 for the areas afforded fire hydrant protection within the primary response area served by Wilson County ESD #2.

I would like to thank Wilson County ESD #2 District Officials Mr. Bill Kenney and Mr. Larry Phillips, Fire Chief Jackie Komives, Assistant Fire Chief Walter Cutsinger, and the Oak Hill Water Supply Corporation Representatives Ms. Stephanie Bell and Mr. Richard Demmer for the excellent cooperation extended to me during my survey. Without their efforts prior to my survey and their continued support during and after my visit the timeliness and accuracy of this report would be seriously compromised.

I appreciate the opportunity afforded me by Wilson County ESD #2 and very much look forward to assisting Wilson County ESD #2 in the future.

Sincerely,

W. Michael Pietsch, P.E.  
Civil Engineer

WMP/spp

**Grading Summary Sheet**  
(Updated FSRS – Areas Afforded Fire Hydrant Protection)

**WILSON COUNTY ESD #2**

**Classification 6 – 47.81**

I.	Receiving & Handling Fire Alarms:		<b><u>Total 7.50, Maximum = 10</u></b>
	a. Item 414	-	3.00
	b. Item 422	-	4.00
	c. Item 432	-	0.50
			<b>3</b>
			<b>4</b>
			<b>3</b>
II.	Fire Department:		<b><u>Total 18.15, Maximum = 50</u></b>
	a. Item 513	-	1.03
	b. Item 523	-	0.00
	c. Item 532	-	2.14
	d. Item 549	-	0.52
	e. Item 553	-	0.00
	f. Item 561	-	2.55
	g. Item 571	-	4.79
	h. Item 581	-	1.86 + 3.26 (CTT)
	i. Item 730	-	2.00
			<b>6</b>
			<b>0.50</b>
			<b>3</b>
			<b>4</b>
			<b>0.50</b>
			<b>10</b>
			<b>15</b>
			<b>9</b>
			<b>2</b>
III.	Water Supply:		<b><u>Total 25.40, Maximum = 40</u></b>
	a. Item 616	-	20.79
	b. Item 621	-	3.00
	c. Item 631	-	1.61
			<b>30</b>
			<b>3</b>
			<b>7</b>
IV.	Divergence*		-5.44
V.	Community Risk Reduction:	<u>2.20</u>	<b>Maximum = 5.50</b>
VI.	Compressed Air Foam:	0.00	<b>Maximum = 1.00</b>
<b><u>Wilson County ESD #2's Total: 47.81</u></b>			<b><u>Maximum = 106.50</u></b>

WILSON COUNTY ESD #2 GRADING SUMMARY

**Fire Suppression Rating Study for Wilson County ESD #2 – Updated FSRS  
(Areas Afforded fire Hydrant Protection)**

VI.	<b><u>Total:</u></b>		<b><u>Maximum Credit:</u></b>
	Fire Alarm	7.50	10.00
	Fire Department	18.15	50.00
	Water Supply	25.40	40.00
	Divergence*	-5.44	
	Community Risk	2.20	5.50
	CAFS	<u>0.00</u>	<u>1.00</u>
	<b>Wilson County ESD #2's Total:</b>	<b>47.81</b>	<b>106.50</b>

**Class 6**

<b><u>Credit</u></b>	<b><u>Relative Classification</u></b>
90.00 - 100.00	1
80.00 - 89.99	2
70.00 - 79.99	3
60.00 - 69.99	4
50.00 - 59.99	5
<b>40.00- 49.99</b>	<b>6</b>
30.00 - 39.99	7
20.00 - 29.99	8
10.00 - 19.99	9
00.00 - 9.99	10

\*Divergence is a reduction in credit to reflect a difference in the relative credits for Fire Department and Water Supply.

**WILSON COUNTY ESD #2 GRADING SUMMARY**