Texas Department of Insurance

State Fire Marshal's Office, Mail Code 112-FM
333 Guadalupe • P. O. Box 149221, Austin, Texas 78714-9221
512-305-7900 • 512-305-7910 fax • www.tdi.state.tx.us

PPC SUBMITTAL

Municipality Grapevine **County** Dallas/Denton/Tarrant **Population** 50000

Date Surveyed 11/04/2003 **Total Credit** 81.99 **Class** 2

Date Submitted 09/01/2004/11/05/2004 **Effective Date** 02/01/2005

Place Code 11430/12130/43930 **Town Code**

SUMMARY OF CREDIT

Feature		Assigned	Maximum Credit
Receiving and Handling Fire Alarms		10.00	10.00%
Water Supply		38.36	40.00
Fire Department		33.81	50.00
Additional Training Credit (CTT)	0.54		
Texas Addendum Credit (CTX)	4.72		6.50
* Divergence		< 5.44 >	
Total Points		81.99	106.50

The Public Protection Class is based on the total percentage credit as follows:

Class	Percentage %
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

TEXAS DEPARTMENT OF INSURANCE
Approved
NOV 0 8 2004
G. Mike Davis
State Fire Marshal

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

The difference between the protection provided by the fire department and the water supply prevents the better feature from being utilized to its fullest extent. Therefore, an adjustment (divergence) is made to reflect any difference between these two features. Because of the difference in the total weights assigned to the two features, the total for the Fire Department, *which has the higher total weight*, is adjusted to make the comparison reflect the relative adequacies of the two features.

Divergence = 50% (100% water supply credit – 80% of fire department credit)

The above classification has been developed for use in property insurance premium calculations only.

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November 08, 2004

Mr. David Anderson
Fire Chief of Grapevine
601 Boyd Drive
Grapevine, Texas 76051

Place Code: Dallas: 11430 Denton: 12130 Tarrant: 43930

Dear Mr. Anderson:

Insurance Services Office (ISO) has submitted a recommendation concerning your community's Public Protection Classification (PPC). Currently, the Community's Public Protection Classification rating is a Class 4.

Insurance Services Office is recommending that the classification be changed to Class 2, with an effective date of 02/01/2005. The recommendation is based on a review of your community performed on 11/04/2003 and does include the application of the Texas Addendum.

Public Protection Classifications range from 1 (best) to 10 (worst).

We have reviewed the information provided and believe it is sufficient to grant approval. Enclosed is a PPC Submittal sheet indicating the point totals for the major areas associated with the review. We will notify Insurance Services Office of our approval of the recommendation and the 02/01/2005 effective date.

If you have any questions regarding this change, I may be reached at the address indicated above or by telephone at (512) 305-7941.

Please make sure all community officials and residents within your district are notified of the new Public Protection Classification rating for your community, and the effective date.

Sincerely,

Jesse James Williams
Deputy State Fire Marshal
PPC Oversight Representative

TEXAS DEPARTMENT OF INSURANCE
Approved
NOV 08 2004
G. Mike Davis
State Fire Marshal

E-mail: jesse.williams@tdi.state.tx.us

INSURANCE SERVICES OFFICE, INC.

4030 W. Braker Lane, Suite 350, Austin, TX, 78759
(800) 444 – 4554 FAX (800) 736 - 3289

PPC GRADING SUBMITTAL

Community: **Grapevine**
TDI PLACE CODE:

COUNTY: Tarrant,Denton,Dallas
SURVEY: 9/16/2004

PPC SUMMARY EVALUATION

DATE TEXAS FIRE SAFETY ADDENDUM APPLIED: 9/16/2004 BY: JM
YEAR INSPECTED: 2004 SCHEDULE: 15 -YEAR
FIELD REP: Jmanry POPULATION: 50000
TERRITORY CODE: 439,121,113

********GRADING POINTS********

SURVEY DATE: 9/16/2004	W/O ADDENDUM	WITH ADDENDUM
FIRE ALARM	10.00	10.00
WATER SUPPLY	38.36	38.36
FIRE DEPT	33.81	33.81
ADDITIONAL TRAINING CREDIT (CTT)	***	0.54
FIRE DEPT + CTT	33.81	34.35
DIVERGENCE	-5.66	-5.44 ✓
TEXAS FS ADDENDUM CREDIT (CTX)	***	4.72
TOTAL POINTS	76.51	81.99 ✓

27.48

PUBLIC PROTECTION CLASS 3 **2**

DATE SUBMITTED TO TDI: 11/1/2004

EFFECTIVE DATE:4/1/2005

BFF: 3500

2-1-05 effective date

gw

RECEIVED
NOV 07 2004
STATE FIRE MARSHAL

PPC COVER SHEET

COMMUNITY: Grapevine COUNTIES: Tarrant, Denton and Dallas

Survey No:

DATE TEXAS FIRE SAFETY ADDENDUM APPLIED: 9/04 BY: JM

YEAR INSPECTED: 2004 SCHEDULE: 15-YEARS SURVEY DATE: 9/16/04

FIELD REP: JM POPULATION: 50,000 KEY RATE:

TERRITORY CODE: 439,121, 113 TDI PLACE CODE (if known):

	W/O EXCEPTION	WITH EXCEPTION	PREVIOUSLY (yr.of old PPC: (1998)
FIRE ALARM	10.00	10.00	6.15
WATER SUPPLY	38.36	38.36	34.89
FIRE DEPARTMENT	33.81	33.81	24.69
ADDITIONAL TRAINING CREDIT (CTT)		0.54	0.77
FIRE DEPT + CTT		34.35	25.46
DIVERGENCE	<5.66>	<5.44>	<3.51>
TX EXCEPTION CREDIT (CTX)		4.72	3.51
TOTAL POINTS	76.51	81.99	62.75
PUBLIC PROTECTION CLASS	**3**	**2**	**4**

TX. EXCEPTION SUBITEMS: (FPCE: 29.0 FI: 8.53 PFSE: 30.00 CCE: 26.87 CAFS: 0.0)

Other Names of Jurisdiction (if any):

EFFECTIVE DATE OF GRADING: 4/01/2005 (to be filled in by office personnel)

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 50,000

Date Surveyed 9/16/04 Total Credit 81.99 Class 2

RECEIVING AND HANDLING FIRE ALARMS

This section of the Fire Suppression Rating Schedule review the facilities provided for the general public to report fires, and for the operator on duty at the communication center to dispatch fire department companies to the fires.

		Credit	
		Actual	Maximum
1.	(Item 414) Credit for Telephone Service This item reviews the facilities provided for the public to report fires, including the listing of fire and business numbers in the telephone directory.	2.00	2.00
2.	(Item 422) Credit for Operators This item reviews the number of operators on-duty at the communication center to handle fire calls.	3.00	3.00
3.	(Item 432) Credit for Dispatch Circuits This item reviews the dispatch circuit facilities used to transmit alarms to fire department members.	5.00	5.00
4.	(Item 440) Total Credit for Receiving and Handling Fire Alarms	10.00	10.00

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 50,000

Date Surveyed 9/16/04 Total Credit 81.99 Class 2

FIRE DEPARTMENT

This section of the Fire Suppression Rating Schedule review the engine and ladder-service companies, equipment carried, response to fires, training, and available fire fighters.

		Credit	
		Actual	Maximum
1.	(Item 513) Credit for Engine Companies This item reviews the number of engine companies and the hose and equipment carried.	8.33	10.00
2.	(Item 523) Credit for Reserve Pumpers This item reviews the number of reserve pumpers their pump capacity and the hose and equipment carried on each.	0.83	1.00
3.	(Item 532) Credit for Pump Capacity This item reviews the total available pump capacity.	5.00	5.00
4.	(Item 549) Credit for Ladder Service This item reviews the number of ladder and service companies and the equipment carried.	2.47	5.00

CLASSIFICATION DETAILS

FIRE DEPARTMENT
(continued)

		Credit	
		Actual	Maximum
5.	(Item 553) Credit for Reserve Ladder Service This item reviews the number of reserve ladder and service trucks, and the equipment carried	0.50	1.00
6.	(Item 561) Credit for Distribution This item reviews the percent of the built-upon area of the city which has an adequately-equipped responding first-due engine company within 1 1/2 miles and an adequately-equipped, responding ladder-service company within 2 1/2 miles.	2.65	4.00
7.	(Item 571) Credit for Company Personnel This item reviews the average number of equivalent fire fighters and company officers on duty with existing companies.	7.19	15.00+
8.	(Item 581) Credit for Training This item review the training facilities and their use.	6.84	9.00
	Additional Credit for Training (CTT):	0.54	
9.	(Item 590) Total Credit for Fire Department	34.35	50.00+

+ This indicates that credit for manning is open-ended, with no maximum credit for this item.

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 50,000

Date Surveyed 9/16/04 Total Credit 81.99 Class 2

WATER SUPPLY

This section of the Fire Suppression Rating Schedule reviews the water supply system that is available for fire suppression in the city.

		Credit	
		Actual	Maximum
1.	(Item 616) Credit for the Water System This item review the supply works, the main capacity and hydrant distribution.	33.96	35.00
2.	(Item 621) Credit for Hydrants This item reviews the type of hydrants, and method of installation	2.00	2.00
3.	(Item 631) Credit for Inspection and Condition of Hydrants This item reviews the frequency of inspections of hydrants and their condition.	2.40	3.00
4.	(Item 640) Total Credit for Water Supply	38.36	40.00

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 50,000

Date Surveyed 9/16/04 Total Credit 81.99 Class 2

SUMMARY OF CREDIT

Feature	Assigned	Maximum Credit
Receiving and Handling Fire Alarms	10.00%	10.0%
Fire Department	34.35	50.00
Water Supply	38.36	40.00
Texas F.S. Addendum Credit (CTX)	4.72	6.50
* Divergence	<5.44>	
Total Points Credit:	81.99%	

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

The Public Protection Class is based on the total percentage credit as follows:

Class	Percentage %
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

The Texas Fire Safety Addendum Credit (CTX) is developed from a formula which results in a maximum additional credit of 6.5 points to the total points credited under the Fire Suppression Rating Schedule. Within this formula for addendum credit (CTX) Grapevine received 29.0 points for Fire Prevention Code Enforcement (FPCE), 8.53 points for Fire Investigations (FI), 25.0 points for Public Fire Safety Education (PFSE), 26.87 points for Construction Code Enforcement (CCE), and 0.0 points for Compressed Air Foam System (CAFS). The application of these points follows this formula:

$$CTX = \{(FPCE + FI + PFSE + CCE + CAFS) \div 130\} \times 6.5$$

Where the <u>maximum</u> range for the categories is:

FPCE	= 30
FI	= 10
PFSE	= 30
CCE	= 30
CAFS	= 30

or, in the case of **Grapevine**

$$CTX = \{(29.0 + 8.53 + 30.0 + 26.87 + 0.0) \div 130\} \times 6.5 = 4.72$$

INSURANCE SERVICES OFFICE, INC.

4030 W.Braker Ln. ,Ste.350, Austin,Tx 78759
(800) 444 – 4554 FAX (800) 736 - 3289

GRADING SUMMARY

TEXAS STATE EXCEPTIONS
TO THE
ISO FIRE SUPPRESSION RATING SCHEDULE

NAME OF COMMUNITY: Grapevine

COUNTY: Tarrant

EVALUATOR: JM

CTT POINTS: 0.54

FIRE SAFETY CONTROL POINTS: 4.72

Date: 9/16/04

Population: 50,000

BFF: 3500

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

A. FIRE PREVENTION CODE ENFORCEMENT (FPCE)... 30%

1. Regulations

For the adoption and maintenance of one of the following model codes:

NFPA 1, *Fire Prevention Code*

BOCA, *National Fire Prevention Code*

ICBO, *Uniform Fire Code*

SBCCI, *Standard Fire Prevention Code*

MODEL CODES	POINTS CREDITED
a. Current Model Code Edition, up to 8% ..... Within one year of the most recent edition (2000 ed.). (8%) Second most recent edition (1997 ed.). (6%) Third most recent edition (1994 ed.). (4%) Older. (0%)	**8.0**
b. Past Model Code Editions, up to 2% ..... • If model codes were adopted prior to 1960. (2%) OR • If model codes were adopted after 1960 but before `1980. (1%)	**1.0**

2. Personnel

a. Quantity, up to 5%	**5.0**
b. Qualifications and Certification, up to 3%	**3.0**
c. Ongoing Training, up to 2%	**2.0**

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

3. Enforcement and Inspection Activity

a. Plan Review, up to 2%	**2.0**
b. Certificate of Occupancy Inspections, up to 1%	**1.0**
c. Fire Prevention Inspection Frequency and Recordkeeping, up to 3%	**3.0**
d. Quality Control of Enforcement and Inspection Programs, up to 1%	**1.0**
e. Inspections of Private Fire Protection Equipment, up to 1%	**1.0**
f. Enforcement of Fire Prevention Ordinances, up to 1%	**1.0**
g. Coordination with Fire Department Training and Preplanning Programs, up to 1%	**1.0**

A. FPCE: TOTAL = **29.0**

B. FIRE INVESTIGATION (FI) 10%

1. Organization and Staffing

a. Organization, up to 2%	**2.0**
b. Personnel, up to 2%	**0.53**

2. Personnel Qualifications and Training

a. Qualifications and Certification, up to 2%	**2.0**
b. Training and ongoing training, up to 1%	**1.0**

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

3. Use of the Texas Fire Incident

a. Reporting System (TEXFIRS), up to 3% ..... Supplied by TDI	**3.0**

B. FI: TOTAL =	**8.53**

C. PUBLIC FIRE SAFETY EDUCATION (PFSE)..... 30%

1. Public Fire Safety Education, Personnel Qualifications and Training

A. ALL PUBLIC FIRE SAFETY EDUCATION PERSONNEL MUST COMPLETE A COURSE BASED ON THE DOCUMENT ENTITLED "PUBLIC FIRE EDUCATION PLANNING, A FIVE-STEP PROCESS", PUBLISHED BY THE U. S. DEPARTMENT OF COMMERCE-UNITED STATES FIRE ADMINISTRATION PUBLIC EDUCATION OFFICE OR A 40-HOUR COURSE ON THE METHODS OF TEACHING. 3%	**3.0**

B. *ALL PUBLIC FIRE SAFETY EDUCATION PERSONNEL MUST PARTICIPATE IN CONTINUING EDUCATION IN PUBLIC FIRE SAFETY EDUCATION TECHNIQUES AND PROCESSES. THEY MUST RECEIVE AT LEAST 10 HOURS OF ADDITIONAL WORK-RELATED TRAINING EACH YEAR.* 3%	**3.0**

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

2. PROGRAMS FOR PUBLIC FIRE SAFETY EDUCATION

a. Residential fire safety program, up to 8%	**8.0**
b. Fire safety education in schools (private and public, early childhood education through grade 12), up to 8% ..... Supplied by TDI	**8.0**
c. Juvenile fire-setter intervention program, up to 4%	**4.0**
d. Fire safety education program for occupancies having large-loss potential or hazardous conditions as identified by annual analysis of large-loss fire risks, up to 4%	**4.0**

C. PFSE: TOTAL =	**30.0**

GRADING WORKSHEET FOR

TEXAS STATE EXCEPTIONS TO THE FSRS

D. CONSTRUCTION CODE ENFORCEMENT (CCE) 30%

1. Regulations – Local Construction Codes

a. Current Model Code Edition or Ordinance in use, up to 8% ..... • Adoption of the current code will be valued highest, older editions progressively less, and editions more than three-publications-old will receive no value. • For adoption of model building code. (1%) • For adoption of the NEC. (1%) • For adoption of a model mechanical code. (1%) • For adoption of a model gas and plumbing code. (1%) • For adoption and maintenance of a model substandard building abatement code. (1%) • The credit for current code edition (sum of 5 previous bullets) will be prorated as follows: ➢ Within one year of the most recent edition (100% of value). ➢ Second most recent edition (75% of value). ➢ Third most recent edition (50% of value). ➢ Older (0%). • For adoption and maintenance of a comprehensive sprinkler ordinance applying to all nonresidential structures. (1%) • For adoption and maintenance of a comprehensive household fire warning equipment ordinance according to NFPA 74 standards. (0.5%) • For adoption and maintenance of an ordinance requiring new roofs to be fire resistive. (0.5%) • For adoption and maintenance of a zoning ordinance (fire limits ordinance may be used. (0.5%) • For adoption and maintenance of a comprehensive residential sprinkler ordinance according to applicable NFPA standards. (0.5%)	**6.5**
b. Past Model Code Editions, up to 2% ..... • If codes were adopted since prior to 1960. (2%) OR If codes were adopted after 1960 but before 1980. (1%)	**2.0**

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

2. Personnel

a. Quantity, up to 5%	**3.37**
b. Qualification and Certification, up to 3% ..... • Inspectors must be certified through a recognized building authority or have a minimum of 5 years work-related experience and working toward certification. (2%) • Plan reviewers must be certified through a recognized building authority. (1%)	**3.0**
c. Ongoing Training, up to 2%	**2.0**

3. Enforcement and Inspection Activity

a. Inspection Activity, up to 4%	**4.0**
b. Plan Review, up to 2% ..... • All construction plans for new nonresidential construction, additions, remodeling, etc., must be reviewed for compliance with appropriate codes. (1%) • All plan reviews must be coordinated with Fire Marshal. (1%)	**2.0**
c. Inspection procedures, up to 1%	**1.0**
d. Recordkeeping, up to 1% ..... • The inspection process must be documented and records kept on each construction project. (0.5%) • Building permits must be required for all construction. (0.5%)	**1.0**
e. Quality Control of Enforcement and Inspection Program, up to 1%	**1.0**
f. Public Information up to 1% ..... • Information brochures that explain the permit process and inspection procedure to the public must be available. (0.5%) • Seminars for local architects, contractors and builders for construction code education must be presented twice a year. (0.5%)	**1.0**

D. CCE: TOTAL = 26.87

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

E. COMPRESSED AIR FOAM SYSTEM (CAFS)..... 30%

1. Compressed Air Foam System – Apparatus

Please complete and return one sheet for each apparatus to be considered for CAFS Credit.

UNIT NUMBER	**N/A**	
YEAR MODEL		
MAKE		
TANK CAPACITY		**GALLONS** (minimum 300 Gallons)
PUMP CAPACITY		**GPM** (minimum 500 GPM)
COMPRESSOR CAPACITY		**SCFM** (minimum 120 SCFM)
FOAM TANK CAPACITY	**20**	**CLASS A / GALLONS** (minimum 20 Gallons)
CLASS A FOAM CONCENTRATE PUMP CAPACITY	**2.5**	**GPM** (minimum 2.5 GPM)

2. Will at least one of the apparatus listed above equipped with the CAFS unit respond on all structure fires on first alarm assignment?

YES X NO

Note: Where multiple apparatus are assigned to respond to a structure fire on first alarm assignment, this means that out of 3 (or more) apparatus initially responding from the assigned area, at least one of the apparatus must be equipped with a CAFS unit. All applications of Class A Foam must be in accordance with manufacturer's specifications.

E. CAFS: TOTAL = 0.0

GRADING WORKSHEET FOR
TEXAS STATE EXCEPTIONS TO THE FSRS

Prorated Exceptions Credit (6.5 points max.) applied to total FSRS Points

$$\text{EXCEPTIONS CREDIT} = \frac{\text{FPCE + FI + PFSE + CCE + CAFS}}{130} \times 6.5 = \underline{4.72}$$

This concludes the Fire Safety Control portion of the questions.

****

The following pertain to training as it applies specifically to the State of Texas.

Item 581
SUPPLEMENTAL CREDIT FOR TRAINING (CTT):

$$\text{CTT} = \frac{\text{CERT + FTS}}{\text{TOTAL \# IN FIRE DEPT.}} \times 3.26 = \underline{0.54}$$

MAXIMUM CREDIT = 3.26 POINTS

Item 590

CREDIT FOR FIRE DEPARTMENT

CFD = CEC + CRP +CPC + CLS + CRLS + CD+ CCP + CT + CTT = **34.35**

Note: Maximum value of CT + CTT = 9.00

FIRE PROTECTION CLASSIFICATION NARRATIVE SUMMARY

Community: Grapevine Counties: Tarrant, Dallas, & Denton

Date of Survey: 9/16/04 Field Representative: Manry

GENERAL:

The Grapevine Fire Department serves the city of Grapevine. The city has a population of approximately 50,000. City last surveyed in 1998.

FIRE ALARM:

Calls for fire and other emergency calls are received at the City of Grapevine Police Department Communications 911 Center which is located on West Dallas Road in Grapevine and covers the entire city. Operators take calls, determine the nature of the emergency and then dispatch fire department personnel by audible alarms at stations and portable radios and pagers carried by all members. Enhanced 911 system utilized.

FIRE DEPARTMENT:

Grapevine Fire Department has five fire stations located throughtout the city. Basic Fire Flow is 3500-gpm, with 6 engine companies required according to *Fire Suppression Rating Schedule* rating criteria. In-service fire department apparatus responding on first alarm to structure fires consists of at least three engines companies and a ladder company. Fire department has 90 paid members.

WATER SUPPLY:

Water supplied from Lake Grapevine Water Treatment Plant and connection supplied from the Trinity River Authority. Four elevated storage facilities provided. All hydrants throughout are standard three way type hydrants.

PUBLIC PROTECTION SURVEY CONTACT SHEET

COMMUNITY: GRAPEVINE STATE: TEXAS DATE: 9/16/04

Please provide the name, address and daytime telephone number for the following community officials:

Office	Name and Address	Phone
Manager	Mr. Roger Nelson City Manager City of Grapevine 200 South Main Grapevine, Texas 76051	817-410-3102
Water Superintendent	Mr. Matthew Singleton Assistant Director of Public Works City of Grapevine 501 Shady Brook Drive. Grapevine, Texas 76051	817-410-3328
Fire Chief	Mr. David Anderson Fire Chief Grapevine Fire Department 601 Boyd Drive Grapevine, Texas 76051	817-410-8100
Communication Director	Mr. Mark Bills Technical Service Manager Grapevine Police Department 307 West Dallas Road	817-410-8100

Principal Contact for this PPC Survey: Mr. David Anderson, Fire Chief

INSURANCE SERVICES OFFICE, INC.

3000 South IH - 35, Suite 225, Austin, TX 78704
(800) 444 – 4554 FAX (800) 736 - 3289

January 2, 2003

David B. Anderson
Fire Chief
Grapevine Fire Department
601 Boyd Dr.
Grapevine, Texas 76501

Dear Chief Anderson:

We are enclosing a Classification Report in response to your recent request. This report covers the major categories which are reviewed in our Fire Suppression Rating Schedule, and which are of importance in determining the fire insurance classifications of communities. During preparation of your Classification Report, we noted we have not received a completed *Questionnaire For Texas* ***Addendum*** *to the Fire Suppression Rating Schedule*. Please complete and return the enclosed Questionnaire.

This Classification Report was developed using the information obtained during our 1992 Grapevine survey and considers that conditions in your city remain the same.

The report refers only to the fire insurance classification of your city and is not for property loss prevention or life safety purposes.

Please contact us if you have any questions concerning the enclosed materials.

Sincerely,

Phillip R. Bradley
Field Representative - Survey Services

encl.

WATER SUPPLY

For the water supply works to be considered adequate under the analysis system used, it should be able to deliver the basic fire flow of 3500-gpm for a 3-hour period and during that period also furnish consumption demands at the maximum daily rate. Since production records indicate that the maximum daily consumption rate has been 11.54 million gallons per day (or a rate of 8000-gpm), the total rate of flow needed for the 3-hour period is 11,500-gpm.

The arterial mains and secondary feeder mains should be of sufficient capacity to deliver the needed fire flows to the various areas of the city. The arterial mains should extend to all areas of the city; they should be looped for mutual support and spaced generally at approximately 3,000-foot intervals or less. The minimum size distribution main should be 6-inches and this size used only in residual 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-inches should be used in commercial and high density residential areas, and this size should be limited to areas with a good gridiron. Valving of mains should be such that not over 1/4-mile of arterial mains, 500-feet of mains in commercial areas nor more than 800-feet of mains in residential areas would be affected by a single break.

Before the water available can be fully utilized by the fire department, there must be sufficient fire hydrants in the vicinity of a fire. The number of needed hydrants varies with the fire flow demand but when the spacing is not over 300-feet in commercial areas and not over 600-feet in one and two family dwelling areas, sufficient hydrants generally should be available. Hydrants should conform with the American Water Works Association standards and the connection from the main to the hydrant should be not less than 6-inches in size. While street intersections are considered preferable hydrant locations, intermediate hydrants are often needed with long blocks. All hydrants should be inspected twice yearly and valves should be inspected annually; complete records should be kept of all inspections.

Improvements which might be made in the water system would include the following suggestions:

1. All storage units, both ground and elevated, should be kept as full as possible at all times. Only the average daily minimum storage can be considered to be available for use during fires.

2. Improvements of the distribution system could be accomplished by the following:

   a. Providing more looped arterial mains in accordance with the guidelines given above.

   b. Improved gridironing of the system, including elimination of dead-end mains which serve fire hydrants.

3. A survey of the hydrant distribution needs to be conducted and a study made as to possible improvements. Where the spacing is considerably in excess of that suggested above, additional hydrants should be installed.

4. A suitable preventative maintenance program needs to be initiated to improve the condition of valves and hydrants. The program should follow the American Water Works Association guidelines and include as a minimum:

   a. Semi-annual inspection and servicing of all fire hydrants; hydrants should be both pressure tested and flow tested.

   b. At least annual operation of all valves in the system with the more important valves being inspected at least twice a year.

5. An investigation should be made of the distribution mains in the vicinity of E. Northwest Highway, south of E. Dallas street. The Flow Test (No. 2) made in this area indicates that the quantity available was considerably less than would normally be expected. If the reduced capacity is not due to tuberculation it might be caused by a closed or partially closed valve.

6. Maintaining records up to date is essential, particularly those which concern emergency service. The map of the distribution system showing mains, valves and hydrants should be continuously updated. Also, records of fire hydrants and valve inspections and repairs should be kept.

FIRE DEPARTMENT

For a city 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 pumper should not exceed 1 1/2-miles and for the first due ladder truck, if needed, should not exceed 2 1/2-miles. Equally important as the apparatus is the need for sufficient manpower arriving with the apparatus to effect quick suppression of the fire. Generally, 6 men per company are needed at the fire for optimum utilization of the apparatus, and when the manpower level drops below 4 men per company, the ability to utilize the apparatus effectively is seriously impaired. Also, a comprehensive training program is essential for effective fire ground operations. Another important phase of our evaluation is the receipt of alarms and dispatching of apparatus.

At the present time, the apparatus needs of your city under our criteria could be reasonably satisfied by maintaining four engine companies and one ladder company in service with one pumper and one ladder truck in reserve.

Improvements which might be made in the fire department would include the following suggestions:

7. In accordance with the fire department proposal, a 4th fire station should be erected in the vicinity of the street intersection of Hughes Road and Hollyberry Trail. This station should house one engine company.

8. The earliest possible completion date should be established for extending Heritage Avenue from Timberline Drive to Hall-Johnson Road, in order to improve first-due response

distances in the southwestern section of the city.

9. If future development continues in the far northeast section of the city, a fifth fire station will be required for this portion of the city.

10. Consideration should be given to the provision of additional paid personnel so that a minimum of four firemen, including a company officer, can be maintained on duty at all times with each of the suggested companies. Some of the additional personnel necessary to maintain minimum company assignments during vacations, sick leave and other days off could also be used for administration, training, fire prevention or maintenance duties as available.

11. Continuing efforts should be made to improve, expand and intensify the training program. Training should include additional building inspections by in-service personnel in order that fire fighting methods can be preplanned and periodically reviewed for all major buildings in the city.

12. Consideration should be given to the appointment of a full-time training officer to supervise the training program for the entire department.

13. A fully adequate training facility should be provided to aid in the training operations. This facility should include as a minimum at least a fire building, burning pit for petroleum fires, a drill tower for hose and ladder evolutions and a fire hydrant connected to an adequate water supply.

14. It is highly desirable to test all apparatus annually and after major repairs; these should include standard service tests of pumpers and should be in accordance with the recommendations of the National Fire Protection Association.

15. Also of importance is the continued testing of all hose. This should be done at least annually at not less than 250-psi.

16. A continuing effort should be made toward improved records; detailed information should be kept on file in regard to alarm and responses, fires and fire losses, personnel, training, apparatus and apparatus test and hose and hose tests.

The cooperation given Mr. Arterbury during the survey is greatly appreciated. If any discussion of our suggestions is desired, we wish to assure you of our cooperation. If the city has some contemplated improvements they wish to review with us, we are available to discuss the effect the improvements would have upon the city's classification. We would suggest, however, that such contemplated changes also be submitted to the State Board of Insurance for review.

Very truly yours,

W. Michael Pietsch

W. Michael Pietsch, P.E.
Senior Engineer
Public Protection

WMP/cjp

cc: Mr. Bill Powers, Fire Chief
Mr. Matthew Singleton, Assistant Director of Public Works

PUBLIC PROTECTION CLASSIFICATION

IMPROVEMENT STATEMENTS
FOR
Grapevine, TX

Prepared By

INSURANCE SERVICES OFFICE, INC.
3000 South IH-35
P. O. Box 3540
Austin, Texas 78764 - 3540

December 20, 2002

The following statements are based upon the criteria contained in our Fire Suppression Rating Schedule and upon conditions in Grapevine, Texas on December 11, 1992. They indicate the performance needed to receive full credit for the specific item in the Schedule, and the quantity you have provided. Partial improvement will result in receiving a partial increase in the credit. Grapevine achieved 58.16% for Class 5; Class 5 applies when points are in the 50.00%-59.99% range.

These statements relate only to the fire insurance classification of your City. They are not for property loss prevention or life safety purposes and no life safety or property loss prevention recommendations are made.

RECEIVING AND HANDLING FIRE ALARMS

Credit For Telephone Service (Item 414). Actual 1.90%; Maximum 2.00%

X out

For maximum credit in the Schedule, there should be an emergency line separate for from the fire and business line for the use of automatic telephone dialing equipment to report alarms from private fire detection systems.

For maximum credit in the Schedule, both the number to report a fire and the fire department business number should be listed under "Fire Department" in the white pages directory. Your fire number is listed; however, your business number is not listed.

Call data

Credit for Operators (Item 422) Actual 1.42%; Maximum 3.00%

For maximum credit in the Schedule, 5 operators are needed on duty at all times. You have 2.37 operators on duty.

Credit For Dispatch Circuits (Item 432). Actual 2.83%; Maximum 5.00%

For maximum credit in the Schedule, the radio alarm dispatch circuit should be supervised in accordance with National Fire Protection Association Standard 1221.

For maximum credit in the Schedule, the alarm dispatch circuit(s) should have emergency power supply in accordance with National Fire Protection Association Standard, 1221.

Total Credit for Receiving and Handling Fire Alarms (440) Actual 6.15%; Max. 10.00%

Texas Department of Insurance
333 Guadalupe Street P.O. Box 149104 Austin, Texas 78714-9104
512/463-6169

PPC SUBMITTAL

Municipality Grapevine **State** TX **Population** 30000

Date Surveyed 12/11/1992 **Total Credit** 62.75 **Class** 4

Date Submitted 04/28/1998 **Effective Date** 08/01/1998

SUMMARY OF CREDIT

Feature	Assigned	Maximum Credit
Receiving and Handling Fire Alarms	6.15	10.0%
Water Supply	34.89	40.00
Fire Department	25.46	50.00
Texas F.S. Addendum Credit (CTX)	3.51	5.00
* Divergence	< 7.26 >	
Total Points	62.75	

The Public Protection Class is based on the total percentage credit as follows:

Class	Percentage %
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

Texas Department Of Insurance
Approved by
Rose Ann Reeser

MAY 26 1998

Rose Ann Reeser
Associate Commissioner

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

The above classification has been developed for use in property insurance premium calculations only.

The Texas Fire Safety Addendum Credit (CTX) is developed from a formula which results in a maximum additional credit of 6.5 points to the total points credited under the Fire Suppression Rating Schedule. Within this formula for addendum credit (CTX) Grapevine received 0.00 points for Fire Prevention Code Enforcement (FPCE), 0.00 points for Fire Investigations (FI), 0.00 points for Public Fire Safety Education (PFSE), 0.00 points for Construction Code Enforcement (CCE), and 0.00 points for Compressed Air Foam System (CAFS). The application of these points follows this formula:

CTX = {(FPCE + FI + PFSE + CCE + CAFS) ÷ 130} X 6.5

Where the maximum range for the categories is:

4 people
Insp - fire

FPCE	= 30	21.7
FI	= 10	7.8
PFSE.	= 30	21.8
CCE	= 30	26.5
CAFS	= 30	~~0~~

3.
3.58

or, in the case of **Grapevine**

CTX = {(0.00 + 0.00 + 0.00 + 0.00 + 0.00) ÷ 130} X 6.5 = 0.00 3.89 ✓

58.16

62.75
3.89
66.64

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 29200

Date Surveyed December 11, 1992 Total Credit 58.16 Class 5

RECEIVING AND HANDLING FIRE ALARMS

This section of the Fire Suppression Rating Schedule review the facilities provided for the general public to report fires, and for the operator on duty at the communication center to dispatch fire department companies to the fires.

		Credit	
		Actual	Maximum
1.	(Item 414) Credit for Telephone Service This item reviews the facilities provided for the public to report fires, including the listing of fire and business numbers in the telephone directory.	1.90	2.00
2.	(Item 422) Credit for Operators This item reviews the number of operators on-duty at the communication center to handle fire calls.	1.42	3.00
3.	(Item 432) Credit for Dispatch Circuits This item reviews the dispatch circuit facilities used to transmit alarms to fire department members.	2.83	5.00
4.	(Item 440) Total Credit for Receiving and Handling Fire Alarms	6.15	10.00

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 29200

Date Surveyed December 11, 1992 Total Credit 58.16 Class 5

FIRE DEPARTMENT

This section of the Fire Suppression Rating Schedule review the engine and ladder-service companies, equipment carried, response to fires, training, and available fire fighters.

		Credit	
		Actual	Maximum
1.	(Item 513) Credit for Engine Companies This item reviews the number of engine companies and the hose and equipment carried.	6.74	10.00
2.	(Item 523) Credit for Reserve Pumpers This item reviews the number of reserve pumpers their pump capacity and the hose and equipment carried on each.	0.59	1.00
3.	(Item 532) Credit for Pump Capacity This item reviews the total available pump capacity.	5.00	5.00
4.	(Item 549) Credit for Ladder Service This item reviews the number of ladder and service companies and the equipment carried.	2.00	5.00

CLASSIFICATION DETAILS

FIRE DEPARTMENT
(continued)

		Credit	
		Actual	Maximum
5.	(Item 553) Credit for Reserve Ladder Service This item reviews the number of reserve ladder and service trucks, and the equipment carried	0.16	1.00
6.	(Item 561) Credit for Distribution This item reviews the percent of the built-upon area of the city which has an adequately-equipped responding first-due engine company within 1 1/2 miles and an adequately-equipped, responding ladder-service company within 2 1/2 miles.	1.72	4.00
7.	(Item 571) Credit for Company Personnel This item reviews the average number of equivalent fire fighters and company officers on duty with existing companies.	6.17	15.00+
8.	(Item 581) Credit for Training This item review the training facilities and their use.	2.31	9.00
	Additional Credit for Training (CTT):	0.00	
9.	(Item 590) Total Credit for Fire Department	24.69	50.00+

+ This indicates that credit for manning is open-ended, with no maximum credit for this item.

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 29200

Date Surveyed December 11, 1992 Total Credit 58.16 Class 5

WATER SUPPLY

This section of the Fire Suppression Rating Schedule reviews the water supply system that is available for fire suppression in the city.

		Credit	
		Actual	Maximum
1.	(Item 616) Credit for the Water System This item review the supply works, the main capacity and hydrant distribution.	31.18	35.00
2.	(Item 621) Credit for Hydrants This item reviews the type of hydrants, and method of installation	2.00	2.00
3.	(Item 631) Credit for Inspection and Condition of Hydrants This item reviews the frequency of inspections of hydrants and their condition.	1.71	3.00
4.	(Item 640) Total Credit for Water Supply	34.89	40.00

CLASSIFICATION DETAILS

Municipality Grapevine State Texas Population 29200

Date Surveyed December 11, 1992 Total Credit 58.16 Class 5

SUMMARY OF CREDIT

Feature	Assigned	Maximum Credit
Receiving and Handling Fire Alarms	6.15%	10.0%
Fire Department	24.69	50.00
Water Supply	34.89	40.00
Texas F.S. Addendum Credit (CTX)	0.00	5.00
* Divergence	<7.57>	
Total Points Credit:	58.16%	

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

The Public Protection Class is based on the total percentage credit as follows:

Class	Percentage %
1	90.00 or more
2	80.00 to 89.99
3	70.00 to 79.99
4	60.00 to 69.99
5	50.00 to 59.99
6	40.00 to 49.99
7	30.00 to 39.99
8	20.00 to 29.99
9	10.00 to 19.99
10	0 to 9.99

FIRE DEPARTMENT

Credit For Engine Companies (Item 513). Actual 6.74%; Maximum 10.00%

For maximum credit in the Schedule, 4 engine companies are needed in your City. These are calculated as follows:

3 for the Basic Fire Flow of 3,500, gpm.
1 additional for the size of the area served.
0 additional for response outside the city limits.

You have 3 engine companies and 1 engine ladder company in service. These are credited as follows:

52% for E/L1 because of insufficient equipment, pumper tests.

67% for E-1 because of insufficient equipment, pumper tests. There should be at least 1200 feet of 2-1/2 inch or larger hose, for maximum credit.

70% for E-2 because of insufficient equipment, pumper tests.

81% for E-3 because of insufficient equipment, pumper tests.

Credit For Reserve Pumpers (Item 523). Actual 0.59%; Maximum 1.00%

For maximum credit in the Schedule, 1 fully equipped pumper is needed. This is credited as follows:

48% for RE-1 because of insufficient equipment, pumper tests.

Credit For Pump Capacity (Item 532). Actual 5.00%; Maximum 5.00%

Credit For Ladder Service (Item 549). Actual 2.00%; Maximum 5.00%

For maximum credit in the Schedule, 1 ladder company and 1 service company is needed in your City. This is calculated as follows:

1 ladder company for standard response.
1 service company for standard response.

You have 1 engine-ladder company. Credit is calculated as follows:

80 percent for engine-ladder company because of insufficient equipment.

Credit For Reserve Ladder Service (Item 553). Actual 0.16%; Maximum 1.00%

For maximum credit in the Schedule, 1 fully equipped reserve ladder truck is needed. Reserve ladder equipment is credited at 16%.

Credit for Distribution (Item 561) Actual 1.72%; Maximum 4.00%

For maximum credit in the Schedule, all sections of the city with hydrant protection should be within 1-1/2 miles of an adequately equipped engine company and within 2-1/2 miles of an adequately equipped service company. The distance to be measure along all-weather roads.

Credit For Company Personnel (Item 571). Actual 6.17%; Maximum 15.00%

An increase in the on-duty company personnel by one person will increase the fire department credit by 0.50%.

Credit For Training (Item 581). Actual 2.31%; Maximum 9.00%

For maximum credit in the Schedule, complete facilities should be provided for training and the training program should be improved. You received 26 percent credit for the current training program and the use of facilities.

For maximum credit in the Schedule, company members should make pre-fire planning inspections of each commercial, industrial, institutional and other similar-type building twice a year. Records of the inspection should include complete and up-to-date notes and sketches.

Total Credit for Fire Department (Item 590) Actual 24.69%, Maximum 50.00%

WATER SUPPLY

Credit For The Water system (Item 616). Actual 31.18%; Maximum 35.00%

For maximum credit in the Schedule, the needed fire flows should be available at each location in the City. Needed fire flows of 2,500 gpm and less should be available for 2 hours, 3,000, and 3,500 gpm for 3 hours and all others for 4 hours. See the attached table for an evaluation of fire flow tests made at representative locations in your City.

All AWWA standard hydrants within 1,000 feet of a building, measured as hose can be laid by apparatus, are credited; 1,000 gpm for hydrants within 300 feet; 670 gpm for 301 to 600 feet; and 250 gpm for 601 to 1,000 feet. Credit is reduced when hydrants lack a pumper outlet, and is further reduced when they have only a single 2-1/2 inch outlet.

Credit For Hydrants (Item 621). Actual 2.00%; Maximum 2.00%

Credit For Inspection and Condition of Hydrants (Item 631). Act 1.71%; Maximum 3.00%

For maximum credit in the Schedule, all hydrants should be inspected twice a year, the inspection should include operation and a test at domestic pressure. Records should be kept of the inspections. Hydrants should be conspicuous, well located for use by a pumper, and in good condition.

Total Water Supply Credit (Item 640) Actual 34.89%; Maximum 40.00%

FIRE FLOW TESTS

Grapevine, TX

Tests Made on December 11, 1992

Test No.	Needed Fire Flow* gpm	Limited By Supply Works	Limited By Distribution Mains	Limited by Hydrant Spacing
1	3000			
2	3500		2200	
	2500		2200	
	1500			
3	2500			
	1500			1250
4	1500			
5	3500			3340
	3500			1590
	1500			
6	1000			
7	3500		3100	1170
	300			
8	3500			
	3000			
	2250			
9	2250			
	1750			

- Needed fire flows exceeding 3500 gpm are not considered in determining the classification of the municipality.

FIRE FLOW TESTS

Grapevine, TX

Tests Made on December 11, 1992

Test No.	Needed Fire Flow* gpm	Limited By Supply Works	Limited By Distribution Mains	Limited by Hydrant Spacing
10	2500			
	2250			
11	2500			1920
	1500			
12	2000			
	1000			
13	3500			
14	3500			1920
15	750			
16	100			
17	2250			
18	2500			
	2000			1920
19	2000			
20	1000			
21	3000			2590
	2000			
22	1500			

* Needed fire flows exceeding 3500 gpm are not considered in determining the classification of the municipality.