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February 27, 2017

Mr. Randy Rhoads, Mayor  
Lees Summit FPSA  
220 SE Green St  
Lee's Summit, Missouri, 64063

RE: Lees Summit Fpsa, Cass, Jackson Counties, Missouri  
Public Protection Classification: 02/2X  
Effective Date: June 01, 2017

Dear Mr. Randy Rhoads,

We wish to thank you Mr. Mark Schaufler and Chief Rick Poeschl for your cooperation during our recent Public Protection Classification (PPC) survey. ISO has completed its analysis of the structural fire suppression delivery system provided in your community. The resulting classification is indicated above.

If you would like to know more about your community's PPC classification, or if you would like to learn about the potential effect of proposed changes to your fire suppression delivery system, please call us at the phone number listed below.

ISO's Public Protection Classification Program (PPC) plays an important role in the underwriting process at insurance companies. In fact, most U.S. insurers – including the largest ones – use PPC information as part of their decision-making when deciding what business to write, coverage's to offer or prices to charge for personal or commercial property insurance.

Each insurance company independently determines the premiums it charges its policyholders. The way an insurer uses ISO's information on public fire protection may depend on several things – the company's fire-loss experience, ratemaking methodology, underwriting guidelines, and its marketing strategy.

Through ongoing research and loss experience analysis, we identified additional differentiation in fire loss experience within our PPC program, which resulted in the revised classifications. We based the differing fire loss experience on the fire suppression capabilities of each community. The new classifications will improve the predictive value for insurers while benefiting both commercial and residential property owners. We've published the new classifications as "X" and "Y" – formerly the "9" and "8B" portion of the split classification, respectively. For example:

- A community currently graded as a split 6/9 classification will now be a split 6/6X classification; with the "6X" denoting what was formerly classified as "9."
- Similarly, a community currently graded as a split 6/8B classification will now be a split 6/6Y classification, the "6Y" denoting what was formerly classified as "8B."

- Communities graded with single "9" or "8B" classifications will remain intact.
- Properties over 5 road miles from a recognized fire station would receive a class 10.

PPC is important to communities and fire departments as well. Communities whose PPC improves may get lower insurance prices. PPC also provides fire departments with a valuable benchmark, and is used by many departments as a valuable tool when planning, budgeting and justifying fire protection improvements.

ISO appreciates the high level of cooperation extended by local officials during the entire PPC survey process. The community protection baseline information gathered by ISO is an essential foundation upon which determination of the relative level of fire protection is made using the Fire Suppression Rating Schedule.

The classification is a direct result of the information gathered, and is dependent on the resource levels devoted to fire protection in existence at the time of survey. Material changes in those resources that occur after the survey is completed may affect the classification. Although ISO maintains a pro-active process to keep baseline information as current as possible, in the event of changes please call us at 1-800-444-4554, option 2 to expedite the update activity.

ISO is the leading supplier of data and analytics for the property/casualty insurance industry. Most insurers use PPC classifications for underwriting and calculating premiums for residential, commercial and industrial properties. The PPC program is not intended to analyze all aspects of a comprehensive structural fire suppression delivery system program. It is not for purposes of determining compliance with any state or local law, nor is it for making loss prevention or life safety recommendations.

If you have any questions about your classification, please let us know.

Sincerely,

*Dominic Santanna*

Dominic Santanna  
Manager -National Processing Center

cc: Ms. Vickie McLaughlin, Manager, Jackson County PWSD 12  
Mr. Mark Schaufler, Director, Lees Summit Water Dept  
Mr. John Johnson, Manager, Unity Village Water Department  
Ms. Kim Harris, Communications Supervisor, Lees Summit Fire Dispatch  
Chief Rick Poeschl, Chief, Lees Summit Fire Department  
Chief Jim Eden, Assistant Chief, Lees Summit Fire Department

**Public Protection Classification  
(PPC™)  
Summary Report**

**Lees Summit FPSA**

**MISSOURI**

**Prepared by**

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**Report Created February 2017**

**Effective June 1, 2017**



## Background Information

### Introduction

ISO collects and evaluates information from communities in the United States on their structure fire suppression capabilities. The data is analyzed using our Fire Suppression Rating Schedule (FSRS) and then a Public Protection Classification (PPC™) grade is assigned to the community. The surveys are conducted whenever it appears that there is a possibility of a PPC change. As such, the PPC program provides important, up-to-date information about fire protection services throughout the country.

The FSRS recognizes fire protection features only as they relate to suppression of first alarm structure fires. In many communities, fire suppression may be only a small part of the fire department's overall responsibility. ISO recognizes the dynamic and comprehensive duties of a community's fire service, and understands the complex decisions a community must make in planning and delivering emergency services. However, in developing a community's PPC grade, only features related to reducing property losses from structural fires are evaluated. Multiple alarms, simultaneous incidents and life safety are not considered in this evaluation. The PPC program evaluates the fire protection for small to average size buildings. Specific properties with a Needed Fire Flow in excess of 3,500 gpm are evaluated separately and assigned an individual PPC grade.

A community's investment in fire mitigation is a proven and reliable predictor of future fire losses. Statistical data on insurance losses bears out the relationship between excellent fire protection – as measured by the PPC program – and low fire losses. So, insurance companies use PPC information for marketing, underwriting, and to help establish fair premiums for homeowners and commercial fire insurance. In general, the price of fire insurance in a community with a good PPC grade is substantially lower than in a community with a poor PPC grade, assuming all other factors are equal.

ISO is an independent company that serves insurance companies, communities, fire departments, insurance regulators, and others by providing information about risk. ISO's expert staff collects information about municipal fire suppression efforts in communities throughout the United States. In each of those communities, ISO analyzes the relevant data and assigns a PPC grade – a number from 1 to 10. Class 1 represents an exemplary fire suppression program, and Class 10 indicates that the area's fire suppression program does not meet ISO's minimum criteria.

ISO's PPC program evaluates communities according to a uniform set of criteria, incorporating nationally recognized standards developed by the National Fire Protection Association and the American Water Works Association. A community's PPC grade depends on:

- **Needed Fire Flows**, which are representative building locations used to determine the theoretical amount of water necessary for fire suppression purposes.
- **Emergency Communications**, including emergency reporting, telecommunicators, and dispatching systems.
- **Fire Department**, including equipment, staffing, training, geographic distribution of fire companies, operational considerations, and community risk reduction.
- **Water Supply**, including inspection and flow testing of hydrants, alternative water supply operations, and a careful evaluation of the amount of available water compared with the amount needed to suppress fires up to 3,500 gpm.



## **Data Collection and Analysis**

ISO has evaluated and classified over 48,000 fire protection areas across the United States using its FSRs. A combination of meetings between trained ISO field representatives and the dispatch center coordinator, community fire official, and water superintendent is used in conjunction with a comprehensive questionnaire to collect the data necessary to determine the PPC grade. In order for a community to obtain a grade better than a Class 9, three elements of fire suppression features are reviewed. These three elements are Emergency Communications, Fire Department, and Water Supply.

A review of the **Emergency Communications** accounts for 10% of the total classification. This section is weighted at **10 points**, as follows:

- Emergency Reporting 3 points
- Telecommunicators 4 points
- Dispatch Circuits 3 points

A review of the **Fire Department** accounts for 50% of the total classification. ISO focuses on a fire department's first alarm response and initial attack to minimize potential loss. The fire department section is weighted at **50 points**, as follows:

- Engine Companies 6 points
- Reserve Pumpers 0.5 points
- Pump Capacity 3 points
- Ladder/Service Companies 4 points
- Reserve Ladder/Service Trucks 0.5 points
- Deployment Analysis 10 points
- Company Personnel 15 points
- Training 9 points
- Operational considerations 2 points
- Community Risk Reduction 5.5 points (in addition to the 50 points above)

A review of the **Water Supply** system accounts for 40% of the total classification. ISO reviews the water supply a community uses to determine the adequacy for fire suppression purposes. The water supply system is weighted at **40 points**, as follows:

- Credit for Supply System 30 points
- Hydrant Size, Type & Installation 3 points
- Inspection & Flow Testing of Hydrants 7 points

There is one additional factor considered in calculating the final score – **Divergence**.

Even the best fire department will be less than fully effective if it has an inadequate water supply. Similarly, even a superior water supply will be less than fully effective if the fire department lacks the equipment or personnel to use the water. The FSRS score is subject to modification by a divergence factor, which recognizes disparity between the effectiveness of the fire department and the water supply.

The Divergence factor mathematically reduces the score based upon the relative difference between the fire department and water supply scores. The factor is introduced in the final equation.

### **PPC Grade**

The PPC grade assigned to the community will depend on the community's score on a 100-point scale:

<b>PPC</b>	<b>Points</b>
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	0.00 to 9.99

The classification numbers are interpreted as follows:

- Class 1 through (and including) Class 8 represents a fire suppression system that includes an FSRS creditable dispatch center, fire department, and water supply.
- Class 8B is a special classification that recognizes a superior level of fire protection in otherwise Class 9 areas. It is designed to represent a fire protection delivery system that is superior except for a lack of a water supply system capable of the minimum FSRS fire flow criteria of 250 gpm for 2 hours.
- Class 9 is a fire suppression system that includes a creditable dispatch center, fire department but no FSRS creditable water supply.
- Class 10 does not meet minimum FSRS criteria for recognition, including areas that are beyond five road miles of a recognized fire station.



## New PPC program changes effective July 1, 2014

We have revised the PPC program to capture the effects of enhanced fire protection capabilities that reduce fire loss and fire severity in Split Class 9 and Split Class 8B areas (as outlined below). This new structure benefits the fire service, community, and property owner.

### New classifications

Through ongoing research and loss experience analysis, we identified additional differentiation in fire loss experience within our PPC program, which resulted in the revised classifications. We based the differing fire loss experience on the fire suppression capabilities of each community. The new PPC classes will improve the predictive value for insurers while benefiting both commercial and residential property owners. Here are the new classifications and what they mean.

### Split classifications

When we develop a split classification for a community — for example 5/9 — the first number is the class that applies to properties within 5 road miles of the responding fire station and 1,000 feet of a creditable water supply, such as a fire hydrant, suction point, or dry hydrant. The second number is the class that applies to properties within 5 road miles of a fire station but beyond 1,000 feet of a creditable water supply. We have revised the classification to reflect more precisely the risk of loss in a community, replacing Class 9 and 8B in the second part of a split classification with revised designations.

### What's changed with the new classifications?

We've published the new classifications as "X" and "Y" — formerly the "9" and "8B" portion of the split classification, respectively. For example:

- A community currently displayed as a split 6/9 classification will now be a split 6/6X classification; with the "6X" denoting what was formerly classified as "9".
- Similarly, a community currently graded as a split 6/8B classification will now be a split 6/6Y classification, the "6Y" denoting what was formerly classified as "8B".
- Communities graded with single "9" or "8B" classifications will remain intact.

Prior Classification	New Classification
1/9	1/1X
2/9	2/2X
3/9	3/3X
4/9	4/4X
5/9	5/5X
6/9	6/6X
7/9	7/7X
8/9	8/8X
9	9

Prior Classification	New Classification
1/8B	1/1Y
2/8B	2/2Y
3/8B	3/3Y
4/8B	4/4Y
5/8B	5/5Y
6/8B	6/6Y
7/8B	7/7Y
8/8B	8/8Y
8B	8B

### **What's changed?**

As you can see, we're still maintaining split classes, but it's how we represent them to insurers that's changed. The new designations reflect a reduction in fire severity and loss and have the potential to reduce property insurance premiums.

### **Benefits of the revised split class designations**

- To the fire service, the revised designations identify enhanced fire suppression capabilities used throughout the fire protection area
- To the community, the new classes reward a community's fire suppression efforts by showing a more reflective designation
- To the individual property owner, the revisions offer the potential for decreased property insurance premiums

### **New water class**

Our data also shows that risks located more than 5 but less than 7 road miles from a responding fire station with a creditable water source within 1,000 feet had better loss experience than those farther than 5 road miles from a responding fire station with no creditable water source. We've introduced a new classification —10W— to recognize the reduced loss potential of such properties.

### **What's changed with Class 10W?**

Class 10W is property-specific. Not all properties in the 5-to-7-mile area around the responding fire station will qualify. The difference between Class 10 and 10W is that the 10W-graded risk or property is within 1,000 feet of a creditable water supply. Creditable water supplies include fire protection systems using hauled water in any of the split classification areas.

### **What's the benefit of Class 10W?**

10W gives credit to risks within 5 to 7 road miles of the responding fire station and within 1,000 feet of a creditable water supply. That's reflective of the potential for reduced property insurance premiums.

### **What does the fire chief have to do?**

Fire chiefs don't have to do anything at all. The revised classifications went in place automatically effective July 1, 2014 (July 1, 2015 for Texas).

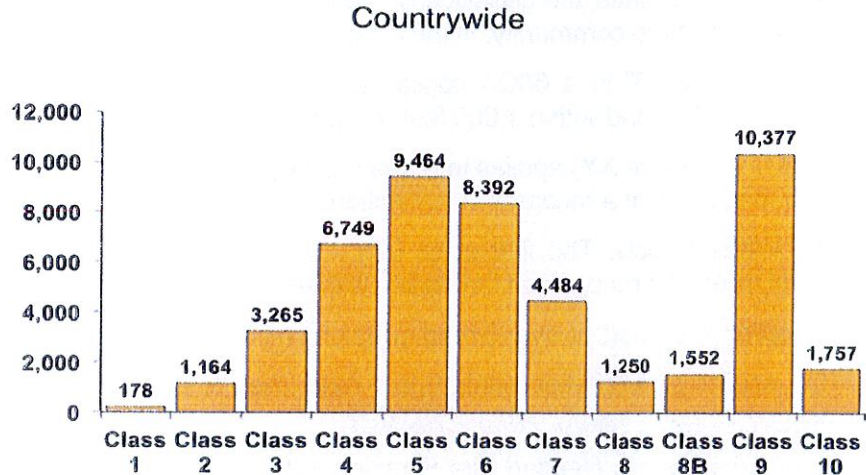
### **What if I have additional questions?**

Feel free to contact ISO at 800.444.4554 or email us at [PPC-Cust-Serv@iso.com](mailto:PPC-Cust-Serv@iso.com).



## Distribution of PPC Grades

The 2016 published countrywide distribution of communities by the PPC grade is as follows:



## Assistance

The PPC program offers help to communities, fire departments, and other public officials as they plan for, budget, and justify improvements. ISO is also available to assist in the understanding of the details of this evaluation.

The PPC program representatives can be reached by telephone at (800) 444-4554. The technical specialists at this telephone number have access to the details of this evaluation and can effectively speak with you about your questions regarding the PPC program. What's more, we can be reached via the internet at [www.isomitigation.com/talk/](http://www.isomitigation.com/talk/).

We also have a website dedicated to our Community Hazard Mitigation Classification programs at [www.isomitigation.com](http://www.isomitigation.com). Here, fire chiefs, building code officials, community leaders and other interested citizens can access a wealth of data describing the criteria used in evaluating how cities and towns are protecting residents from fire and other natural hazards. This website will allow you to learn more about the PPC program. The website provides important background information, insights about the PPC grading processes and technical documents. ISO is also pleased to offer Fire Chiefs Online — a special, secured website with information and features that can help improve your PPC grade, including a list of the Needed Fire Flows for all the commercial occupancies ISO has on file for your community. Visitors to the site can download information, see statistical results and also contact ISO for assistance.

In addition, on-line access to the FSRS and its commentaries is available to registered customers for a fee. However, fire chiefs and community chief administrative officials are given access privileges to this information without charge.

\* To become a registered fire chief or community chief administrative official, register at [www.isomitigation.com](http://www.isomitigation.com).

## PPC Review

ISO concluded its review of the fire suppression features being provided for Lees Summit FPSA. The resulting community classification is **Class 02/2X**.

If the classification is a single class, the classification applies to properties with a Needed Fire Flow of 3,500 gpm or less in the community. If the classification is a split class (e.g., 6/XX):

- The first class (e.g., "6" in a 6/XX) applies to properties within 5 road miles of a recognized fire station and within 1,000 feet of a fire hydrant or alternate water supply.
- The second class (XX or XY) applies to properties beyond 1,000 feet of a fire hydrant but within 5 road miles of a recognized fire station.
- Alternative Water Supply: The first class (e.g., "6" in a 6/10) applies to properties within 5 road miles of a recognized fire station with no hydrant distance requirement.
- Class 10 applies to properties over 5 road miles of a recognized fire station.
- Class 10W applies to properties within 5 to 7 road miles of a recognized fire station with a recognized water supply within 1,000 feet.
- Specific properties with a Needed Fire Flow in excess of 3,500 gpm are evaluated separately and assigned an individual classification.

FSRS Feature	Earned Credit	Credit Available
<b>Emergency Communications</b>		
414. Credit for Emergency Reporting	2.40	3
422. Credit for Telecommunicators	4.00	4
432. Credit for Dispatch Circuits	3.00	3
<b>440. Credit for Emergency Communications</b>	<b>9.40</b>	<b>10</b>
<b>Fire Department</b>		
513. Credit for Engine Companies	5.94	6
523. Credit for Reserve Pumpers	0.49	0.50
532. Credit for Pump Capacity	3.00	3
549. Credit for Ladder Service	0.86	4
553. Credit for Reserve Ladder and Service Trucks	0.17	0.50
561. Credit for Deployment Analysis	3.83	10
571. Credit for Company Personnel	9.56	15
581. Credit for Training	8.00	9
730. Credit for Operational Considerations	2.00	2
<b>590. Credit for Fire Department</b>	<b>33.85</b>	<b>50</b>
<b>Water Supply</b>		
616. Credit for Supply System	29.34	30
621. Credit for Hydrants	2.87	3
631. Credit for Inspection and Flow Testing	6.39	7
<b>640. Credit for Water Supply</b>	<b>38.60</b>	<b>40</b>
<b>Divergence</b>	<b>-5.76</b>	<b>--</b>
<b>1050. Community Risk Reduction</b>	<b>4.45</b>	<b>5.50</b>
<b>Total Credit</b>	<b>80.54</b>	<b>105.50</b>



## **Emergency Communications**

Ten percent of a community's overall score is based on how well the communications center receives and dispatches fire alarms. Our field representative evaluated:

- Communications facilities provided for the general public to report structure fires
- Enhanced 9-1-1 Telephone Service including wireless
- Computer-aided dispatch (CAD) facilities
- Alarm receipt and processing at the communication center
- Training and certification of telecommunicators
- Facilities used to dispatch fire department companies to reported structure fires

	<b>Earned Credit</b>	<b>Credit Available</b>
414. Credit Emergency Reporting	<b>2.40</b>	3
422. Credit for Telecommunicators	<b>4.00</b>	4
432. Credit for Dispatch Circuits	<b>3.00</b>	3
<b>Item 440. Credit for Emergency Communications:</b>	<b>9.40</b>	<b>10</b>

### **Item 414 - Credit for Emergency Reporting (3 points)**

The first item reviewed is Item 414 "Credit for Emergency Reporting (CER)". This item reviews the emergency communication center facilities provided for the public to report fires including 911 systems (Basic or Enhanced), Wireless Phase I and Phase II, Voice over Internet Protocol, Computer Aided Dispatch and Geographic Information Systems for automatic vehicle location. ISO uses National Fire Protection Association (NFPA) 1221, *Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems* as the reference for this section.

<b>Item 410. Emergency Reporting (CER)</b>	<b>Earned Credit</b>	<b>Credit Available</b>
<b>A./B. Basic 9-1-1, Enhanced 9-1-1 or No 9-1-1</b> For maximum credit, there should be an Enhanced 9-1-1 system, Basic 9-1-1 and No 9-1-1 will receive partial credit.	<b>20.00</b>	<b>20</b>
<b>1. E9-1-1 Wireless</b> Wireless Phase I using Static ALI (automatic location identification) Functionality (10 points); Wireless Phase II using Dynamic ALI Functionality (15 points); Both available will be 25 points	<b>25.00</b>	<b>25</b>
<b>2. E9-1-1 Voice over Internet Protocol (VoIP)</b> Static VoIP using Static ALI Functionality (10 points); Nomadic VoIP using Dynamic ALI Functionality (15 points); Both available will be 25 points	<b>25.00</b>	<b>25</b>
<b>3. Computer Aided Dispatch</b> Basic CAD (5 points); CAD with Management Information System (5 points); CAD with <u>Interoperability</u> (5 points)	<b>10.00</b>	<b>15</b>
<b>4. Geographic Information System (GIS/AVL)</b> <u>The PSAP uses a fully integrated CAD/GIS management system with automatic vehicle location (AVL) integrated with a CAD system providing dispatch assignments.</u>  * The individual fire departments being dispatched <u>do not</u> need GIS/AVL capability to obtain this credit.	<b>0.00</b>	<b>15</b>
<b>Review of Emergency Reporting total:</b>	<b>80.00</b>	<b>100</b>

**Item 422- Credit for Telecommunicators (4 points)**

The second item reviewed is Item 422 "Credit for Telecommunicators (TC)". This item reviews the number of Telecommunicators on duty at the center to handle fire calls and other emergencies. All emergency calls including those calls that do not require fire department action are reviewed to determine the proper staffing to answer emergency calls and dispatch the appropriate emergency response. NFPA 1221, *Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems*, recommends that ninety-five percent of emergency calls shall be answered within 15 seconds and ninety-nine percent of emergency calls shall be answered within 40 seconds. In addition, NFPA recommends that ninety percent of emergency alarm processing shall be completed within 60 seconds and ninety-nine percent of alarm processing shall be completed within 90 seconds of answering the call.



To receive full credit for operators on duty, ISO must review documentation to show that the communication center meets NFPA 1221 call answering and dispatch time performance measurement standards. This documentation may be in the form of performance statistics or other performance measurements compiled by the 9-1-1 software or other software programs that are currently in use such as Computer Aided Dispatch (CAD) or Management Information System (MIS).

<b>Item 420. Telecommunicators (CTC)</b>	<b>Earned Credit</b>	<b>Credit Available</b>
<p><b>A1. Alarm Receipt (AR)</b></p> <p>Receipt of alarms shall meet the requirements in accordance with the criteria of NFPA 1221</p>	20.00	20
<p><b>A2. Alarm Processing (AP)</b></p> <p>Processing of alarms shall meet the requirements in accordance with the criteria of NFPA 1221</p>	20.00	20
<p><b>B. Emergency Dispatch Protocols (EDP)</b></p> <p>Telecommunicators have emergency dispatch protocols (EDP) containing questions and a decision-support process to facilitate correct call categorization and prioritization.</p>	20.00	20
<p><b>C. Telecommunicator Training and Certification (TTC)</b></p> <p>Telecommunicators meet the qualification requirements referenced in NFPA 1061, <i>Standard for Professional Qualifications for Public Safety Telecommunicator</i>, and/or the Association of Public-Safety Communications Officials - International (APCO) <i>Project 33</i>. Telecommunicators are certified in the knowledge, skills, and abilities corresponding to their job functions.</p>	20.00	20
<p><b>D. Telecommunicator Continuing Education and Quality Assurance (TQA)</b></p> <p>Telecommunicators participate in continuing education and/or in-service training and quality-assurance programs as appropriate for their positions</p>	20.00	20
<p><b>Review of Telecommunicators total:</b></p>	100.00	100

### **Item 432 - Credit for Dispatch Circuits (3 points)**

The third item reviewed is Item 432 "Credit for Dispatch Circuits (CDC)". This item reviews the dispatch circuit facilities used to transmit alarms to fire department members. A "Dispatch Circuit" is defined in NFPA 1221 as "A circuit over which an alarm is transmitted from the communications center to an emergency response facility (ERF) or emergency response units (ERUs) to notify ERUs to respond to an emergency". All fire departments (except single fire station departments with full-time firefighter personnel receiving alarms directly at the fire station) need adequate means of notifying all firefighter personnel of the location of reported structure fires. The dispatch circuit facilities should be in accordance with the general criteria of NFPA 1221. "Alarms" are defined in this Standard as "A signal or message from a person or device indicating the existence of an emergency or other situation that requires action by an emergency response agency".

There are two different levels of dispatch circuit facilities provided for in the Standard – a primary dispatch circuit and a secondary dispatch circuit. In jurisdictions that receive 730 alarms or more per year (average of two alarms per 24-hour period), two separate and dedicated dispatch circuits, a primary and a secondary, are needed. In jurisdictions receiving fewer than 730 alarms per year, a second dedicated dispatch circuit is not needed. Dispatch circuit facilities installed but not used or tested (in accordance with the NFPA Standard) receive no credit.

The score for Credit for Dispatch Circuits (CDC) is influenced by monitoring for integrity of the primary dispatch circuit. There are up to 0.90 points available for this Item. Monitoring for integrity involves installing automatic systems that will detect faults and failures and send visual and audible indications to appropriate communications center (or dispatch center) personnel. ISO uses NFPA 1221 to guide the evaluation of this item. ISO's evaluation also includes a review of the communication system's emergency power supplies.

### **Item 432 "Credit for Dispatch Circuits (CDC)" = 3.00 points**



## **Fire Department**

Fifty percent of a community's overall score is based upon the fire department's structure fire suppression system. ISO's field representative evaluated:

- Engine and ladder/service vehicles including reserve apparatus
- Equipment carried
- Response to reported structure fires
- Deployment analysis of companies
- Available and/or responding firefighters
- Training

	<b>Earned Credit</b>	<b>Credit Available</b>
513. Credit for Engine Companies	<b>5.94</b>	6
523. Credit for Reserve Pumpers	<b>0.49</b>	0.5
532. Credit for Pumper Capacity	<b>3.00</b>	3
549. Credit for Ladder Service	<b>0.86</b>	4
553. Credit for Reserve Ladder and Service Trucks	<b>0.17</b>	0.5
561. Credit for Deployment Analysis	<b>3.83</b>	10
571. Credit for Company Personnel	<b>9.56</b>	15
581. Credit for Training	<b>8.00</b>	9
730. Credit for Operational Considerations	<b>2.00</b>	2
<b>Item 590. Credit for Fire Department:</b>	<b>33.85</b>	<b>50</b>

## **Basic Fire Flow**

The Basic Fire Flow for the community is determined by the review of the Needed Fire Flows for selected buildings in the community. The fifth largest Needed Fire Flow is determined to be the Basic Fire Flow. The Basic Fire Flow has been determined to be 3500 gpm.

### **Item 513 - Credit for Engine Companies (6 points)**

The first item reviewed is Item 513 "Credit for Engine Companies (CEC)". This item reviews the number of engine companies, their pump capacity, hose testing, pump testing and the equipment carried on the in-service pumpers. To be recognized, pumper apparatus must meet the general criteria of NFPA 1901, *Standard for Automotive Fire Apparatus* which include a minimum 250 gpm pump, an emergency warning system, a 300 gallon water tank, and hose. At least 1 apparatus must have a permanently mounted pump rated at 750 gpm or more at 150 psi.

The review of the number of needed pumpers considers the response distance to built-upon areas; the Basic Fire Flow; and the method of operation. Multiple alarms, simultaneous incidents, and life safety are not considered.

The greatest value of A, B, or C below is needed in the fire district to suppress fires in structures with a Needed Fire Flow of 3,500 gpm or less: **7 engine companies**

- a) **7 engine companies** to provide fire suppression services to areas to meet NFPA 1710 criteria or within 1½ miles.
- b) **3 engine companies** to support a Basic Fire Flow of 3500 gpm.
- c) **3 engine companies** based upon the fire department's method of operation to provide a minimum two engine response to all first alarm structure fires.

The FSRS recognizes that there are **7 engine companies** in service.

The FSRS also reviews Automatic Aid. Automatic Aid is considered in the review as assistance dispatched automatically by contractual agreement between two communities or fire districts. That differs from mutual aid or assistance arranged case by case. ISO will recognize an Automatic Aid plan under the following conditions:

- It must be prearranged for first alarm response according to a definite plan. It is preferable to have a written agreement, but ISO may recognize demonstrated performance.
- The aid must be dispatched to all reported structure fires on the initial alarm.
- The aid must be provided 24 hours a day, 365 days a year.

FSRS Item 512.D "Automatic Aid Engine Companies" responding on first alarm and meeting the needs of the city for basic fire flow and/or distribution of companies are factored based upon the value of the Automatic Aid plan (up to 1.00 can be used as the factor). The Automatic Aid factor is determined by a review of the Automatic Aid provider's communication facilities, how they receive alarms from the graded area, inter-department training between fire departments, and the fire ground communications capability between departments.

For each engine company, the credited Pump Capacity (PC), the Hose Carried (HC), the Equipment Carried (EC) all contribute to the calculation for the percent of credit the FSRS provides to that engine company.

**Item 513 "Credit for Engine Companies (CEC)" = 5.94 points**



#### **Item 523 - Credit for Reserve Pumpers (0.50 points)**

The item is Item 523 "Credit for Reserve Pumpers (CRP)". This item reviews the number and adequacy of the pumpers and their equipment. The number of needed reserve pumpers is 1 for each 8 needed engine companies determined in Item 513, or any fraction thereof.

**Item 523 "Credit for Reserve Pumpers (CRP)" = 0.49 points**

#### **Item 532 – Credit for Pumper Capacity (3 points)**

The next item reviewed is Item 532 "Credit for Pumper Capacity (CPC)". The total pump capacity available should be sufficient for the Basic Fire Flow of 3500 gpm. The maximum needed pump capacity credited is the Basic Fire Flow of the community.

**Item 532 "Credit for Pumper Capacity (CPC)" = 3.00 points**

#### **Item 549 – Credit for Ladder Service (4 points)**

The next item reviewed is Item 549 "Credit for Ladder Service (CLS)". This item reviews the number of response areas within the city with 5 buildings that are 3 or more stories or 35 feet or more in height, or with 5 buildings that have a Needed Fire Flow greater than 3,500 gpm, or any combination of these criteria. The height of all buildings in the city, including those protected by automatic sprinklers, is considered when determining the number of needed ladder companies. Response areas not needing a ladder company should have a service company. Ladders, tools and equipment normally carried on ladder trucks are needed not only for ladder operations but also for forcible entry, ventilation, salvage, overhaul, lighting and utility control.

The number of ladder or service companies, the height of the aerial ladder, aerial ladder testing and the equipment carried on the in-service ladder trucks and service trucks is compared with the number of needed ladder trucks and service trucks and an FSRS equipment list. Ladder trucks must meet the general criteria of NFPA 1901, *Standard for Automotive Fire Apparatus* to be recognized.

The number of needed ladder-service trucks is dependent upon the number of buildings 3 stories or 35 feet or more in height, buildings with a Needed Fire Flow greater than 3,500 gpm, and the method of operation.

The FSRS recognizes that there are **2 ladder companies** in service. These companies are needed to provide fire suppression services to areas to meet NFPA 1710 criteria or within 2½ miles and the number of buildings with a Needed Fire Flow over 3,500 gpm or 3 stories or more in height, or the method of operation.

The FSRS recognizes that there are **0 service companies** in service.

**Item 549 "Credit for Ladder Service (CLS)" = 0.86 points**

### **Item 553 – Credit for Reserve Ladder and Service Trucks (0.50 points)**

The next item reviewed is Item 553 “Credit for Reserve Ladder and Service Trucks (CRLS)”. This item considers the adequacy of ladder and service apparatus when one (or more in larger communities) of these apparatus are out of service. The number of needed reserve ladder and service trucks is 1 for each 8 needed ladder and service companies that were determined to be needed in Item 540, or any fraction thereof.

**Item 553 “Credit for Reserve Ladder and Service Trucks (CRLS)” = 0.17 points**

### **Item 561 – Deployment Analysis (10 points)**

Next, Item 561 “Deployment Analysis (DA)” is reviewed. This Item examines the number and adequacy of existing engine and ladder-service companies to cover built-upon areas of the city.

To determine the Credit for Distribution, first the Existing Engine Company (EC) points and the Existing Engine Companies (EE) determined in Item 513 are considered along with Ladder Company Equipment (LCE) points, Service Company Equipment (SCE) points, Engine-Ladder Company Equipment (ELCE) points, and Engine-Service Company Equipment (ESCE) points determined in Item 549.

Secondly, as an alternative to determining the number of needed engine and ladder/service companies through the road-mile analysis, a fire protection area may use the results of a systematic performance evaluation. This type of evaluation analyzes computer-aided dispatch (CAD) history to demonstrate that, with its current deployment of companies, the fire department meets the time constraints for initial arriving engine and initial full alarm assignment in accordance with the general criteria of in NFPA 1710, *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*.

A determination is made of the percentage of built upon area within 1½ miles of a first-due engine company and within 2½ miles of a first-due ladder-service company.

**Item 561 “Credit Deployment Analysis (DA)” = 3.83 points**



### **Item 571 – Credit for Company Personnel (15 points)**

Item 571 “Credit for Company Personnel (CCP)” reviews the average number of existing firefighters and company officers available to respond to reported first alarm structure fires in the city.

The on-duty strength is determined by the yearly average of total firefighters and company officers on-duty considering vacations, sick leave, holidays, “Kelley” days and other absences. When a fire department operates under a minimum staffing policy, this may be used in lieu of determining the yearly average of on-duty company personnel.

Firefighters on apparatus not credited under Items 513 and 549 that regularly respond to reported first alarms to aid engine, ladder, and service companies are included in this item as increasing the total company strength.

Firefighters staffing ambulances or other units serving the general public are credited if they participate in fire-fighting operations, the number depending upon the extent to which they are available and are used for response to first alarms of fire.

On-Call members are credited on the basis of the average number staffing apparatus on first alarms. Off-shift career firefighters and company officers responding on first alarms are considered on the same basis as on-call personnel. For personnel not normally at the fire station, the number of responding firefighters and company officers is divided by 3 to reflect the time needed to assemble at the fire scene and the reduced ability to act as a team due to the various arrival times at the fire location when compared to the personnel on-duty at the fire station during the receipt of an alarm.

The number of Public Safety Officers who are positioned in emergency vehicles within the jurisdiction boundaries may be credited based on availability to respond to first alarm structure fires. In recognition of this increased response capability the number of responding Public Safety Officers is divided by 2.

The average number of firefighters and company officers responding with those companies credited as Automatic Aid under Items 513 and 549 are considered for either on-duty or on-call company personnel as is appropriate. The actual number is calculated as the average number of company personnel responding multiplied by the value of AA Plan determined in Item 512.D.

The maximum creditable response of on-duty and on-call firefighters is 12, including company officers, for each existing engine and ladder company and 6 for each existing service company.

Chief Officers are not creditable except when more than one chief officer responds to alarms; then extra chief officers may be credited as firefighters if they perform company duties.

The FSRS recognizes **34.43 on-duty personnel** and an average of **0.00 on-call personnel** responding on first alarm structure fires.

**Item 571 “Credit for Company Personnel (CCP)” = 9.56 points**

**Summary of PPC Review**  
**for**  
**Lees Summit FPSA**

<b>FIRS Item</b>	<b>Earned Credit</b>	<b>Credit Available</b>
<b>Emergency Communications</b>		
414. Credit for Emergency Reporting	2.40	3
422. Credit for Telecommunicators	4.00	4
432. Credit for Dispatch Circuits	3.00	3
<b>440. Credit for Emergency Communications</b>	<b>9.40</b>	<b>10</b>
<b>Fire Department</b>		
513. Credit for Engine Companies	5.94	6
523. Credit for Reserve Pumpers	0.49	0.5
532. Credit for Pumper Capacity	3.00	3
549. Credit for Ladder Service	0.86	4
553. Credit for Reserve Ladder and Service Trucks	0.17	0.5
561. Credit for Deployment Analysis	3.83	10
571. Credit for Company Personnel	9.56	15
581. Credit for Training	8.00	9
730. Credit for Operational Considerations	2.00	2
<b>590. Credit for Fire Department</b>	<b>33.85</b>	<b>50</b>
<b>Water Supply</b>		
616. Credit for Supply System	29.34	30
621. Credit for Hydrants	2.87	3
631. Credit for Inspection and Flow Testing	6.39	7
<b>640. Credit for Water Supply</b>	<b>38.60</b>	<b>40</b>
<b>Divergence</b>	<b>-5.76</b>	<b>--</b>
<b>1050. Community Risk Reduction</b>	<b>4.45</b>	<b>5.50</b>
<b>Total Credit</b>	<b>80.54</b>	<b>105.5</b>

**Final Community Classification = 02/2X**



INSURANCE SERVICES OFFICE, INC.  
HYDRANT FLOW DATA SUMMARY

City Lees Summit Fpsa County Cass, Jackson State MISSOURI (24) Witnessed by: Insurance Services Office Date: Jan 3, 2017

TEST NO.	TYPE DIST.*	TEST LOCATION	SERVICE	FLOW - GPM $Q=(29.83(Cd^2p^{0.5}))$		PRESSURE PSI		FLOW -AT 20 PSI		REMARKS**	MODEL TYPE
				INDIVIDUAL HYDRANTS	TOTAL	STATIC	RESID.	NEEDED **	AVAIL.		
1		Hamblen & Fleetway	Lees Summit Water Dept, Lees Summit	2710	0	0	0	5000	10050		CNMP
10		Front of High School	Lees Summit Water Dept, Lees Summit	1190	1190	0	0	5000	6000		CNMP
10A		Front of High School	Lees Summit Water Dept, Lees Summit	1190	1190	0	0	4000	6000		CNMP
10B		Front of High School	Lees Summit Water Dept, Lees Summit	1190	1190	0	0	3000	6000		CNMP
11		Chipman & Rice	Lees Summit Water Dept, Lees Summit	2590	0	0	0	4500	6750		CNMP
11A		Chipman & Rice	Lees Summit Water Dept, Lees Summit	2590	0	0	0	3500	6750		CNMP
12		North East Douglas Street & Maple	Lees Summit Water Dept, Lees Summit	1430	0	0	0	2250	1750		CNMP
13		NW O'Brien & Killarney Ln	Lees Summit Water Dept, Lees Summit	2740	0	0	0	8000	4300		CNMP
13A		NW O'Brien & Killarney Ln	Lees Summit Water Dept, Lees Summit	2740	0	0	0	5500	4300		CNMP
13B		NW O'Brien & Killarney Ln	Lees Summit Water Dept, Lees Summit	2740	0	0	0	2000	4300		CNMP
14		Pryor & Chipman	Lees Summit Water Dept, Lees Summit	3060	0	0	0	5000	5200		CNMP
14A		Pryor & Chipman	Lees Summit Water Dept, Lees Summit	3060	0	0	0	5000	5200		CNMP
14B		Pryor & Chipman	Lees Summit Water Dept, Lees Summit	3060	0	0	0	4500	5200		CNMP
14C		Pryor & Chipman	Lees Summit Water Dept, Lees Summit	3060	0	0	0	3500	5200		CNMP
15		Ashurst & Ashurst Pl.	Lees Summit Water Dept, Lees Summit	1910	0	0	0	750	2600		CNMP
16		Longview Rd, at arena north hydrant	Lees Summit	1690	0	0	0	5500	4350		CNMP

THE ABOVE LISTED NEEDED FIRE FLOWS ARE FOR PROPERTY INSURANCE PREMIUM CALCULATIONS ONLY AND ARE NOT INTENDED TO PREDICT THE MAXIMUM AMOUNT OF WATER REQUIRED FOR A LARGE SCALE FIRE CONDITION.

THE AVAILABLE FLOWS ONLY INDICATE THE CONDITIONS THAT EXISTED AT THE TIME AND AT THE LOCATION WHERE TESTS WERE WITNESSED.

\*Comm = Commercial; Res = Residential.

\*\*Needed is the rate of flow for a specific duration for a full credit condition. Needed Fire Flows greater than 3,500 gpm are not considered in determining the classification of the city when using the Fire Suppression Rating Schedule.

\*\*\* (A)-Limited by available hydrants to gpm shown. Available facilities limit flow to gpm shown plus consumption for the needed duration of (B)-2 hours, (C)-3 hours or (D)-4 hours.



INSURANCE SERVICES OFFICE, INC.  
HYDRANT FLOW DATA SUMMARY

City Lees Summit Fpsa State MISSOURI (24) Witnessed by: Insurance Services Office Date: Jan 3, 2017  
 County Cass, Jackson

TEST NO.	TYPE DIST.*	TEST LOCATION	SERVICE	FLOW - GPM		PRESSURE PSI		FLOW -AT 20 PSI		REMARKS***	MODEL TYPE
				INDIVIDUAL HYDRANTS	TOTAL	STATIC	RESID.	NEEDED **	AVAIL.		
16A		Longview Rd. at arena north hydrant	Lees Summit Water Dept, Lees Summit	1690	0	0	0	4500	4350		CNMP
16B		Longview Rd. at arena north hydrant	Lees Summit Water Dept, Lees Summit	1690	0	0	0	1500	4350		CNMP
17		Eagleview	Lees Summit Water Dept, Lees Summit	2780	0	0	98	750	4000		
18		South West Market Street & Hwy 150	Lees Summit Water Dept, Lees Summit	1750	0	0	0	4500	4600		CNMP
18A		South West Market St & Hwy 150	Lees Summit Water Dept, Lees Summit	1750	0	0	0	3500	4600		CNMP
19		Huntington Dr & Allendale Lake Rd	Jackson County PWS 12, RWD #12	1860	0	0	100	750	2200		
1A		Hamblen & Fleetway	Lees Summit Water Dept, Lees Summit	2710	0	0	0	5000	10050		CNMP
1B		Hamblen & Fleetway	Lees Summit Water Dept, Lees Summit	2710	0	0	0	5000	10050		CNMP
1C		Hamblen & Fleetway	Lees Summit Water Dept, Lees Summit	2710	0	0	0	4500	10050		CNMP
1D		Hamblen & Fleetway	Lees Summit Water Dept, Lees Summit	2710	0	0	0	2250	10050		CNMP
2		Prairieview Elementary	Lees Summit Water Dept, Lees Summit	1430	0	0	0	4500	9600		CNMP
20		West Main Street & Harris	Jackson County PWS 12, RWD #12	2020	0	0	106	3000	2400		
21		Jefferson at Community school	Lees Summit Water Dept, Lees Summit	2160	0	0	0	4000	5150		CNMP
21A		Jefferson at Community school	Lees Summit Water Dept, Lees Summit	2160	0	0	0	2000	5150		CNMP
22		Ward & 3rd (behind S/C)	Lees Summit Water Dept, Lees Summit	2260	0	0	94	3500	4200		
2A		Prairieview Elementary	Lees Summit Water Dept, Lees Summit	1430	0	0	0	1000	9600		CNMP

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City Lees Summit Fpsa State MISSOURI Witnessed by: Insurance Services Office Date: Jan 3, 2017  
 County Cass, Jackson (24)

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				INDIVIDUAL HYDRANTS	TOTAL	STATIC	RESID.	NEEDED **	AVAIL.		
3		Bristol & Bridgeport	Lees Summit Water Dept, Lees Summit	2850	8000	0	0	750	5150		CNMP
4		NE Colbern & Ball	Lees Summit Water Dept, Lees Summit	2470	6620	0	0	4500	4150		CNMP
4a		Ne Colbern & Ball	Lees Summit Water Dept, Lees Summit	2470	6620	0	0	3000	4150		CNMP
5		Lakewood Blvd & Anderson	Lees Summit Water Dept, Lees Summit	2430	13280	0	0	3500	10850		CNMP
6		Dick Howser & Brockton	Lees Summit Water Dept, Lees Summit	2390	8890	0	0	750	6500		CNMP
7		Hagen & Independence	Lees Summit Water Dept, Lees Summit	2630	11030	0	0	3500	8400		CNMP
8		Rte 350 (Unity Village)	Unity Village Water Department, Main	2990	2990	100	68	2250	4900		
9		Missouri & Douglas	Lees Summit Water Dept, Lees Summit	2430	6230	0	0	3000	3800		CNMP

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