



# FIRE UNDERWRITERS SURVEY

A SERVICE TO INSURERS AND MUNICIPALITIES

July 10, 2020

Pemberton Fire Rescue  
Box 100, 7400 Prospect Street  
Pemberton, British Columbia  
V2Y 2V4

Attention: Robert Grossman, Fire Chief

## Fire Underwriters Survey – Village of Pemberton – Fire Insurance Grade Update 2020

Fire Underwriters Survey is a national organization that represents approximately 90 percent of the private sector and casualty insurers operating in Canada. Fire Underwriters Survey provides data to program subscribers regarding public fire protection for fire insurance statistical and underwriting evaluation. The following letter provides a brief description of the grading process.

The Public Fire Protection Classification (PFPC) is a numerical grading system scaled from 1 to 10 that is used by Commercial Lines<sup>1</sup> insurers. Class 1 represents the highest grading possible and Class 10 represents an unrecognized level of fire protection, or fire protection beyond 5 km by road travel distance from the nearest responding fire station. The PFPC grading system evaluates the ability of a community’s fire protection programs to prevent and control major fires that may occur in multi-family residential, commercial, industrial, institutional buildings, and course of construction developments.

Fire Underwriters Survey also assigns a second grade for fire protection. The second grading system, entitled Dwelling Protection Grade (DPG), assesses the protection available for small buildings such as single-family dwellings and is used by Personal Lines<sup>2</sup> insurers. The DPG is a numerical grading system scaled from 1 to 5. One (1) is the highest grading possible and five (5) indicates little or no fire protection is present; Class 5 also represents fire protection beyond 8 km by road travel distance of a responding fire station. This grading reflects the ability of a community to handle fires in small buildings such as single-family dwellings and semi-detached dwellings.

An update to the Village of Pemberton’s fire insurance grades has occurred. The following two tables below outline the updates to the fire insurance grades of the Village of Pemberton.

### Public Fire Protection Classification (PFPC) Updates

SUB DISTRICT(S) and (contract protection areas)	PFPC Previous	PFPC 2020	COMMENTS
Village of Pemberton	7	5	Hydrant Protected – Commercial Lines insured properties within 5 km in road travel distance of the Pemberton fire station and within 150 m in hose lay of a recognized hydrant on a Village of Pemberton water distribution systems.
	9	9	Fire Hall Protected – Commercial Lines insured properties within 5 km in road travel distance of the Pemberton fire station but not within 150 m of hose lay of a recognized hydrant.
	10	10	Unprotected - Commercial Lines insured properties not within 5 km in road travel distance of the Pemberton fire station.

<sup>1</sup> Commercial Lines: A distinction marking property and liability coverage written for business or entrepreneurial interests (includes institutional, industrial, multi-family residential and all buildings other than detached dwellings that are designated single-family residential or duplex) as opposed to Personal Lines.

<sup>2</sup> Personal Lines: Insurance covering the liability and property damage exposures of private individuals and their households as opposed to Commercial Lines. Typically includes all detached dwellings that are designated single family residential or duplex structures.



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## Dwelling Protection Grade (DPG) Updates

SUB DISTRICT(S) and (contract protection areas)	DPG Previous	DPG 2020	COMMENTS
Village of Pemberton	3A	2	Hydrant Protected – Personal Lines insured dwellings within 8 km in road travel distance of Pemberton fire station and within 300 m of a recognized hydrant on a recognized water distribution system.
	3B	3B	Firehall Protected – Personal Lines insured dwellings within 8 km in road travel distance of the Pemberton fire station but not within 300 m of hose lay of a recognized hydrant
	5	5	Unprotected – Personal Lines insured dwellings beyond 8 km in road travel distance of the Pemberton fire station.

Based on the information collected during a field visit and submitted to FUS, FUS has reviewed and updated the fire insurance grades of the Village of Pemberton. The PFPC of the Village was improved to 5 and the DPG was improved to DPG 2 since the previous assessment.

Provided below, is a description of each of the five (5) categories evaluated during a fire insurance classification assessment; Risk Assessment, Fire Department, Water Supply, Emergency Communication, and Fire Safety Control (Fire Prevention and Public Education). We have included Grading Credit Charts to assist the Village of Pemberton and in determining areas where credit points are available. Their inclusion in this letter should allow for improvements to be developed regarding the Village's fire insurance grades and fire protection programs.

If a municipality wishes to update a specific grading items, the municipality can request FUS to provide details on what additional information should be submitted to determine if additional credit is warranted in a grading sub item.

## Risk Assessment

Fire Underwriters Survey measures the ability of the fire department and water supply against the level of built fire risk within a municipality. The measurement is not usually determined by the most significant risk, but is generally the value which is representative of the fire potential of most large properties in the municipality, but may exclude several of the largest properties not considered usual to the municipality.

FUS calculates Required Fire Flows and sets a Basic Fire Flow to evaluate and credit the fire department and water supply. Required Fire Flows are determined in accordance with Part 2 of the *Water Supply for Public Fire Protection*. The Village of Pemberton Fire Department's Basic Fire Flow was set at 12,000 LPM (2,600 Igpm) to evaluate grading items pertaining to the fire department. Individual Basic Fire Flows were established for the three water distributions to evaluate grading items pertaining water supplies.

## Fire Department Grading Items

The Fire Department grading consists of nineteen (19) items and makes up forty percent (40%) of the Public Fire Protection Classification (PFPC). Please note, each item is divided by sub-items, as each item carries a different weight within the Fire Department section and the overall classification.

The areas reviewed in the assessment of the Fire Department are as follows:

- FD-1 – Engine Service
- FD-2 – Ladder Service
- FD-3 – Distribution of Companies
- FD-4 – Engine and Ladder Pump Capacities
- FD-5 – Design, Maintenance, and Conditions of Fire Apparatus



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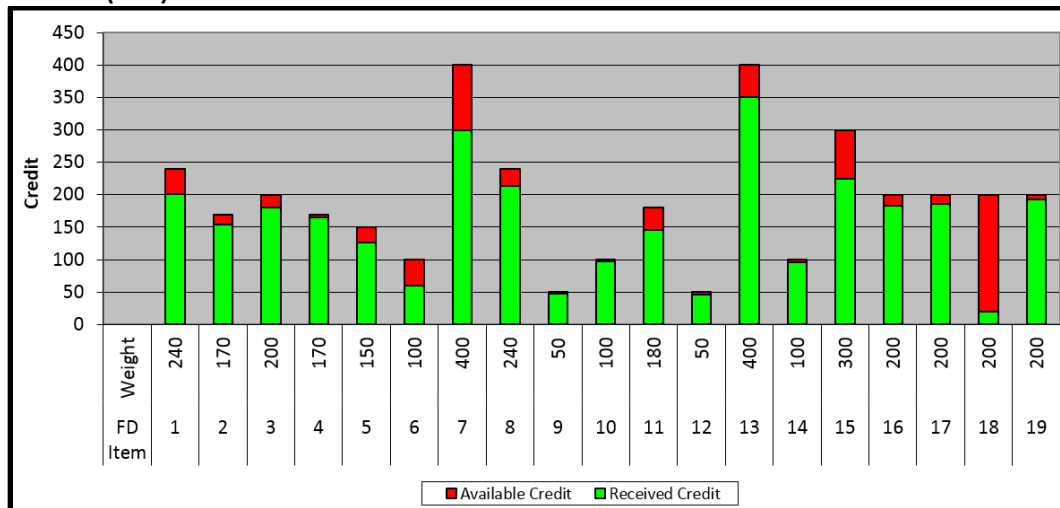


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- FD-6 – Number of Line Officers – Fire Suppression
- FD-7 – Total Fire Force Available
- FD-8 – Engine and Ladder Company Unit Manning
- FD-9 – Master and Special Stream Devices
- FD-10 – Equipment for Engines and Ladder Apparatus, General
- FD-11 – Fire Hose
- FD-12 – Conditions of Fire Hose
- FD-13 – Training and Qualifications
- FD-14 – Response to Alarms
- FD-15 – Fire Ground Operations
- FD-16 – Special Protection Required
- FD-17 – Miscellaneous Factors and Conditions
- FD-18 – Pre-Incident Planning
- FD-19 – Administration

## Fire Department (40%)



## Water Supply Grading Items

The Water Supply grading consists of fifteen (15) items and makes up thirty percent (30%) of the Public Fire Protection Classification (PFPC). Please note, each item is divided by sub-items, and carries different weight within the Water Supply section and the overall classification.

Areas reviewed in the assessment of the Water Supply are as follows:

- WS-1 – Normal Adequacy of Supply Works
- WS-2 – Reliability of Supply Works
- WS-3 – Reliability of Pumping Capacity (Pumps and Drivers)
- WS-4 – Reliability of Power Supply
- WS-5 – Reliability, Condition, Arrangement, Operation and Maintenance of System Components
- WS-6 – Fire Flow Delivery by Mains
- WS-7 – Reliability of Principal Mains
- WS-8 – Installation of Pipe
- WS-9 – Arrangement of Distribution System
- WS-10 – Additional Factors and Conditions Relating to Supply and Distribution



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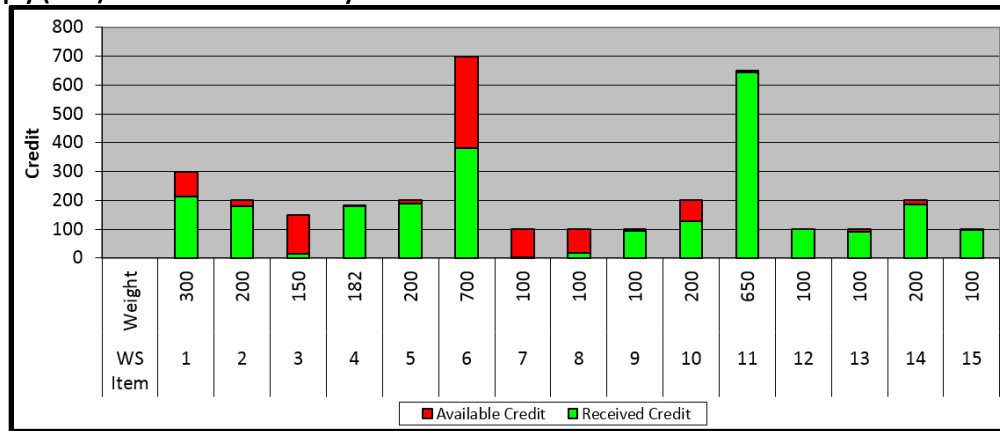


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- WS-11 – Distribution of Hydrants
- WS-12 – Hydrants – Size, Type and Installation
- WS-13 – Hydrants – Condition and Inspection
- WS-14 – Other Conditions Affecting Adequacy and Reliability
- WS-15 – Management

## Water Supply (30%) – Northwest Water System



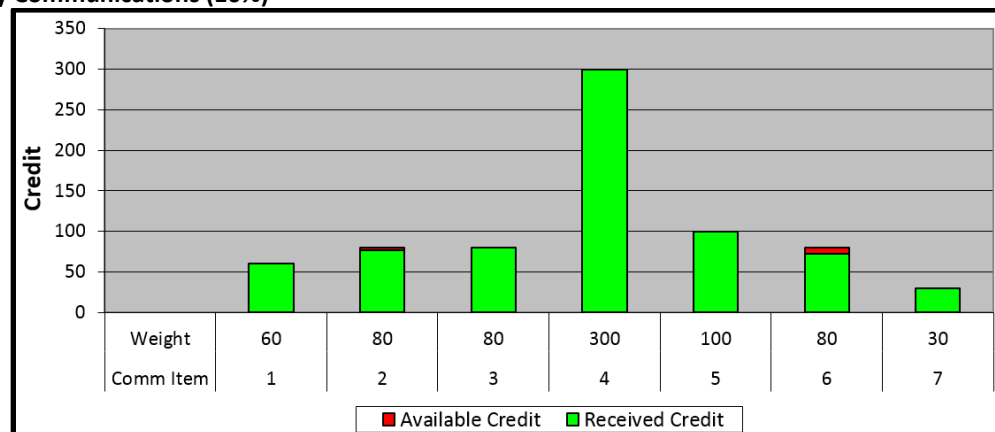
## Emergency Communication Grading Items

The Emergency Communications grading consists of seven (7) items and makes up ten percent (10%) of the Public Fire Protection Classification (PFPC). Credit obtained is primarily derived based on the review of the emergency dispatch services used.

Areas reviewed in the assessment of the Emergency Communications are as follows:

- Comm-1 – Communication Centre
- Comm-2 – Means of Transmitting Alarm by Public
- Comm-3 – Fire Department Telephone Service (Incoming from Public)
- Comm-4 – Means of Alarm Dispatch
- Comm-5– Dispatching Service
- Comm-6– Operations Radio
- Comm-7– Miscellaneous Factor

## Emergency Communications (10%)





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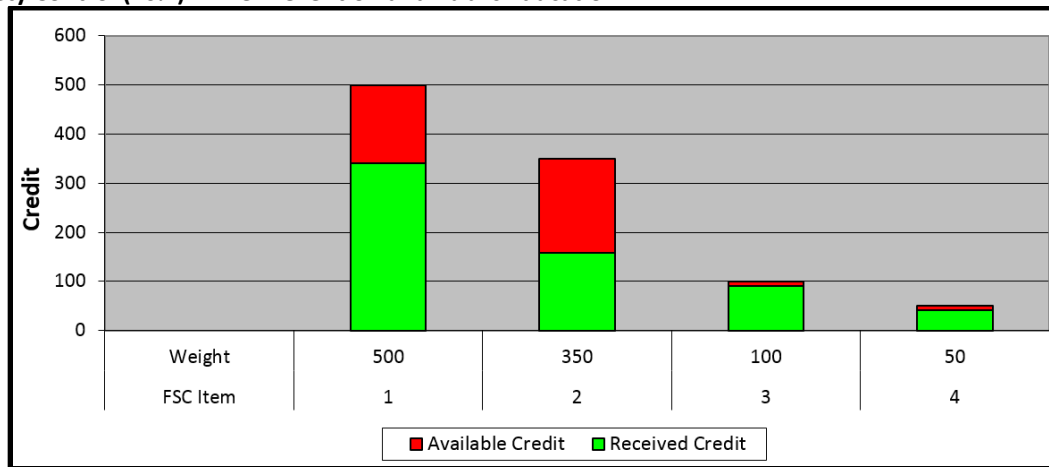
## Fire Safety Control Grading Items

Fire Safety Control grading consists of four (4) items and makes up twenty percent (20%) of the Public Fire Protection Classification (PFPC). Fire Safety Control has become an increasingly heavily weighted portion of the fire insurance grading system. This is the result of statistical data showing that communities employing effective programs in these areas have significantly reduced fire related losses.

Areas reviewed in the assessment of the Fire Safety Control (Fire Prevention and Public Education) are as follows:

- FSC-1 – General Program
- FSC-2 – Codes and Enforcement
- FSC-3 – Building Construction Laws
- FSC-4 – Electrical Code and Inspection

### Fire Safety Control (20%) – Fire Prevention and Public Education



The overall Public Fire Protection Classification grade is determined by totaling the credit received per grading item. A summary of the relative classifications and results of each grading area is provided below.

Area of Grading	Weight within Grading	Credit Received 2020	Relative Classifications 2020
Fire Department	40	25.40	6
Water Supply	30	14.83	4
Fire Safety Control	20	12.60	4
Emergency Communications	10	9.78	1
Divergence Penalty <sup>3</sup>		-2.11	
Special Hazard Analysis <sup>4</sup>		-1.79	
<b>Total Credit Score</b>		<b>58.71</b>	

<sup>3</sup> Where the water supply is considerably better than the fire department, or vice versa, the better feature cannot be utilized to full value. A divergence penalty is subtracted from the total credit for differing levels of available protection between the Water Supply and Fire Department when determining the final credit score for the Public Fire Protection Classification.

<sup>4</sup> Special hazard analysis may be applied to a community, a municipality or a fire protection area to recognize climatic factors or adverse effects upon fire control of certain environmental features that inhibit firefighting operations or contribute to fire spread.



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The following table below indicates the credit range of each PFPC grade.

Overall PFPC	Credit Range Per PFPC
1	90.00 – 100.00
2	80.00 – 89.99
3	70.00 – 79.99
4	60.00 – 69.99
5	50.00 – 59.99
6	40.00 – 49.99
7	30.00 – 39.99
8	20.00 – 29.99
9	10.00 – 19.99
10	0.00 – 9.99

FUS will be looking to collect updated information again in five years. If any significant changes occur in any of the grading areas before the municipalities next scheduled update, details should be submitted to FUS for review to determine if changes are warranted to the fire insurance grades published within the Canadian Fire Insurance Grading Index for the Village of Pemberton. It is recommended to submit updates as soon as they occur to be credited. If updates occur to the municipalities boundary or new hydrants are added to the water distribution systems, details should be submitted to FUS as soon as possible to update grade coverage areas in the Grading Index. Please note that this letter is private and confidential. The underlying data of this report has been developed for fire insurance grading and classification purposes. This letter may be used by the stakeholders of the Village of Pemberton to assist in planning the future direction of fire protection services.

Michael King  
Public Fire Protection Specialist  
Fire Underwriters Survey