



City of Richmond

Report to Committee

To: Community Safety Committee

Date: February 14, 2018

From: Tim Wilkinson – Fire Chief
Sarah Morris – Risk Manager

File: 99-Fire Rescue/2018-
Vol 01

Re: Fire Underwriters Survey Grade Report

Staff Recommendation

That the staff report titled “Fire Underwriters Survey Grade Report”, dated February 14, 2018 from the Fire Chief, Richmond Fire-Rescue and Risk Manager be received for information.

Tim Wilkinson
Fire Chief
(604-303-2701)

Sarah Morris
Risk Manager
(604-247-4476)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Administration and Compliance	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

In 2017, a review of the Fire Insurance Grade was carried out by the Fire Underwriters Survey (FUS) on the City of Richmond.

The FUS is a national organization that represents more than 85 per cent of the private sector and casualty insurers in Canada. Fire Underwriters Survey provides data to program subscribers regarding public fire protection for fire insurance statistical and underwriting evaluation.

The FUS offices maintain data from surveys on fire protection programs for all incorporated and unincorporated municipalities across Canada. The results of these surveys are used to establish the Public Fire Protection Classification (PFPC) and Dwelling Protection Grade (DPG) for each community. The PFPC and DPG are used by underwriters to determine fire insurance pricing and the amount of risk they are willing to assume in a given community or section of a community.

The overall intent of the grading systems is to provide a measure of the ability of protective facilities within a community to prevent and control major fires that may be expected to occur.

The last time this survey was conducted was in the year 2000 (the year 2000 FUS) at which time the rating was PFPC 3 and DPG 1. The year 2000 FUS was used to guide Richmond Fire-Rescue (RFR) in the continuous improvement of their efficiency and effectiveness. In the fourth quarter of 2017, the Fire Underwriters Survey conducted a follow up survey; these surveys are expected to occur more regularly in the future.

This report supports Council's 2014-2018 Term Goal #1 A Safe Community:

Maintain emphasis on community safety to ensure Richmond continues to be a safe community.

Definitions

Classification Standard for Public Fire Protection (CSPFP):

- The method used to review the levels of public fire protection is called the Classification Standard for Public Fire Protection. The results of the review are related to subscribers through the Fire Insurance Grading Index (web-based application). Results are summarized using two grading systems: the Public Fire Protection Classification (PFPC) system and the Dwelling Protection Grade (DPG) system.

Public Fire Protection Classification (PFPC):

- A numerical grading system scaled from 1 to 10 is used by Commercial Lines underwriters. Class 1 represents the highest grading possible and Class 10 indicates that little or no fire protection is in place. 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.

Dwelling Protection Grade (DPG):

- The DPG is a numerical grading system scaled from one to five used by Personal Lines underwriters. One is the highest grading possible and five indicates little or no fire protection being present. This grading reflects the ability of a community to handle fires in small buildings.

Commercial Lines:

- A distinction marking property and liability coverage for business or entrepreneurial interests (includes institutional, multifamily residential and all buildings other than detached dwellings that are designated single family residential or duplex) as opposed to Personal Lines.

Personal Lines:

- Insurance covering the liability and property damage exposure of private individuals and their households as opposed to Commercial Lines. This typically includes all detached dwellings that are designated single family residential or duplex.

Analysis

The Fire Underwriters Survey finds Richmond to be a city with a high frequency of fire events which is defined as 500 fires per year or greater. The British Columbia Office of the Fire Commissioner defines a reportable fire as *“All fires that cause damage to property, injuries or fatalities, or which require fire department resources to suppress.”*

Richmond Fire-Rescue (RFR) has studied the causation of fires within Richmond and found that the majority of fires are caused by cooking and smoking. RFR has launched an aggressive public education program informing the public of the dangers of home cooking fires and the perils of discarding smoking materials incorrectly.

The Fire Underwriters Survey process for determining the Fire Insurance Grades is as follows:

- Risk Assessment – sets the benchmark levels of fire risk and distribution of fire risk throughout the community. The risk assessment lays the foundation for determining resource and distribution needs;
- Fire Department – available fire department suppression resources contribute approximately 40 per cent to the final PFPC;
- Water Supplies – available water supplies contribute approximately 30 per cent to the final PFPC;
- Fire Safety Control – available fire prevention resources contribute approximately 20 per cent to the final PFPC; and
- Emergency Communications – emergency communications contribute approximately 10 per cent to the final PFPC.

The FUS report from the year 2000 gave significant direction to RFR in the areas of development to achieve an improved Fire Insurance grading. As a result, the Fire Chief created aspirational goals to move RFR from the PFPC 3/ DPG 1 to the PFPC 2/ DPG 1 rating.

The 2017 results of the FUS for the City of Richmond show an improvement in the levels of public fire protection in the City. As a result the Public Fire Protection Classification (PFPC, Commercial structures) for the City has improved from a PFPC 3 to a PFPC 2 (based on a 1-10 scale, 1 being the best) while maintaining the highest score of 1 for the Dwelling Protection Guide (residential protection).

The FUS of 2017 shows that RFR was able to determine, from the year 2000 FUS, which areas of improvement had the best effect on increasing efficiency and effectiveness.

The below improvements directly led to the improved Fire underwriters Survey score:

1. Design, Maintenance and Condition of Apparatus (Fire Trucks) 99 per cent score in 2017;
2. Equipment inventories, Hose inventory level and condition 100 per cent score in 2017;
3. Training and Qualifications 100 per cent score in 2017;
4. Fire ground operations 100 per cent score in 2017;
5. Record keeping 99 per cent score in 2017;
6. Fire Hall buildings 99 per cent in 2017;
7. Administration 100 per cent score in 2017; and
8. Communications (ECOMM) 100 per cent score in 2017.

Areas of continuous improvement identified within the 2017 FUS are as follows:

- Add one pumper (fire truck) to the City Center response;
- Distribution of companies and type of apparatus: specifically "*some areas lie at or beyond the extent of a five kilometer response area.*" This particular statement arose in the 2000 FUS survey and scores remained the same for 2017 at 74 per cent; and
- Implement Automatic Aid agreements with neighboring municipalities.

Specific Recommendations from 2017 FUS:

1. A complete pre-fire planning program should be implemented for properties throughout the City (2017 grading is 27 per cent). RFR has already started the process of improvement in this area; and
2. The City should target an inspection program for all properties (building Code-Part 3), (2017 grading is 87 per cent). The survey identified that Fire completed 61 per cent of scheduled inspections.

The Fire Underwriters Survey did not provide comment on the effect created by the improved grades nor what the effect would be of moving to the highest score PFPC 1, however there is expected to be impacts for individual citizens and companies based on their specific circumstances. Possible cost benefits through improvement in insurance grades, and further optimized service levels to residents and business, is anticipated.

Financial Impact

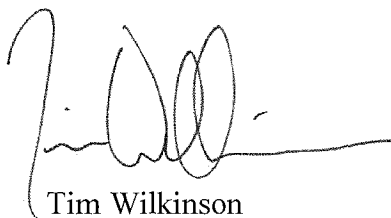
None.

Conclusion

The City of Richmond, Fire-Rescue department is one of only 12 in Canada to achieve the PFPC score of two or greater with only one department achieving a PFPC score of one.

The results of FUS 2017 show improvement in the levels of fire protection in the City. As a result, the Public Fire Protection Classification rating has improved from a PFPC 3 to a PFPC 2 and maintained a Dwelling Protection Grade 1. The focus RFR puts towards service excellence and continuous improvement is demonstrated by the improved Fire Insurance Grades. The improvement in PFPC grade may provide commercial structures with improved insurance pricing and/or insurers may increase the amount of property risk accepted in the City.

The updated Grades have been published on the Canadian Fire Insurance Grading Index.



Tim Wilkinson
Fire Chief
(604-303-2701)



Sarah Morris
Risk Manager
(604-247-4476)

Att. 1: Fire Underwriters Survey Grade Report



FIRE UNDERWRITERS SURVEY

A SERVICE TO INSURERS AND MUNICIPALITIES

c/o Opta Information Intelligence

January 15th, 2018

Richmond Fire-Rescue,
6931 Granville Avenue,
Richmond, BC,
V7C 4M9

Attention: Tim Wilkinson, Fire Chief

Re: Fire Insurance Grade Update – City of Richmond

Main Summary:

The results of the Fire Underwriter's Survey (FUS) for the City of Richmond for 2017 show an improvement in the levels of public fire protection in the City. As a result the Public Fire Protection Classification (PFPC) for the City has improved from a PFPC 3 to a PFPC 2 (based on a 1-10 scale, 1 being the best). The dedicated efforts of the City in providing public fire protection are reflected in this improved Grade. The results are summarized in the following table.

Table 1 Grade Update Summary

SUB DISTRICT	PFPC 2000	PFPC 2017	DPG 2000	DPG 2017	Comments
Richmond – Hydrant Protected Areas	3	2	1	1	Properties <u>within</u> specified distances of a hydrant connected to the identified water system and within specified distances of the identified fire hall

These Grades apply as shown in Figure 3 and Figure 4. The PFPC applied to the majority of properties in the City has improved. The published Grades in some areas have remained status quo do to response distance from Fire Halls being >5km. The improved PFPC Grade has been published on the Fire Insurance Grading Index. Subscribers to the Grading Index use the PFPC Grades when determining the rates for properties under Commercial Lines¹. Commercial property owners may see a reduction in their fire insurance rate as a result (subscribing insurance companies make a final decision on rates). In addition to the improved Grades being published to the Fire Insurance Grading Index, Commercial property owners can also notify their insurance company of the improvement in the PFPC for the City of Richmond.

¹ 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.

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Fire Underwriter’s Survey and Fire Insurance Grade Overview:

Fire Underwriters Survey is a national organization that represents more than 85 percent of the private sector and casualty insurers in Canada. Fire Underwriters Survey provides data to program subscribers regarding public fire protection for fire insurance statistical and underwriting evaluation.

FUS offices maintain data from surveys on fire protection programs for all incorporated and unincorporated areas across Canada. The results of these surveys are used to establish the Public Fire Protection Classification (PFPC) and Dwelling Protection Grade (DPG) for each community. The PFPC and DPG is also used by underwriters to determine the amount of risk they are willing to assume in a given community or section of a community.

The overall intent of the grading systems is to provide a measure of the ability of the protective facilities within a community to prevent and control major fires that may be expected to occur.

The method used to review the levels of public fire protection is called the Classification Standard for Public Fire Protection (CSPFP). The results of the review are related to subscribers through the Fire Insurance Grading Index (web-based application). Results are summarized using two grading systems: the Public Fire Protection Classification (PFPC) system and the Dwelling Protection Grade (DPG) system.

Public Fire Protection Classification (PFPC):

The Public Fire Protection Classification (PFPC) is a numerical grading system scaled from 1 to 10 that is used by Commercial Lines² underwriters. Class 1 represents the highest grading possible and Class 10 indicates that little or no fire protection is in place. 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.

Dwelling Protection Grade (DPG):

The DPG is a numerical grading system scaled from 1 to 5 used by Personal Lines³ underwriters. One (1) is the highest grading possible and 5 indicates little or no fire protection being present. This grading reflects the ability of a community to handle fires in small buildings.

The process of determining the Fire Insurance Grades involves a review of the following:

- Risk Assessment – sets the benchmark levels of fire risk and distribution of fire risk throughout the community. The risk assessment lays the foundation for determining resource and distribution needs

² 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.

³ 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.

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- Fire Department – available fire department suppression resources contribute approximately 40% to the final PFPC
- Water Supplies – available water supplies contribute approximately 30% to the final PFPC
- Fire Safety Control – available fire prevention resources contribute approximately 20% to the final PFPC
- Emergency Communications – emergency communications contribute approximately 10% to the final PFPC.

Risk Assessment and Public Fire Protection Resource Review:

Adequate response to a fire emergency is generally measured by the speed with which a responding firefighting crew(s) can arrive at the fire emergency with sufficient resources, to have a reasonable degree of opportunity to control or extinguish a fire. Simply put, the response provided by a firefighting crew should equal the potential severity of the fire or fire emergency.

The base point, within the Classification Standard for Public Fire Protection, for measuring fire risk and the resultant available and adequate response is the determination of Required Fire Flows (RFF). Required Fire Flows (RFF) may be described as a measurement of the amount and rate of water application, and fire company response, required in firefighting to confine and control the fires possible in a building or group of buildings which comprise essentially the same fire area by virtue of immediate exposures.

RFFs were derived for buildings throughout the City of Richmond using the methodology described in the FUS 1999 Guideline “Water Supply for Public Fire Protection”. The calculation considers variables related to: the construction type, occupancy, exposures, total effective area, and the fire protection systems in place for each risk.

GIS building and zoning data related to Required Fire Flow variables as well as manual calculations were used to derive Required Fire Flows for buildings throughout the community. The results of the risk assessment are shown in Appendix A – Figure 1. Areas in orange/red indicate higher risk areas.

A Public Fire Protection Specialist from FUS completed on-site reviews/interviews of all fire department operations in the community over a cumulative 3 day period, including:

- Type and number of apparatus
- The condition and age of fire apparatus and fire suppression equipment
- Type of apparatus
- Pumping capacity
- Type and number of staffing
- Distribution of fire companies relative to fire risk
- Response to alarm protocols
- Response times/distances
- Fire fighter training programs and facilities

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- Availability, adequacy and reliability of emergency water supplies
- Fire prevention inspections
- Public education programs
- Emergency communications

Additionally, City and Fire Department staff directed a visit and tour of public fire protection resources. We would like to thank all City staff for their valuable assistance in conducting this survey and preparation of this letter.

Classification Standard for Public Fire Protection Results (CSPFP):

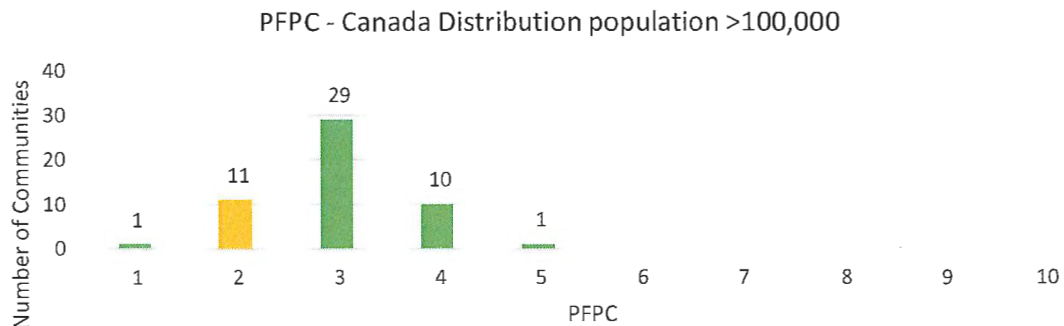
The final PFPC is derived from a review of 4 areas related to public fire protection: Fire Department, Water Supply, Fire Safety Control, and Emergency Communications. A relative classification is derived for each of these areas based on a 1 to 10 scale (Class 1 being the best). The relative classification and weighting contribute to the final PFPC. A summary of relative classifications and weightings are provided in Table 2. All areas scored very well.

Table 2 Relative Classification and Final PFPC Summary

Grading Area	Approximate Weighting	Relative Classification
Fire Department	40%	3
Water Supply	30%	2
Fire Safety Control	20%	2
Emergency Communications	10%	1
Final PFPC:		2

A national comparison of PFPC Grades for communities with population >100,000 is shown in Figure 1 below. The City of Richmond is amongst 11 communities nationally with PFPC 2.

Figure 1 PFPC Comparison



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Results and Recommendations:

Calculation of the Fire Insurance Grade:

The Classification Standard for Public Fire Protection (CSPFP) describes the method of review. It is mostly derived from regression/correlation analysis. It should not be considered prescriptive but rather best practice. Recommendations are made to improve credit in the Grading and as such the relative weight of the recommendation to the overall PFPC should be considered. It is not possible to comment on the insurance rate effects of moving to a PFPC 1; however, the impact of the current improvement (PFPC 3 to PFPC 2) will better inform the City of the magnitude of the impact on insurance rates. Recommendations are also based on improved service levels and reducing the negative impact of fire within the City.

A further breakdown of each area is provided in Appendix B CSPFP – Section Summaries. The bar charts cover the 4 areas of the Grading. Each area of the Grading is subdivided into items. These items are represented as bars on the charts in Appendix B.

Fire Department

- **FD-1 Engine Service:**
The Basic Fire Flow for the City is set at 4,800 IGPM. As a result the City should have 6 Pumpers in service. There was a high frequency of fire calls in 2016 (>500) and as a result 2 additional Pumpers are added to the total benchmark needs. Apparatus RIE01 had a high frequency of calls (3,248); therefore 1 more Pumper is added to the benchmark needs bringing the total to 9 Pumpers. Through a combination of Aerial and Engine apparatus the City is credited with 8 Pumpers in service. As a result the City received near maximum credit in this Grading Item (97%).
- **FD-2 Ladder Service:**
In a similar analysis to FD-1, the City is determined to need 2 Ladder apparatus and is credited with having 2 Ladders in service. Maximum credit is received in this Grading Item (100%).
- **FD-3 Distribution of Companies and Type of Apparatus:**
This item reviews how well companies are distributed throughout the community to respond to the levels of fire risk. The municipal boundaries of the City cover a large geographic area. As such it is difficult to ideally locate facilities to cover all properties under ideal response distances. Some areas lie at or beyond the extent of a 5km response area, as can be seen in Figure 3 (red area). The City received 74% credit in this Grading Item. It was noted during interviews with Richmond Fire Rescue Administration that the Department is currently working with an external consultant on resource distribution and optimization. Additionally, the levels of response with neighbouring Departments is being reviewed.

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- **FD-4 Engine and Ladder Pumping Capacity:**
The City has sufficient pumping capacity on apparatus and received 100% credit in this Grading item.
- **FD-5 Design, Maintenance and Condition of Apparatus:**
The apparatus, regular and preventive, maintenance program is well managed. The City has recently completed a new maintenance facility at Fire Hall 3 which will allow them to begin annual pump testing. All apparatus are within acceptable age limits. The City received near maximum credit in this Grading Item (99%).
- **FD-6 Number of Fire Suppression Officers (Chief and Company):**
The number of needed Chief Officers and Company Officers is based on the number of Pumper and Ladder Apparatus needed. The City received near maximum credit in this Grading Item (98%).
- **FD-7 Total Fire Force Available:**
The total fire force needed within the Classification Standard for Public Fire Protection is excessively high and is based on numbers that are not generally seen nationally. FUS is looking at updating the numbers needed in this section of the Grading. The City received a good level of credit in this Grading Item (70%).
- **FD-8 Pumper and Ladder Company Unit Manning:**
This Item looks at the average staffing per credited apparatus. The City received near maximum credit in this Grading Item (90%).
- **FD-9/FD-10/FD-11 Equipment Inventories and Hose:**
Richmond Fire Rescue provided detailed inventories for all equipment on their apparatus. The City received maximum credit in these Grading Items (100%).
- **FD-12 Condition of Hose:**
Hose is tested annually with records kept in a records management system. Hose drying facilities are in place. The City received maximum credit in this Grading Item (100%).
- **FD-13 Training and Qualifications:**
There is a documented and defined recruit training program in place that leads to all new recruits being certified to NFPA 1001 Level 2. Ongoing training is well managed using a software solution which ensures that all members receive training in all necessary skills. The minimum training level for Officers is NFPA 1021 Level 1; however, most of the Officers on the Department are certified to NFPA 1021 Level 2. There is a well-equipped new facility in place within the City boundaries. Currently Live Fire training must be completed outside the municipal boundaries; however, the Department will soon have the ability to complete Live Fire at the new

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facility. The City received maximum credit in this Grading Item (100%).

- **FD-14 Response to Alarms by Company Apparatus:**
Detailed and adequate alarm assignments are dispatched through EComm 911. The City received maximum credit in this Grading Item (100%).
- **FD-15/FD-16 Fireground Operations/Special Protection Required:**
Some municipalities have peculiar fire hazards within areas they protect requiring specialized apparatus or equipment which should be provided either by the fire department, individual property owners, or both together. These hazards, including waterfront port and marina facilities, large petrochemical installations or brush and grass fire potentials should be provided for. The Fire Department has a detailed list of operational guidelines and procedures in place for responding to various risks in the municipality and received maximum credit in this Grading Item (100%).

It has already been discussed that some areas of the community lie beyond 5km of a responding Fire Hall (see Figure 3). It was noted that a large fuel delivery/storage project is being completed in this area.

- **FD-17 Miscellaneous Factors and Conditions:**
This item looks at record keeping procedures and Fire Hall building and site suitability. The City received near maximum credit in this Grading Item (99%).
- **FD-18 Prefire Planning:**
This Item identifies pre-fire planning. Systematic and frequent inspections of buildings for pre-fire planning purposes shall be made by the fire force. Records of such inspections shall be kept and used in company training as well as being readily accessible to officers in command at fires. The City of Richmond has close to 12,000 properties needing inspections. Simply estimating that 50% of these may be buildings that need pre-fire plans would mean approximately 6,000 pre-fire plans should be complete and available to responding crews. At the time of the survey there were 552 pre-plans created; however, Richmond Fire Rescue is involved in a pilot project on a software solution for easily creating pre-fire plans and updating. The City received 27% credit in this Grading Item.

***Recommendation:** A complete pre-fire planning program should be implemented for properties throughout the City in order to improve credit in this Grading Item.*

- **FD-19 Administration:**
The Department is well administered and received maximum credit in this Grading Item (100%).

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Fire Safety Control

- FP-1/FP-2/FP-3/FP-4 Fire Prevention/Fire Safety Laws and Enforcement:
This grading item reviews the general fire prevention, inspection and investigation activities of the fire department. The official in charge of fire prevention activities, in cooperation with the chief of the fire department, should establish an inspection procedure for correction of: obstructions to exits which interfere with emergency egress or with fire department operations; inadequate or defective automatic or other fire alarm/fire extinguishing equipment; or conditions in buildings or other structures which create a severe life hazard potential. Provisions should be made for the investigation of fires. While each community will have their own risks and reduction programs, prevention will be more and more viewed as a frontline service and not a support service.

Richmond Fire Rescue has a dedicated and pro-active fire prevention division made up of a Chief Fire Prevention Officer, 3 Captains and 5 Fire Prevention Officers. Inspectors are trained to NFPA 1031 and public educations to NFPA 1035. The City has approximately 12,000 inspectable properties. The frequency of inspection is based on the occupancy type. As a result 5,529 inspection were scheduled in 2016 with 3,248 actually being completed. Inspections are recorded in a records management software. Public education events are regularly completed. The division is currently completing an outreach campaign to better understand community fire issues. The results of the program will drive future prevention and education activities. The division also completes plan review. The Department received 87% credit in the Grading Area.

Recommendation: The City should target an inspection program for all properties (Building Code - Part 3) in order to improve credit in this Grading Area. The program should aim to reduce the number of fire calls as this adds demands on FD-1 Engine Service, FD-2 Ladder Service, and FD-6/FD-7 Staffing needs.

Water Supply:

- The City provided a water model report for the system which shows that the City's Engineering Department has already completed an analysis of the water system and available fire flows. Any deficient areas have been identified. As such no further comment is provided here.

Communications:

- The City received 100% credit in this Grading Area.

Conclusion:

We are pleased to advise that the Fire Insurance Grades have improved for the City of Richmond. The updated Grades have been published on the Canadian Fire Insurance Grading Index.

The underlying data of this letter has been developed for fire insurance grading and classification

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purposes. This letter may be used by the stakeholders to assist in planning the future direction of public fire protection services for the City of Richmond.

Please contact our office if there are any questions or comments regarding the intent or content throughout this letter.

Sincerely,

Robert McGuinness P.Eng, PMSFPE,
Public Fire Protection Specialist,
Fire Underwriters Survey

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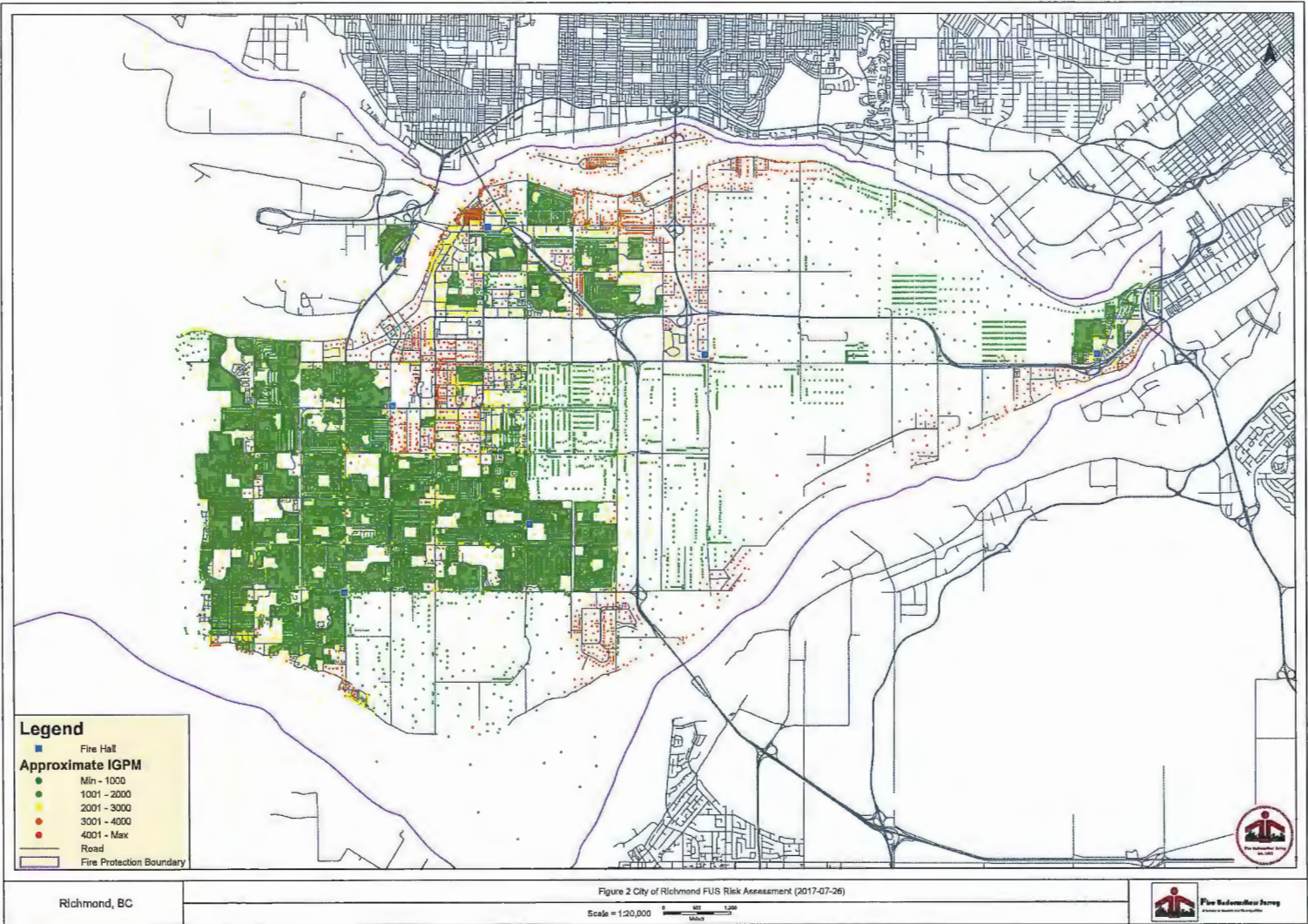
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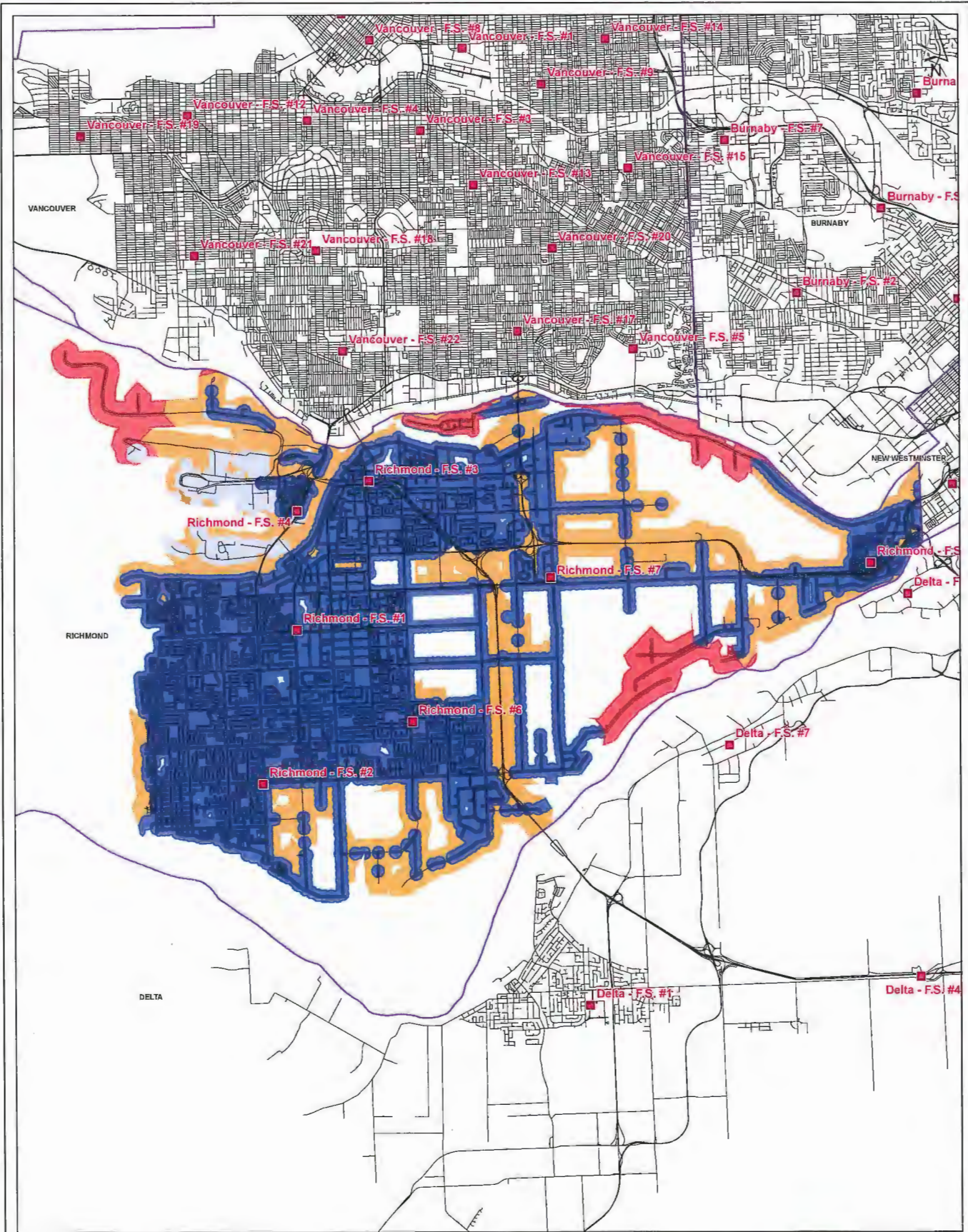
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APPENDIX A – Mapping

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Richmond, BC

Scale = 1:25,000



Figure 3 City of Richmond - PFP Map 2017



Date Drawn: 2017-10-06

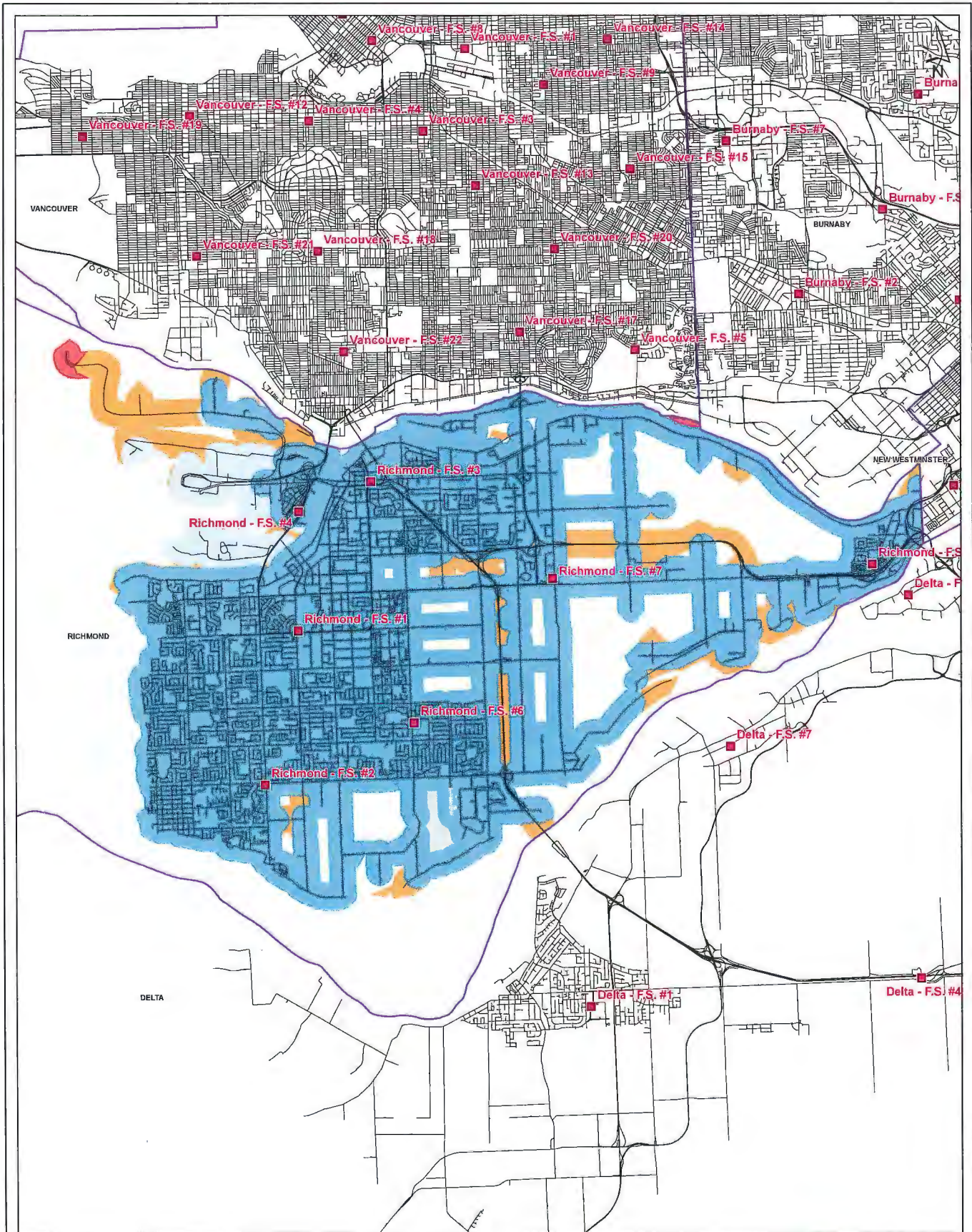
Drawn By: JU

Preliminary Final

Commercial Personal

Legend	
Fire Hall	3
Road	3 (Private Hydrant Protected)
Fire Protection Boundary	4
1 (Private Hydrant Protected)	4 (Private Hydrant Protected)
2 (Private Hydrant Protected)	5
	5 (Private Hydrant Protected)
	6
	6 (Private Hydrant Protected)
	7
	7 (Private Hydrant Protected)
	8
	8 (Private Hydrant Protected)
	9
	9P
	10

These maps and figures are not intended to illustrate the exact response distance or fire insurance grade coverage areas but can be used to aid in determining the fire insurance grade that should be applied to the property in question. Fire Underwriters Survey does not warrant or make any representations with respect to the quality, completeness, currency or accuracy of anything contained in this map, the fitness of this map for any purpose or results obtained using information contained in this map and is not responsible for any action taken in reliance on information contained in this map. In all cases, field data should be used to confirm the data and accuracy of these maps; if differences are noted please contact Fire Underwriters Survey at 1-800-685-5661.



Richmond, BC

Scale = 1:26,000

Figure 4 City of Richmond - DPG Map 2017



Date Drawn: 2017-10-06

Drawn By: JU

Legend

- Fire Hall
- Road
- Fire Protection Boundary
- 1 (Private Hydrant Protected)
- 2
- 2 (Private Hydrant Protected)
- 3A
- 3A (Private Hydrant Protected)
- 3B(F)
- 3B(L)
- 3B(S)
- 3B
- 4
- 5

These maps and figures are not intended to illustrate the exact response distance or fire insurance grade coverage areas but can be used to aid in determining the fire insurance grade that should be applied to the property in question. Fire Underwriters Survey does not warrant or make any representations with respect to the quality, completeness, currency or accuracy of anything contained in this map, the fitness of this map for any purpose or results obtained using information contained in this map and is not responsible for any action taken in reliance on information contained in this map. In all cases, field data should be used to confirm the data and accuracy of these maps; if differences are noted please contact Fire Underwriters Survey at 1-800-665-5661.

Preliminary Final

Commercial Personal



FIRE UNDERWRITERS SURVEY

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c/o Opta Information Intelligence

APPENDIX B CSPFP – Section Summaries

Western Canada 101-8333 Eastlake Drive Burnaby, BC V5A 4W2 1 (800) 665-5661	Ontario 600-175 Commerce Valley Dr. W. Markham, ON L3T 7P6 1 (800) 268-8080	Quebec 255 Cremazie Boulevard East Montreal, QC H2M 1M2 1 (800) 263-5361	Atlantic Canada 220-30 Damascus Road Bedford, NS B4A 0C1 1 (800) 639-4528
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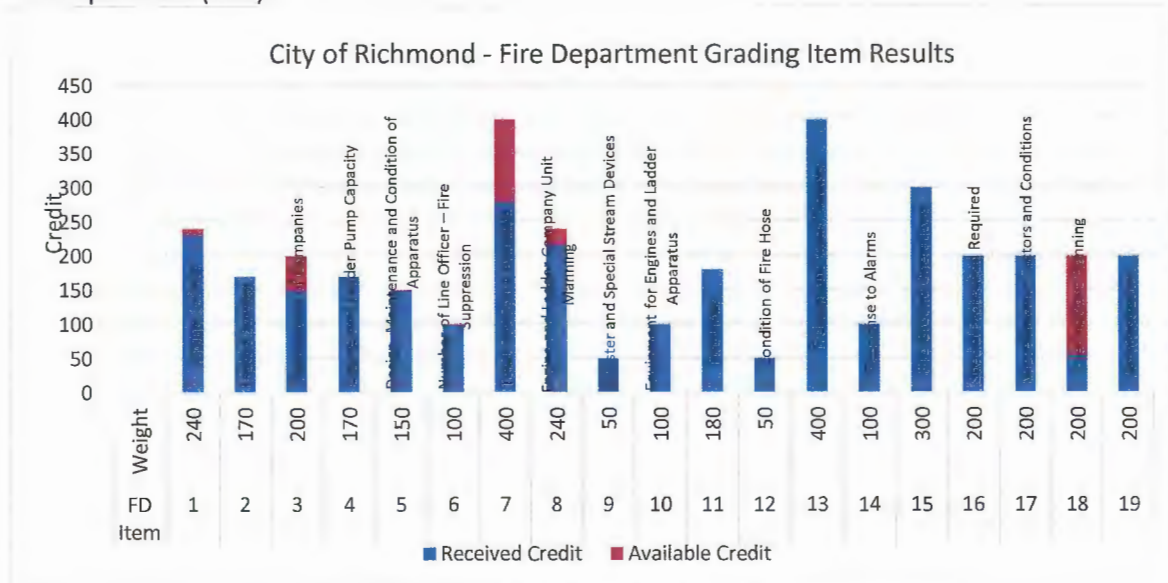


FIRE UNDERWRITERS SURVEY

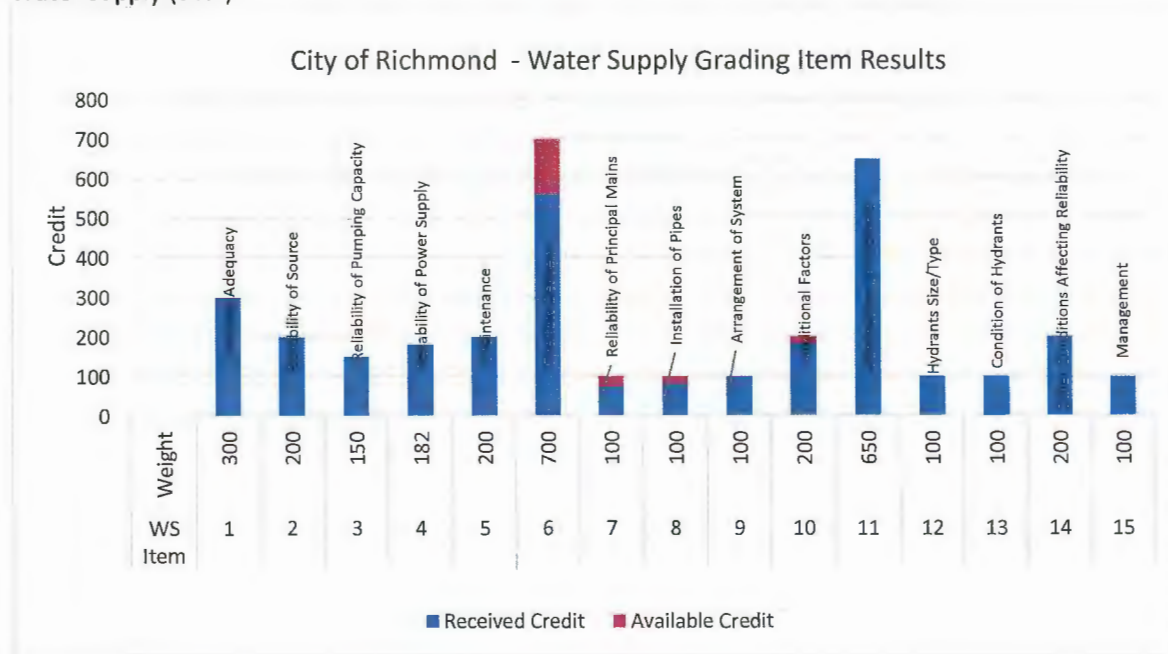
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Fire Department (40%):



Water Supply (30%):



Western Canada 101-8333 Eastlake Drive Burnaby, BC V5A 4W2 1 (800) 665-5661	Ontario 600-175 Commerce Valley Dr. W. Markham, ON L3T 7P6 1 (800) 268-8080	Quebec 255 Cremazie Boulevard East Montreal, QC H2M 1M2 1 (800) 263-5361	Atlantic Canada 220-30 Damascus Road Bedford, NS B4A 0C1 1 (800) 639-4528
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FIRE UNDERWRITERS SURVEY

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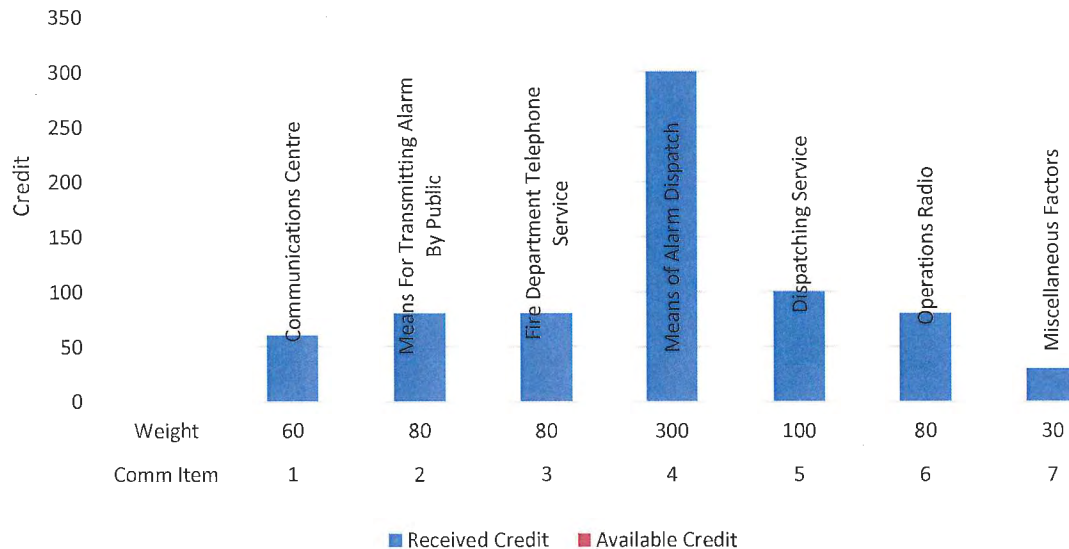
Fire Safety Control (20%):

City of Richmond - Fire Safety Control Grading Item Results



Communications (10%):

City of Richmond - Communication Grading Item Results



Western Canada 101-8333 Eastlake Drive Burnaby, BC V5A 4W2 1 (800) 665-5661	Ontario 600-175 Commerce Valley Dr. W. Markham, ON L3T 7P6 1 (800) 268-8080	Quebec 255 Cremazie Boulevard East Montreal, QC H2M 1M2 1 (800) 263-5361	Atlantic Canada 220-30 Damascus Road Bedford, NS B4A 0C1 1 (800) 639-4528
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