FIRE UNDERWRITERS SURVEY

Of The

SALT SPRING ISLAND
FIRE PROTECTION DISTRICT

For

FIRE INSURANCE GRADING PURPOSES

Private & Confidential

JULY 2005
Final Draft Report

Prepared for:

Salt Spring Island Fire Rescue Department
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FIRE UNDERWRITERS SURVEY
A SERVICE TO INSURERS AND MUNICIPALITIES

C/o CGI Information Systems and Management Consultants

July 5, 2005

Salt Spring Island Fire Rescue
105 Lower Ganges Road
Salt Spring Island, BC
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Attention: Mr. Dave Enfield, Fire Chief – Salt Spring Island Fire Rescue
Mr. Ted Hinds, Chair – Salt Spring Island Fire Protection District

Re: Fire Underwriters Survey – Salt Spring Island Fire Protection District

A survey of Salt Spring Island Fire Protection District (SSIFPD) fire defences was conducted in August 2004. The results of this survey are now complete and offered for your information. Fire Underwriters Survey (FUS) conducted the assessment primarily for fire insurance grading and classification purposes. The following report provides a brief description of the grading process and outlines significant findings of the assessment. In addition and at the request of SSIFPD, this report also includes comments and general recommendations that are aimed at improving the level of fire protection within the SSIFPD - in areas of fire department operations that were identified by the fire insurance grading process.

The comments made within this report are general statements giving indication where fire protection improvements can be considered. This report was not commissioned to provide detailed recommendations. Nor was the assessment an operational audit.

In addition to an evaluation of fire department operations, a Fire Underwriters Survey normally also includes an evaluation of emergency water supplies. At the request of the various water works districts and utilities on Salt Spring Island (SSI), waterworks evaluations did not occur. This presents a dilemma for the fire insurance grading process as it relies upon updated water supply information in order to calculate community fire insurance grading classifications. As a result, in order to complete this grading, the former 1990 grading of Salt Spring Island's water supply systems have had to be utilized. However, future improvements and expansions of water supply systems will not be recognized by Fire Underwriters Survey until such time as a water supply review is authorized to occur – this will include FUS recognition of the water supplies serving SSI's proposed Channel Ridge Development.

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1.0 Fire Insurance Grading Results

We are pleased to advise that our inspection and analysis has determined that fire department operations and services on Salt Spring Island have improved significantly from the former 1990 assessment. As a result, the community's fire insurance grading classifications will be revised as follows:

A. Public Fire Protection Classification (P.F.P.C.)

Class 6 in recognized hydrant protected areas (HPA) (formerly HPA 7)

Class 9 in non-hydrant or non recognized hydrant protected areas (formerly class 9)

Class 10 in areas of the Island outside SSIFPD boundaries (formerly not classed)

Our congratulations are extended to the SSIFPD Board, Fire Rescue Department and community members for continuing to work towards and support improving the level of fire protection and prevention on Salt Spring Island.

The P.F.P.C. is a numerical grading system scaled from 1 to 10. One is 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.

Class HPA – 6 refers to the protection provided in recognized hydrant-protected areas within the boundaries of a fire protection district.

Class – 9 refers to the protection provided beyond a recognized hydrant-protected area within the boundaries of a fire protection district.

Class – 10 refers to portions of Salt Spring Island outside SSIFPD boundaries and also those areas of the Island not accessible by gazetted roadway.

As a result of this assessment, the following water supply systems remain recognized by FUS for fire insurance grading purposes:

- North Salt Spring WWD
- Beddis WWD
- Highlands Water Utility

The following water supply systems will remain not recognized by FUS for fire insurance grading purposes:

- Cedar Lane WWD
- Fulford Harbour WWD
- Mount Belcher ID
- Fernwood
- Cedar of Tuam WWD
- Scott Point WWD
- Harbour View ID

In areas of SSI where non recognized water supply systems are located a fire insurance grading of PFPC Class 9 applies.

Fire Underwriters Survey also assigns a second grading classification to communities. The second grading system entitled Dwelling Protection Grades (D.P.G.) assesses the protection available for small buildings such as single-family dwellings. SSI's DPG classifications remain the same as previous assignments despite being eligible for improvement. This is due to the lack of water supply system evaluations occurring during the assessment. Salt Spring Island's DPG ratings are as follows:

B. Dwelling Protection Grade (D.P.G.)

DPG	**3A**	(formerly DPG –3A)
DPG	**3B**	(formerly DPG-3B)
DPG	**5**	(formerly DPG -5)

The DPG is a numerical grading system scaled from 1 to 5. One (1) is the highest grading possible and DPG 5 indicates little or no municipal fire protection is available. This grading system reflects the ability of a community to respond to fires in small buildings.

Grade – 3A	Refers to the protection afforded to single-family residential buildings and like structures within 300 metres of a "recognized" fire hydrant, within 8 km. of a primary responding fire station within the boundaries of the fire protection area.
Grade – 3B	Refers to the protection afforded to single family dwellings and like structures beyond 300 metres of a recognized approved fire hydrant within 8 km. of a primary responding fire station within the boundaries of the fire protection area.
Grade – 5	Applies to areas within the SSIFPD that are beyond 8 km from the closest responding fire station and to building structures not accessible by gazetted road. The rating also applies to all areas outside the SSIFPD on Salt Spring Island.

2.0 The Public Fire Protection Classification System

The PFPC grading system is a measure of a community's overall programs of fire protection. Alternatively, the DPG grading system only evaluates a fire department's ability to respond adequately to fires in small buildings.

The ability of a community's fire defences are measured against recognized standards of fire protection relative to fire hazard and fire / life safety risk present within the community. The following broad areas of fire protection are reviewed in the survey and have the following weights within the FUS grading system:

- Water supplies and distribution system 30%
- Fire department operations 40%
- Fire service communications 10%
- Fire safety control within the community 20%

The PFPC and DPG classifications are conveyed to subscribing companies of Fire Underwriters Survey. FUS subscribers represent approximately 90% of the fire insurance underwriters in

Canada. Typically, subscribers use this information as a basis in their fire insurance underwriting programs to sets limits in the amount of risk they are willing to assume within a given community or portion of a community, and to set fire insurance rates for commercial properties. Improved fire protection grades may result in increased competition for insurance underwriting companies to place their business within a community. Our analysis indicates that an improved fire protection grade has a positive effect on fire insurance rates.

In addition to fire insurance grading categorization, FUS classifications are a measure of the fire protection within a community. Many progressive communities use the classification system to assess the performance and adequacy of their fire protection programs.

The majority of small to mid size communities that have volunteer or paid on call structured fire departments fall into FUS Classes 5 to 8 within the PFPC grading system. This is normally due to the limited financial resources available to smaller communities to support higher levels of protection such as having paid full time fire fighters.

Class 5 represents a lesser level of protection for a municipality with a full-time fire department, but is very respectable for a volunteer or composite fire department, and is considered to be achievable for the Salt Spring Island Fire Protection District.

A summary of the Protection Grades assigned to Canadian cities is presented in Table 1.

Table 1 - Protection Grades – Canadian Cities

*Source: Fire Underwriters Survey 01-1

Class/ Population	1	2	3	4	5	6 - 8	9 - 10
Over 100,000	1	12	15	4	-	-	-
50,000 - 100,000	-	5	18	24	5	2	-
25,000 - 50,000	-	-	13	28	21	13	-
Under 25,000	-	2	7	75	304	1493	1138
Total	**1**	**19**	**53**	**131**	**330**	**1508**	**1138**

The strength of fire defence within a community depends largely on the willingness and financial ability of the community to support this emergency service. FUS statistics indicate that the larger the population, typically, the better the ability of fire protection when measured against the risk of major fires within the community. The best scenario on the level of fire protection occurs when community expectations of fire suppression and prevention match the community's willingness to pay for this expectation.

Table 2 – Protection Grade for BC Communities with Populations Bet. 8000 - 20000

Municipality	Population	PFPC Class	Municipality	Population	PFPC Class
View Royal	8045	6	Williams Lake	11833	6
Sechelt	8488	6	Comox	12394	5
Sooke	9730	6	Terrace	12565	5
Whistler	9754	5	Powell River	13680	6
Nelson	9784	5	Colwood	14825	7
Coldstream	9896	6	Prince Rupert	15020	5
Lake Country	10064	7	Squamish	15390	5
Quesnel	10417	6	Pitt Meadows	16001	6
Kitimat	10449	4	Central Saanich	16451	6
Salt Spring Island	11000	6	Salmon Arm	16466	5
North Saanich	11103	7	Esquimalt	17038	7
Parksville	11245	7	Fort St. John	17280	6
Dawson Creek	11290	5	Oak Bay	18357	4
Sidney	11495	6	Cranbrook	19608	5
Summerland	11776	6	White Rock	19735	5

The grading assignment of other BC communities with similar populations as SSIFPD is contained in Table 2. As the Table indicates, based on population, SSIFPD is now rated standard in class with other communities with similar populations that have good progressive fire protection programs. The Table was expanded to communities with 20,000 residents due to the fact that Salt Spring Island's population is reported to swell to 20,000 or more during tourist season periods. Alternatively, the Survey found that there are areas within SSI Fire Rescue's protection programs where improvement is needed and is recommended. PFPC classifications should not only be viewed in terms of improved fire insurance rates but also as a measure of fire protection that is present within a community.

Improvements that would have a cumulative positive effect in fire insurance grading classifications and fire protection ability are discussed within this report. The intent of identifying areas where improvements can be made is to provide the Salt Spring Island Fire Protection District direction in their community fire protection planning – if so desired and supported by the community.

3.0 Overview of the Assessment Process

There isn't any one universal model of fire defence that can be applied to all situations or to a community requiring this emergency service. Ideally, the strength of a fire protection program is balanced between the risk of serious fire and with a community's fire experience. Fire defences

should be tailored to meet both of these needs. To gauge the needs of the fire service based on experience alone would be to ignore perils that have not yet occurred. Ignoring experience and focusing on risk alone may tend to build-up a fire department force beyond its financial acceptability of the taxpayer paying for this service.

FUS measures the ability of a fire department against the risk of fire likely to occur within a community. This measurement is usually not determined by the most significant risk, nor is it based on the average fire risk. Our measurement tends to focus on those structures where there is a considerable risk to fire and life safety, and where total or temporary loss of a particular structure would have a significant impact to a community's tax base and economy. A fire department should be structured and supported to effectively deal with everyday emergencies while at the same time capable to control and extinguish most fires that may occur.

To achieve this objective, the structure of a fire department must be tailored to the needs of a community, and will vary for each community. Each component, comprising a community's ability of fire defence, must be evaluated and developed to achieve the desired and correct level of benefit. For this reason no two fire departments will be the same. Some of the factors that must be balanced and tailored against the fire risk, degree of criticality, community expectation, fire experience, and the ability to financially support this emergency service, are as follows:

- Type, number and condition of fire apparatus
- Pumping capacity
- Response to alarm protocols
- Response times to critical risks
- Adequacy of the fire fighter and emergency responder training program including specialized training
- Emergency communication systems
- Ancillary equipment
- Fire department roster type and response levels
- Fire safety education
- Building controls
- Fire prevention inspections
- Adequacy & reliability of emergency water supplies
- Automatic fire protection systems
- Management of emergency services

FUS examines the entire program of community fire defence in order to assess and grade the overall program. For instance, strengths in community fire safety can offset some deficiencies in emergency water supplies, and vice versa. Alternatively, there are some areas within a FUS grading that carry substantial weight, such as:

- The type of manning (i.e. career fire fighters vs. volunteers),
- The quality of training programs,
- The type of apparatus and ancillary equipment for the hazards present,
- The condition, age and maintenance of fire apparatus and fire suppression equipment,
- The distribution of companies relative to fire risk,
- The availability, adequacy and reliability of emergency water supplies
- Response to alarms procedures, and
- Fire safety inspections.

The Survey has found that SSIFPD has good programs of protection in the areas of:

- Organization, administration, management and planning of the fire department
- Risk and hazard planning programs
- Pre-fire planning program
- Recruit and drill training program
- Officer strength
- Fire fighting equipment
- Fire prevention and public education programs

Alternatively, the Survey found that improvement would be beneficial in the following protection programs:

- Reliability of response to alarms
- Suitability and functionality of fire stations
- Lack of adequate training facilities
- Emergency water supply coverage across the District

In this report SSIFPD refers to Salt Spring Island Fire Protection District either as the legal entity Fire Protection Improvement District or to identify the area of SSI protected with fire rescue services.

Alternatively, SSIFR refers to Salt Spring Island Fire Rescue Department.

4.0 Summary of Major Recommendations Listed Within Report

A summary of the most significant SSIFPD recommendations that have been made within this report are presented below:

Recommendation 10.2.A:

The fire insurance grading assessment has determined that an aerial ladder fire truck is not required on SSI at this time due to the current profile of building structures that are present; however depending upon the profile of future growth including the Channel Ridge development, an aerial ladder truck may be deemed required in the future. Fire hall plans and modifications should consider potential future needs.

Recommendation 10.5.E:

Fire apparatus improvements determined by the Survey include:

- CAFS LAV Pumper
- Replacement of Tender T3

Recommendation 10.7.B:

The levels and types of service SSIFPD provides should be in concert with the needs and desires of SSI residents. In order to determine service levels a fire protection master plan should be initiated.

Recommendation 10.9.4.A:

A fire training facility should be constructed on SSI. Preference is given to Fulford fire station property as it is already secured by SSIFPD.

Recommendation 10.14.A:

The Ganges fire station should be replaced from a functional fire service delivery perspective. The replacement fire station should remain within the vicinity of Ganges. Access and egress considerations are a priority.

Recommendation 11.A:

Should the Channel Ridge development proceed as is currently planned, fire station three should be relocated to or in the vicinity of the development. However, the relocated hall will have response issues that will need to be overcome and prepared for. The relocated hall should be daytime manned possibly with prevention staff.

Recommendation 4.A:

A global approach to the fire protection needs of SSI is paramount to improving protection levels. This includes having common strategies for fire protection/ prevention and emergency water supplies.

The following paragraphs summarize the findings of the Survey.

5.0 Evaluation of Water Supplies for Fire Fighting

At the request of the various Salt Spring Island water boards and utilities, emergency water supplies were not evaluated as part of this Survey, with the exception of:

- Cataloguing both pre-existing recognized and unrecognized water systems
- Plotting the area of coverage for the water systems
- Evaluating the impact to providing adequate fire protection in areas without water supplies and in areas with unrecognized water supply systems.

For the purposes of reclassifying the SSIFPD, water supply ratings were utilized from the past fire insurance grading review. The relative classification assigned for emergency water supplies at that time was PFPC Class 7, which applies to areas protected by the North Salt Spring, Highlands and Beddis water supply systems.

The percentage of built-up areas of SSI not protected by recognized water supply systems is evaluated against the areas that are considered protected, and is factored into the overall grading of the community.

SSIFR's planning efforts that identify the strength and weaknesses of the Island's emergency water supply systems have been noted, such as:

- Cataloguing and plotting the location of both pressurized and non pressurized viable water supply sources throughout the Island
- Cataloguing the water flow rate range through fire hydrants throughout the Island
- Construction of dry hydrants at strategic locations on the Island
- Placement of water cisterns at strategic locations on the Island

As a result of this fire insurance grading review, all water works systems on Salt Spring Island will be added to the FUS fire insurance grading index. This process will provide subscribing fire underwriters clarity of water supply systems that have been recognized by FUS for fire insurance grading purposes, and alternatively, water supply systems that have been evaluated as not meeting fire insurance grading minimums or that have not been adequately evaluated.

The relative fire insurance classification of Salt Spring Island's water supply systems can not be improved until such time as a reassessment of these systems occurs. Because of this, the overall fire insurance grading classification for SSIFPD will be difficult to improve upon, despite any improvements that are made in fire, rescue or prevention programs. This is due to the fact that adequate and reliable emergency water supplies are a vital component to providing an adequate level of fire protection, and consequently represent 30% of a fire insurance grading.

Generally, fire / emergency protection within a community improves if there is a common strategy towards its implementation. In communities, such as SSI, that have various layers of higher government and / or a number of local government autonomies, this is difficult to achieve due to the various agendas in direction that each may have. It is fully understood that a fire protection district such as SSIFPD does not have the direct ability to improve a governance structure that would result in a common global strategy for fire / emergency protection. However, the SSIFPD should see their mandate as improving in the level of protection on the Island and not just the delivery of services. Fire protection improvement would mean the harmonization of emergency water supplies and emergency services delivery. Long range planning and petition should focus on this strategy. In the interim, in order to influence a common approach to emergency protection, SSIFPD should work towards placing membership (and visa versa) on the various water supply boards throughout the Island.

In addition to working towards a common emergency protection governance structure, the SSIFPD should work towards petitioning the various water supply boards to improve upon their water supply systems where necessary in the delivery of adequate fire protection, as well as system expansion.

It should be ensured that SSIFPD has the legal right to utilize and draw water from the various water supply systems on Salt Spring Island. A contractual agreement should be drawn up for each and every private system and improvement district authorizing water supply use by SSI Fire Rescue for both fire fighting and practice purposes. Each agreement should contain a hold harmless statement for SSIFPD and Fire Rescue officers when using water supplies. From a risk

management and liability perspective, if satisfactory use agreements cannot be obtained, subject water supply systems should not be considered usable for fire fighting and practice planning.

To improve upon and expedite water supply delivery, all static water supply points on SSI should be outfitted with a dry hydrant that are constructed in accordance with recommendations of NFPA pamphlet 1142 - Standard on Water Supplies for Suburban and Rural Fire Fighting. To improve upon and expedite water supply delivery, SSIFPD should consider pressurizing all existing and future water cisterns wherever possible. This is best accomplished by elevating tanks above the height of water tenders; however the support structure must be engineered to ensure seismic stability.

The SSIFPD should work towards ensuring that there is no built up portion of the District that is more than three to four km from a water supply point. This may require the development of additional static water supply sources and cistern placement. However each water supply source should be capable of supplying a minimum of 25000 Igal. at any time of the year. (Lesser amounts are also considered acceptable provided they are available via dry hydrant or pressurized system, and the total available quantity within three to four km of all built–up areas adds up to 25000 Igal.)

Due to the numerous areas on SSI without adequate water supplies, it is recommended that future apparatus procurement strategies incorporate automatic foam systems or preferably compressed air foam systems in their design.

For fire insurance grading purposes, the fire flow requirement set for SSIFPD during the 1990 assessment was 1500 Igpm. The fire flow requirement for SSIFPD has been increased considerably as a result of this assessment. The fire flow requirement need has been set at 2250 Igpm, which applies mainly to Ganges and its surrounding areas. This figure does not represent the highest calculated flows that may be needed. The fire flow requirement for other existing commercial areas of the Island has been set between 1500 to 1800 Igpm, and once again does not represent the highest fire flows that may be needed for fire control. Depending upon the sprinklering requirements of the proposed Channel Ridge development, the community should fit within the 2250 Igpm assignment.

6.0 Evaluation of Fire Department Operations

Fire Department operations have seen many improvements since the last FUS study including improvements in almost all areas that were reviewed. Noted improvements have occurred in fire

apparatus, fire equipment, management, administration and planning programs and fire prevention activities. The relative classification of fire department operations has improved one protection class from a Class 7 to Class 6.

7.0 Evaluation of Fire Safety Control

SSIFPD's fire safety control programs have improved two relative protection classes, from Class 6 to Class 4. The improvement is a result of:

- The quality and frequency of fire inspections
- Public education programs
- Pre-incident planning

Fire prevention plays a significant role in the FUS grading system and is seen as a proactive means to reduce the number of fires and the reduction of damage or injury from fire. This program's continued support is encouraged. Continued improvement in the frequency of inspections for all occupancies is recommended.

8.0 Evaluation of Emergency Communications

SSIFPD Fire Department's emergency communication program rated fairly high within the FUS fire insurance grading system. The relative classification has improved from a PFPC Class 6 to a PFPC Class 4. The resultant improvement is due to a number of factors associated with the regional emergency call dispatch system and 911 systems. Emergency communications are considered consistent with the protection program needs within the community and few areas for improvement are being suggested within the report.

9.0 Conclusions

Since the last FUS assessment, the Salt Spring Island Fire Protection District has improved in many areas in their fire protection programs. Despite improvements not being credited to emergency water supply systems, the improvements that have been made in other protection programs have warranted an improved fire insurance grading classification. However, this report recommends that SSI continue to improve it fire / emergency protection levels on the Island.

10.0 Additional SSI Fire Rescue Service Comments

The following fire/rescue service comments are not provided in order of importance or outline all areas where improvements could be made. They are provided here to give the Salt Spring Island Fire Protection District guidance from a fire insurance grading perspective where improvements to protection programs can be considered, if so desired and supported by the community.

10.1 Engines and Apparatus in Service

The FUS grading standard evaluates the number of fire trucks that are in service relative to the community's fire risk and fire hazard. The greater the risk and hazard rating the more resources are needed to control or suppress a given fire, and consequently the greater the number of fire apparatus that are required. In assessing the number of Pumper trucks that can be credited available for service a number of factors are considered including:

- Apparatus type,
- Apparatus condition
- Apparatus age
- Apparatus maintenance programs
- Community emergency response profile requirements
- The number and location of emergency response points

Mutual aid assistance is credited for the actual value it represents; the inherent delay of its arrival; and the ability of the fire departments to safely and efficiently work together. No mutual aid credit for Pumpers was considered due to their inherent delay of arrival from the mainland or other islands to Salt Spring Island.

Credit was given to each of Salt Spring Island's class A Engines. Partial credits were given to SSIFPD's other trucks with permanently mounted pumps primarily due to their lack of ULC certification. Due to the size of response coverage area along with fire fighting need in each fire response zone, the FUS grading schedule calls for five Pumpers to be in service to provide initial response to alarms of fire. Two Pumpers are required at each fire station with the exception of the Ganges Hall where, the 2nd Pumper could be provided from Fire hall 3 – due to its proximity with fire station 1.

Table 3 – Profile of Existing Fire Apparatus (2004)

Hall	Year	Unit Identification	Vehicle Type	Pump & Tank GPM – Gallons	Manufacturers	Age	ULC	Credit
1	2003	E-1	Pumper/Rescue	1050 x 700	E-1 - Superior	2	-	Partial
1	2000	T-1	Tanker	420 x 1500	Superior	5	-	Partial
1	1994	M-1	LAV	400 x 200	Pierce / Ford	11	-	Partial
2	1997	E-2	Pumper	1050x 1000	Superior	8	33c	Full
2	1994	T-2	Tanker	420 x 1500	Superior / Freightliner	11	-	Partial
2	1994	M-2	LAV	400 x 200	Pierce / Ford	11	-	Partial
3	1992	E-3	Pumper	1050 x 700	Superior / Pierce	13	3475	Full
3	1986	T3	Tanker	250 x 1500	Anderson/International	19	-	Partial

The required number of Pumpers and their spatial arrangement is likely impractical for SSIFPD due to several factors including delayed and lesser response levels from the outlying halls, and due to the concentration of emergency calls in the Ganges region. It is recognized that SSIFPD utilize a delayed general page or general page to alert fire fighters regardless of call location on the Island. This fact does not counteract the grading schedule's requirement of two Pumpers at each outlying station – due to fire flow and fire fighting requirements in each of the response zones.

When the Channel Ridge development comes to being, two Pumper trucks will definitely be needed at fire station 2, particularly if the station is relocated to better protect the development and northern island areas. Therefore at this time the FUS Grading Schedule will specify six Pumpers being needed.

Response coverage from an adjacent fire station does not satisfy initial response requirements (except in the case of hall 3 supplying hall 1) due to the distance between fire stations / response districts - in order to satisfy the requirements of the grading schedule, expediency of initial response by two Engines is the primary consideration. SSIFPD cannot meet this standard due in part to:

- Deficient number of Pumpers
- Large response districts
- Weak response coverage areas

Refer to Table 4 – Initial Response to Alarms of Fire.

Recommendation 10.1.A:

In order to receive full fire insurance grading credit through each fire apparatus's useful lifespan, all Pumpers, ladder trucks, tankers and LAV must be designed and constructed and labelled to ULC pamphlet S515 – Standard for Automotive Fire Fighting Apparatus and ULC pamphlet S523 – Standard for Light Attack Fire Fighting Apparatus. Note: FUS does not accept 3rd party certification testing and labels unless the testing agency is accredited by Standards Council of Canada and by Fire Underwriters Survey.

SSIFPD needs to work towards improving fire fighter fire response coverage in the Fulford fire response coverage district and other outlying areas. The criteria listed in the Table of Initial Response should be used as a guide.

The Channel Ridge development will require a redistribution of fire apparatus in order to provide adequate coverage to the region. In addition, SSIFPD's existing fire hall locations will need to be reviewed.

10.2 Ladder Truck Service

The Survey has determined that SSIFPD does not require an aerial ladder device at present according to fire insurance grading criteria. The Survey also found that a sufficient number of ground ladders are installed on fire trucks. The criteria the Grading Schedule utilizes to determine the need and benefit of an aerial ladder is the presence of five buildings that are three stories are greater. While SSIFPD does have many buildings that are multi-storey, there are an insufficient number of multi-storey buildings in each of the response district to warrant this type of vehicle at this time.

Alternatively, when evaluating the building profiles at the future Channel Ridge development, an aerial ladder unit will likely be needed.

Table 4 – Initial Response to Alarms of Fire

Recommendation 10.2.A:

SSIFPD should consider planning the needs and merits of an aerial ladder truck to meet the profile of the proposed building stock at the Channel Ridge development.

12.3 Distribution of Response

Two of three SSIFPD fire stations are located at or near community centres. The third station, fire hall 3 is located strategically at the intersection of arterial roadways servicing the northern portions of the Island. Based on the existing built profile and current network of roadways on SSI, FUS is in agreement with the existing general location of the fire stations.

All existing major community centres with the exception of Beddis are in fairly close proximity to one of the stations. Ideally, all commercial buildings within a community are located within three kilometres of a fire station. All single family residential buildings should ideally be located no more than 5 km of any fire station. These benchmarks indicate that the majority of commercial buildings on SSI have fairly good response run protection whereas response distances to residential properties can be excessive in various parts of the Island.

The northern tip of the Island, because of distance, does not qualify for fire insurance grading recognition. Residential properties located further than West Eagle Drive and Northview Road are beyond 8km from fire station three and therefore are not eligible fire insurance grading recognition by FUS.

In addition, there are several other locations on the Island where response runs are lengthy due to response distance, response conditions or due to weak response coverage. Of the three factors, weak response coverage is the item, easiest to improve upon by a fire service.

The grading schedule evaluates the response distances to all built-up areas on the island. This is done for the initial responding fire truck as well as for subsequently responding apparatus. SSIFPD meets grading requirements in its major commercial centers for the 1st responding fire units but lacks suitable coverage for secondary arriving trucks.

When the Channel Ridge development comes on line it will not be suitably protected from a response distance / time perspective. Channel Ridge will be 5 to 7 km from fire station 3.

Recommendation 10.3.A:

Due to the size and configuration of SSI, distribution of response coverage will be difficult to improve upon in the foreseeable future. The realization of the Channel Ridge development will necessitate relocation of fire stations to maintain current levels of protection.

10.4 Pumping Capacity

SSIFPD has sufficient pumping capacity to meet the majority of fire fighting requirements on SSI. The capacity credit of the fire department's three Pumpers exceeds the Island's fire flow rate even with one Pumper out of commission.

10.5 Design, Maintenance and Condition of Apparatus

SSIFPD has a good fire apparatus maintenance program. Additional improvements to the program can be made and is recommended.

Fire trucks undergo a mechanical/ electrical systems/component check weekly by duty shift staff. In addition, fire fighting equipment is inspected and operated. Truck and equipment check sheets are used. Post use vehicle checks are not formally completed.

Trucks undergo provincial licensing inspection by local garage, which also performs minor automotive repairs when necessary. The local garage normally employs only one mechanical repair person. All specialized mechanical repairs must be done off Island. Trucks are oiled and lubed by fire department duty crew members.

Fire department Pumpers are serviced by Profire every 2nd year. Tanker trucks and light attack vehicles (LAV) are serviced every two to three years. Underwriters pump tests are not performed.

Record management of the fire truck maintenance and service is rated fair. Individual truck service files are not kept. Service check logs were found to be incomplete. Management software is not used to facilitate record keeping and management.

The Grading Schedule evaluates the overall maintenance and service program for fire apparatus and equipment. Well documented, preventative maintenance service performed by an in-house mechanical service department is the benchmark used for comparison. Mechanical service

should be available on demand when needed. Single mechanic and/or singular mechanical repair shops and island isolation factors are seen as reliability weaknesses unless suitable automatically operating redundant back-up measures are available and secured.

Pump preventative maintenance service should occur annually and be complete with underwriter's service tests for all units performing initial attack duties.

Management software is the preferred choice to track apparatus service and maintenance schedules.

Recommendation 10.5.A:

A minimum of two Class A Pumpers should always be available for service on the Island. When Hall 3's Pumper is undergoing service, Hall 1's light attack truck should be relocated to replace it.

Recommendation 10.5.B:

Suitable arrangements need to be made to provide for back-up emergency mechanical repair service when needed (due to primary mechanic not being available). Preferably, primary and back-up mechanical repair service provides both priority and mobile repair service for the fire department.

Recommendation 10.5.C:

Fire pump preventative maintenance service should occur annually for all units providing initial fire attack duties. Annual underwriter's service tests are also recommended. This will require the development of a test site.

Recommendation 10.5.D:

Apparatus service and maintenance records should be kept on an apparatus by apparatus basis using similar management techniques as is used for fire fighter personnel records. In addition to suitably kept and arranged paper records, the use of management software should be considered to improve archiving of past service performance as well as service scheduling. Management software will improve forecasting of apparatus servicing cost trends.

The average age of SSIFPD's fire apparatus fleet is commendable. The one vehicle of concern is Tender T3, not because of its age, but due to its overall condition.

SSIFR's light attack trucks appeared to be sitting on their rear axle. It is recommended that their suspension be evaluated and they be weighed fully loaded to ensure that their GVRW and axle ratings are not being exceeded.

Further in this report it is recommended that SSIFR put into service a compressed air foam truck / light attack off road vehicle to aid in responding to interface fires and to weak or non hydrant protected areas. The report also addresses the need of an aerial ladder truck depending upon the building profile of Channel Ridge developments.

Recommendation 10.5.E:
Replacement of Tender T3 should become a priority. The vehicle is reported to be difficult to drive for many of SSI fire fighters. It has a steel tank which has been reported to leak. The truck may continue to be of value as a reserve vehicle. For insurance grading purposes, standard apparatus age requirements apply for tankers as they do for Pumpers. Tankers should be retired by their 25th year unless they are in superior mechanical condition and have back-up provisions in place.

10.6 Number of Chief and Line Officers

The survey found that the number of chief and line officers currently in place whether career or volunteer is sufficient given the number of Pumpers in service and response districts. The fire departments use of a Lieutenants position is endorsed.

10.7 Total Fire Force Available

The Survey has credited a fire fighter roster of 37, which includes all line officers whether they are career or volunteer. SSIFPD utilize a system whereby fire fighters are free to report to any fire station they are in close proximately to at the time of an emergency call or may report directly to an incident without first reporting to a fire station.

The FUS Grading Schedule gives preference to the traditional model of response whereby fire fighters report to a fire station, forming suitably sized companies before responding to emergencies. This system provides superior management control of an emergency incident. Under this system a minimum fire fighter roster size of 45 would be recommended for SSIFPD (a minimum of 15 fire fighters assigned to each fire station).

The SSIFR has reported that it may experience weak response coverage at various parts of the day and to various parts of the Island such as the Fulford area.

SSIFPD had five career members at the time of the assessment whose normal work hours are during day time hours. The fire chief is included in this number but will be excluded from further discussion as the position normally does not participate in direct emergency response duties. This will normally provide the fire department with two to three members on duty during the week day and one member on duty on week-end days. In addition, the fire department utilizes a duty crew system for 24 & 7 coverage. Currently all career staff are stationed at the main fire station in Ganges.

This assessment could not accurately quantify weaknesses in fire department response or coverage. SSIFR tracks fire fighter attendance at incidents on incident reports, however this information is not collected or disseminated to identify trends in response weaknesses. Until such time as response weaknesses can be suitably quantified, comments and recommendations aimed at evaluating strengths and weaknesses in responses as well as putting forward options for improvement cannot accurately be forwarded.

This report will not recommend the placement of existing career members to be stationed at the Fulford fire station or at fire station 3 despite the potential of improvement in emergency response to fire and medical emergencies that would occur. Prior to reallocating fire fighter resources or increasing career staff it is recommended that SSIFPD examine and determine its service mandate to Salt Spring Island. This would best be accomplished through a master plan. If this plan identifies that service level improvements are warranted and desired or if medical emergency assistance is a primary objective of the SSI Fire Rescue Department, then it will be obvious that in order to improve service levels that career staff should be stationed out of each outlying hall during day shifts and as off duty / duty crew assignment. The master plan must quantify the expected service level corresponding to the type of emergency.

Recommendation 10.7.A:

SSI Fire Department should track fire fighter response to emergencies corresponding to the type of emergency, its location and the time of day in order to fully establish response weaknesses and trends. Due to SSIFPD's response to alarm protocols, in addition to recording apparatus response times, fire fighter response times should also be recorded in order to provide meaningful analysis.

Recommendation 10.7.B:

The service level provided by the SSI Fire Rescue should be examined through a master planning approach. The intent of the plan is to establish and define an acceptable and achievable service level of response and service delivery along with options to provide a means to meet the desired service level. Community residents are normally included in the master planning process.

10.8 Fire Equipment

The Survey found that SSI Fire Rescue is fairly well equipped with ancillary fire fighting equipment and that existing budgets have capacity to meet current and future needs. No recommendations are made. The Department is well equipped with fire hose. The use of hi-vol hose has been noted and is endorsed because of lack of fire hydrants in many parts of the Island and because of spacing of hydrants in other areas.

SSI Fire Rescue recently initiated a program of fire hose testing and dating. A selection of hose is tested each year.

Recommendation 10.8.A:

SSIFPD's recently initiated hose testing operating guideline does not specify the testing interval of fire hose. Preferably fire hose is tested annually. Alternatively, SSIFPD should specify a testing interval for all hose such as, for instance "all hose will be tested within a three year testing cycle". This should ensure that no length of hose gets accidentally omitted from the testing program cycle.

10.9 Training Programs

Overall, SSIFR operates a very good training program for a volunteer structured fire department. The Department's lack of formal training facilities is the biggest drawback that was noted during the Survey.

10.9.1 Recruit Training

The recruit training program is well structured. A twelve month training curriculum has been in use for the past two years and recruits undergo up to thirty hours of specific recruit training prior to being assigned for duty.

Recruit training instruction is delivered by senior officers under the scrutiny of the SSI FRD Training Officer.

The recruit training program is separated from regular drill training every three out of four practices. Practice instruction is documented in a recruit training manual.

Within their 1st year a recruit will receive driver training and 1st responder training in addition to the normal training curriculum. Live fire training will also occur for recruits if buildings become available on Salt Spring Island.

Recommendation 10.9.1.A:
The recruit training program should be expanded to 40 hours prior to the recruit being assigned to a platoon. This will provide the recruit with additional reinforcement of the training instruction received and expand upon their knowledge base of fire fighting and safety practices.

Recommendation 10.9.1.B:
Live Fire Training should be delivered to recruits within their 1st year, preferably between the 6th and 12 month.

Recommendation 10.9.1.C:
SSIFPD should retain a comprehensive recruit training program and recruit acceptance requirements despite the challenges on SSI of finding new members.

The recruit training program has built in skill and knowledge benchmarks within the 1st - 30 hours and within the initial 12 months of training. 100% attendance is required for recruits in their initial training delivery schedule.

10.9.2 Regular Training Program

Fire fighter training programs also follow a 12 month training curriculum which has been put into place within the past three years. Training sessions are normally two hours in length. Occasionally, training occurs on week-ends in order to meet special training instruction needs.

Practice sessions are held three of four weeks per month. The 4th practice is dedicated to fire fighter association meetings. Of the three monthly practice sessions, one practice session is utilized for emergency medical response training; therefore actual fire fighter training occurs on

average twice per month. Fire fighters have access to approximately 92 hours of training instruction per year - of which 24 hours is dedicated to medical emergency training.

Lesson plans have been and continue to be developed by the training division. Captains or their designates deliver the training instruction. SSI FR conduct timed maintenance drills three times per year.

SSI FR policy regarding training is contained in operating guidelines; however SSIFR does not utilize a specific training manual but instead rely on the course material of IFSTA and other national standards. Fire fighters do not normally work towards training instruction certification. Tactical inspections of high risk buildings occur along with the use of pre-incident plans.

Recommendation 10.9.2.A:
Increase fire fighting training frequency to four tie s per month by relocating the association meetings to alternative nights.

Recommendation 10.9.2.B:
Consider the use of an in- house certificate or similar recognition to ensure fire fighters have training goals to work towards and to receive recognition for training milestones.

Recommendation 10.9.2.C:
Consider live fire training instruction on a more frequent basis such as once per year. The training can occur at either at an accredited facility or at a residential building burn on Salt Spring Island.

Fire fighters are organized into training platoons. SSIFPD maintains training records corresponding to training topics covered, training hours spent and training milestones reached for each fire department member. Average attendance at practices is 46% (2003) which is considerably low.

Recommendation 10.9.2.D:
Practice attendance should be improved upon with a goal of meeting 75% overall attendance level. Annual or cyclical training milestones and objectives will be difficult to meet for the training platoon or individual at the current attendance rate.

10.9.3 Qualifications of Officers

This component of the training program evaluation also rated highly in the FUS Grading Schedule. During the Survey a brief meeting was held with the career staff officers. Career staff appears very dedicated and motivated to improve protection levels on SSI.

Promotion to officer is based on seniority however the applicant must also undergo interview with senior officers, written test and be endorsed by the fire fighter membership.

Recommendation 10.9.3.A:

SSIFPD should move away from seniority / membership endorsed based officer selection system to an officer appointment system. Pre-qualifications should be established for each volunteer or career captain or higher applicant and selection made from a committee composed of fire chief, deputy chief and assistant chief. Lieutenant's positions could remain membership endorsed. Prequalifications could include specific training instruction certification including fire instructor level one and two.

Recommendation 10.9.3.B:

Career officers are encouraged to enrol in educational upgrading programs. Currently the assistant and deputy chief have completed level 1 and are currently enrolled in Fire Officer Level 2. SSI FRD should continue in its move to make fire officer certification a job description requirement for its chief officers. This will help in succession planning of senior officers from within the organization.

Recommendation 10.9.3.C:

An in-house certification course is recommended for the volunteer officers.

SSIFR members have received a wide variety of specialty training and specialty training instructor certification, which is useful in passing-off this knowledge when needed to the remaining membership.

10.9.4 Training Facilities

SSIFPD has few facilities for a modern training program. The current fire halls offer little to develop a comprehensive program from. The fire department is forced to 'make due' in many aspects of its training program or incur higher costs by sending fire fighters off the island for external training instruction.

Recommendation 10.9.4.A:

A fully functional training ground is recommended for SSIFPD. It is the opinion of the surveyor that the SSI FR is sufficiently organized to take full advantage of a training facility should it be made available. Fortunately SSIFPD has available property at Hall 2 that could be used for this purpose. It should not be seen as a significant disadvantage that the location is near one end of the protection district – the platoon training system usually ensures that the training curriculum is staggered per platoon and therefore not all fire fighters or fire apparatus should be at a training facility at any one time unless multi-company or other specialty training is occurring.

A training facility will improve the fire department's delivery of the following training areas:

- Recruit driver training
- Pumps and pumping
- Laddering
- Wet drills
- Live fire drills
- Auto extrication
- Vehicle fires
- Forest interface fire training
- Pump service tests
- Improved indoor and outdoor classroom facilities
- SCBA rescue training
- Hazardous material spills response
- Flammable liquid and gas fires

10.10 Response to Alarms

An "Officers Page" is utilized for incidents other than fire or smoke showing. A general page is used for alarms of fire. There are no pre arranged responses due to the variances in volunteer fire fighters response that may occur. Fire fighters respond directly to incidents unless they are in close proximately to or are passing by a fire station. This system is used over the traditional system of responding as a company – not because of it being a preferred choice but because of weaknesses and uncertainties in fire fighter availability and fire fighter response times.

Responding as a group of fire fighters with the appropriate equipment is a much more manageable, safer, effective and efficient approach when responding to an escalating emergency such as a fire.

In addition to direct response to emergencies by fire fighters, SSIFPD has addressed the issue of weaknesses in response by the hiring of a career staff members and the use of duty crews.

After the initial responding fire truck arrives normally the incident commander determines other apparatus requirements rather than having a pre-arranged response system.

Recommendation 10.10.A:
SSS FPD should continue to explore options for improving response to all parts of the Island by the use of the company response approach of response and minimum apparatus manning requirements.

The SSI Fire Rescue should consider:

- Designating specific fire fighters, which because of their daytime and night time locations, to respond directly to incidents in pre-defined specific areas of the Island. Other fire fighters that who do not have pre-defined areas or are outside of their specific response zone at the time of the call must respond to a fire station; organize into companies; and respond as per minimum manning policies. (Note: SSIFR currently uses this approach but not in a structured manner.)

- Increasing paid on call wages in an attempt to attract additional community members to the service thereby increasing response numbers and response coverage's; and potentially enticing current members to provide better levels of response. (Normally the issue of response in a volunteer fire service is not only the actual number of fire fighters who do respond to an emergency but also the timeliness of their response.)

- Fully identify the response / timeliness issue

10.11 Operating Guidelines

SSIFPD has a well developed, comprehensive and current set of operating guidelines, which the current version has been developed since the arrival of the current fire chief. In addition, rules and regulations / policies and procedures and occupational health and safety requirements are

similarly current and comprehensive. Fire fighters are required to sign–off that they have received and read the Department's rules and regulations.

It was noted that in the index of the operating guidelines that were received from the SSIFR that there was no operating guideline outlining safety practices for live fire training. This operating guideline would refer to the safe practices and procedures needing to be followed whenever SSI homes are utilized for live fire or similar training. A live fire operating guideline should also reference NFPA live fire training requirements.

Recommendation 10.11.A:
Live fire training of SSI fire fighters and or training week-end fire fighters should be curtailed until such time as a standard operating guideline has been developed and been approved that outlines the safety practices and procedures that need to be followed when conducting live fire or similar training on a SSI building structures.

10.12 Special Protection Requirements

Special protection requirements that have been identified on SSI include bush and grass fire exposures and marina fire fighting requirements.

The SSIFR has four wheel drive units with pumps and equipment for off road applications. There is also a tanker capable of pump and roll operations. An improvement to this system would be to enhance the LAV units with automatic foam capability.

Recommendation 10.12.A:
An off road capable compressed air foam (CAFS) light attack vehicle with pump and roll capability is seen as a very useful all purpose tool that would be of significant benefit on SSI.

The SSIFR does not have a marina fire boat. All fire fighting and rescue operations must be conducted landside unless a marine vessel can be secured. To improve marina fire fighting/rescue capabilities a marina rescue / light fire fighting vessel is recommended to be stationed land side - preferably at the Ganges Fire Station.

10.13 Fire Department Records

Overall, SSIFR's record management system is rated fairly good. In most areas evaluated suitable records are maintained and archived. SSIFR utilize an internally created custom data

collection software program to capture personnel, training, pre-incident planning, fire and hazard mapping, incident reports and fire prevention inspections. SSIFR appears to work well with this program and no comments are being forwarded regarding its replacement unless there is:

- Cross discipline information sharing issues
- Data archiving capacity issues
- Lack of data analytical tools
- Lack of select report generation
- Lack of long term support and maintenance

There appears to be the ability to generate selective reports and queries with the existing program. SSIFR is limited in its storage capabilities of paper records and business process filing due to the configuration and cramped quarters of the Ganges Fire Station.

Mechanical service records, as discussed earlier, need improvement.

10.14 Fire Stations

SSIFPD's two outlying fire stations have limited functionality, which is common with secondary fire stations in rural communities. These halls are described as 'secondary' due to the fact that the Ganges Fire Station is the focal point for administration, management, meetings, training and public access point for SSIFPD. The outlying halls seldom support these functions. Their primary duties include the storage of fire / emergency apparatus at strategic response points on the Island.

Both of these fire halls have very limited ability to handle administration and training functions without significant renovation and upgrades occurring. The Fulford hall has interior space that could be renovated to functional offices should the SSIFPD desire to decentralise or expand its existing administration functions; or to create a south island public access point. Hall two does not have sufficient space for training functions, although the land it is situated upon would be ideal for the creation of both indoor and outdoor training classrooms and a training centre.

Hall three offer very little functionality as a fire station but does have a reasonably sized lot which could be expanded upon for training purposes and which does provide adequate facilities for fire fighter parking. However it is the opinion of the Surveyor that the focus for training facility improvements should be made at the Fulford fire station. Fire station three has only two truck bays, no office space, very little storage space and no interior training space. Miscellaneous

storage is occurring outside the building and should be evaluated as a liability risk due lack of fencing on the grounds.

Fire Station 1 is the administration centre of SSIFR operations. The hall contains limited office space, storage space, workshop area and classroom / meeting room that has a capacity of 38. The hall has two double stacked apparatus bays. The building is a wood frame constructed and of one storey. The original building has been expanded upon several times to its current size and configuration. The hall offers SSIFPD's only public access point. The building and lot has a number of drawbacks including:

- No training facilities other than its classroom / meeting room
- Very poor and insufficient number of administration offices
- Small and limited functional public access point
- Seismic assessment and potential upgrading needed. (Earthquake zone 5)
- Lacks adequate vehicle exhaust
- Combustible construction; numerous renovations; exposed electrical; etc.
- Excessive public (non fire department related) access to the site
- Convoluted access and egress issues
- Turn-out gear dried in oil furnace room
- Poor front apron
- May not be capable to house aerial fire apparatus if needed for future.

The benefits of this building and lot, (which are mostly all non functional features), include:

- Central location
- Potential property value
- Owned by SSIFPD
- Heritage / ambiance value

From a functional perspective, SSIFPD is in need of a fire station in the Ganges region but relocated from its present location. It is important that a new site have much better access and egress features and be constructed and sized to have all the modern features of an administrative / public access point / primary operations fire station. Its training facilities can be limited due to the simultaneous need for a full scale training facility on the island.

The replacement of the Ganges station should be considered in conjunction with the fire protection needs of Channel Ridge development. The Channel Ridge development will also be in need of improved fire protection response.

If there is a strong desire to maintain the existing Ganges fire station, the building could be torn down and reconstruction. Alternatively, parts of the building shell could be kept, with the interior gutted and rebuilt to improve its functionality.

Recommendation 10.14.A:

The Ganges fire station should be replaced from a functional fire service delivery perspective. The replacement fire station should remain within the vicinity of Ganges. Access and egress considerations are a priority.

10.15 Pre – Incident Planning

SSI FR has a very good pre-fire planning program. The program is maintained by career staff members. As part of the program, SSIFR indicated that three to four fire fighter familiarization inspections of SSI high risk occupancies occur annually. In addition, new home construction is inspected by the SSI fire prevention division with a focus on pre incident planning and risk reduction education for the home dweller. Scenario based training for high risk / hazard occupancies also occur.

Pre-fire plans are very well constructed. At the time of the Survey approx. 80% of SSI buildings requiring a plan have been created.

Recommendation 10.15.A:

The pre-incident planning program's continued support and development is encouraged.

10.16 Fire Service Administration

Since the arrival of the current fire chief SSIFR is considered to be well managed, administered and is regularly planning for the fire / rescue needs of the community. Periodic and year end reports, budget projections and strategic plans are regularly developed. A master plan of fire protection service level needs has not yet occurred. In concert with the master planning needs, at

the time of the Survey there was little evidence of service performance evaluation and goal setting by the SSIFR.

SSIFR appears satisfactorily supported by its Board members. Alternatively, at the time of the Survey, there was indication that residents of SSI had issues with the both the Board and with the fire rescue department – including the level of service that SSIFPD is providing.

SSIFR should provide the level of service the community desires and will support. Therefore the fire department should strive towards determining the fire and rescue expectations of the community (master planning component); as well as determining the organizational and structural changes and cost needed to meet the expectations.

The Survey found that SSIFR has a very good mix of prevention priorities versus suppression priorities.

SSIFR reaches out to the public through its public education programs and fire smart programs. SSFR also interacts with the public at the Ganges fire station through its public access counter. Alternatively, other portions of the community may not have the ability to access SSIFR as well as Ganges residents are able to due to the outlying halls not being configured or operated as public access points.

The SSIFR fire chief delegates responsibility and collaborates on management decisions with his chief officers. Managers meetings occur regularly. The SSIFR management team appears to work together very effectively.

All chief officers are enrolled in recognized fire officer courses. The Fire Chief should consider additional educational upgrading / professional designation.

The selection board criteria for chief officers were not evaluated.

10.17 Fire Prevention

SSIFPD's fire safety programs rated very well against the FUS Grading Index improving two classes to PFPC 4. The strengths of the program include:

- The fire inspection cycle of a minimum of once per year. (Schools inspected six times per year; all other occupancies once per year).

- Maintaining the fire inspection cycle annually
- Target hazard programming such as diligence to inspecting schools, hospital, marinas and single family residential
- Fire scene preservation / fire cause investigation qualifications
- Fire extinguisher training / infant cpr
- Improvements to inspectors qualifications
- Public education programs

SSIFR should continue to work towards improvement in the following areas:

- Increasing the number of annual inspections for high life hazard buildings and public service buildings to a minimum of two per year.

- Integrating SSIFR into the building permitting process.

- Expanding the public education program
    - Setting targets
    - Setting Performance evaluation criteria

- Improving inspectors qualifications

Recommendation 10.17.A:
Increase inspection frequency for all occupancies to a minimum of two per year.

10.18 Emergency Communications

SSI FRD emergency communication programs have also improved considerably with the implementation of the Crest Radio System. The FUS PFPC has improved to a Class 4.

There are acknowledged difficulties with the Crest system; however these concerns should be resolved as the system evolves. The grading has recognized the standardization and service level improvements that have occurred since Crest's s implementation.

Recommendation 10.18.A:
Incident radio communications should be recorded and archived by the SSIFR.

Recommendation 10.18.B:

SSIFR should consider manning their base radio during emergency incidents. Use of a retired fire fighter or other trained community member has been found to be effective in other jurisdictions.

11.0 Channel Ridge Development Comments

Due to the size and scope of the Channel Ridge development, its fire protection requirements need to be planned, fully developed and prepared for by the SSFPD. Channel Ridge will be built in two phases, the timeline of which was not determined. The development proposes:

- 1200 person occupancy at build-out
- 405 homes (single and multiple family developments)
- 80,000 sq. ft. of commercial
- Building area of between 53 and 90 acres
- Three storey buildings are being planned, some of which will be a combination of commercial and residential occupancies

The village centre will be five to six km, from fire station 3 and 8± km from fire station 1. The development will be completely hydrant protected. Sprinklering is not contemplated for building structures at this time.

The distance to the development from the closest fire station is a concern. Response times will be greater than recommended standards for commercial buildings. In addition, insurance rates for commercial properties and occupancies will be penalized because of the distance. To improve response times to Channel Ridge it is proposed to relocate fire station three near to or at the development. However in doing so creates some difficulties. Currently fire station three is located at a strategically located intersection that provides access to the east and west side of the north end of SSI and to Vesuvius Bay. Relocating station 3 to the Channel Ridge development (CR) will improve response times to the north west side of the Island but will worsen response to the north east side of the Island.

This report also suggests relocating fire station one because of the limited functionality of the existing site. If the site is relocated too far north from its current position in order better protect portions of northern SSI, portions of south SSI will receive a lesser level of protection due to increased response times.

Therefore:

- Fire station one needs to stay in the general vicinity of its current location.
- Fire station 2 should be relocated to CR.
- An access road should also be provided from CR to the north west such as at Pringle or West Eagle.
- Channel Ridge and Broadwell Road should be upgraded as an emergency vehicle arterial route
- A roadway extension should be constructed from CR eastward to North End Road.

The benefits of this approach are:

- Channel Ridge is better protected
- Vesuvius Bay protection remains similar as it currently exists
- Unprotected areas in northern SSI will become protected
- Current unprotected areas do not shift to other portions of the north end of the Island

In addition to fire hall relocation, SSIFPD should consider the following:

- If the profile of Channel Ridge dictates the needs of an aerial apparatus, the truck should be located at the Ganges hall where it will be utilized more frequently.
- Commercial occupancies at CR should be sprinklered
- The proposed fire station in CR should be complete with administration offices, public access point and equipped to potentially house prevention staff.

We would like to thank the Slat Spring Island Fire Protection District as well as the members of the Salt Spring Island Fire Rescue for their valuable and courteous assistance in conducting this survey and preparation of the survey report.

The Survey found that fire protection has improved relative to the life safety and fire risk present within SSIFPD since the former Survey. This has occurred despite our assessment that fire risk and fire hazards have increased in SSIFPD as the community continues to grow. We were

impressed with the community's focus on fire protection through its fire rescue department even through this report suggests some areas where improvements could continue to occur.

Please note that this report is Private and Confidential. The underlying data of this report has been developed for fire insurance grading and classification purposes. This report may also be used to assist in planning the future direction of SSI Fire Rescue fire protection services.

Please contact the undersigned if there are any questions or comments regarding the intent, content and recommendations made throughout this report.

Sincerely,

Robert J. Nelson, CRM
Fire Protection Specialist
Fire Underwriters Surveyor