



2020 Corporate Strategic Asset Management Plan

Appendix E Condition Assessment Framework Part 3 - Public Safety

Appendix A

A – 12
Sahtlam Fire Hall

Sahtlam Firehall



Cowichan Valley Regional District

MH Project No. 5170700.00

November 2017



Cowichan Valley
Regional District
175 Ingram Street
Duncan, BC V9L 1N8



MORRISON HERSHFIELD

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7**

PROPERTY DESCRIPTION

Sahtlam Fire Hall was initially constructed in 1971. An addition was constructed between 1982 and 1988.

Refer to Photo 01 for an overview of the building.

PROPERTY STATISTICS

Gross Floor Area: 7,002 sf.

Replacement Value: \$2,387,682

Target FCI: 0.050

Current FCI: 0.044

REPORT OVERVIEW

We identified Priority 1 - Immediate expenditures totalling \$48,000 as follows:

- Row 58 - P100001 Seismic Review - Detailed Seismic Evaluation - \$48,000

The following provides an overview of the visual seismic, building code, accessibility and energy efficiency reviews completed.

Seismic Review

Seismic work completed to date: Yes
Recommendations: Perform a detailed seismic evaluation to determine the suitability of the structure to function as a post-disaster

Building Code Review

Built under what code: NBC 1970, and NBC 1980 for the addition
Deficiencies observed: It is recommended the interior fire separations between the apparatus bays and the adjacent spaces be reviewed. A minimum 1.5 hour separation is recommended to meet current code requirements.

Accessibility Review

Access into building: Pedestrian access only
Access throughout building: Stairs
Access to washrooms: None
Recommendations: The building does not meet the requirements of an accessible building per the British Columbia Building Code. Major spatial reconfigurations are needed to create a conforming facility.

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7**

We identified recommendations of approximately \$253,000 over the next five years. The following is a summary of the major projects (over \$10,000) we believe will be required the next ten years, and elements whose condition is unknown and/or where further investigation is recommended:

- Row 11 - B2010 Exterior Walls - Vinyl Siding - Addition Building - \$111,000
- Row 45 - D502002 Lighting Equipment - Indoor Low-Voltage Fixtures - \$19,000
- Row 49 - D503001 Fire Alarm Systems - Apparatus Bay - \$14,000
- Row 56 - G301005 Fire Protection Water Storage - Wood Cistern - \$16,000
- Row 58 - P100001 Seismic Review - Detailed Seismic Evaluation - \$48,000

PROJECT TEAM

The visual reviews were completed on May 31, 2017. We began with an interview with Mike Lees of Sahtlam Fire Hall. During our review of the building, we were accompanied by Mr. Mike Lees, who provided access to a sampling of representative areas of the facility, as requested.

Chris Raudoy, of Morrison Hershfield reviewed the report for technical content and for compliance with the contract requirements.

REFERENCE DOCUMENTS/INFORMATION

We reviewed the following documents and selected drawings for general background and to inform ourselves about the layout and intended construction:

- Custom Valuation Report by RMS, dated June 25, 2013

This report should be reviewed in conjunction with the Objectives, Terms of Reference, Limitations, and Methodology described in the main body of the report.

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7**

We recommend budgeting for the following 1 – Immediate, 2 - Restore Functionality, 2b - Exceeded Service Life and 3 - Future Renewal projects by year as follows:

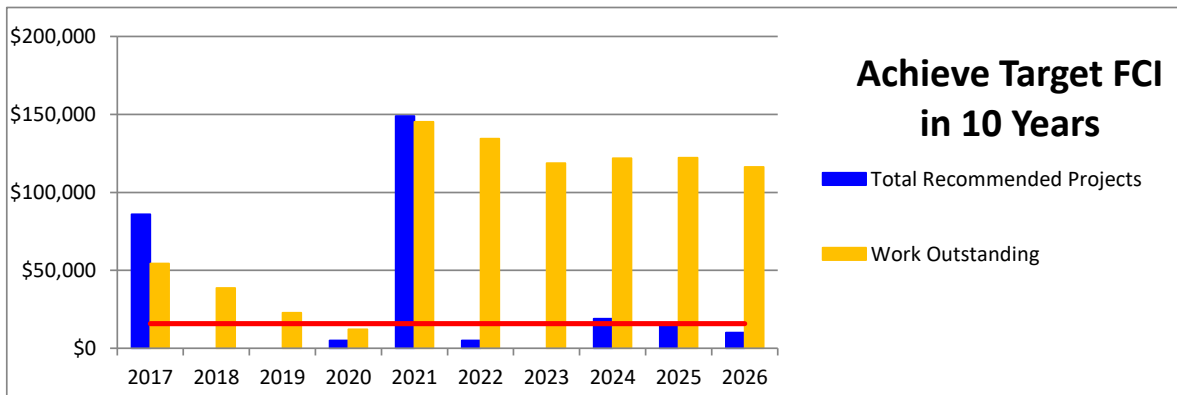
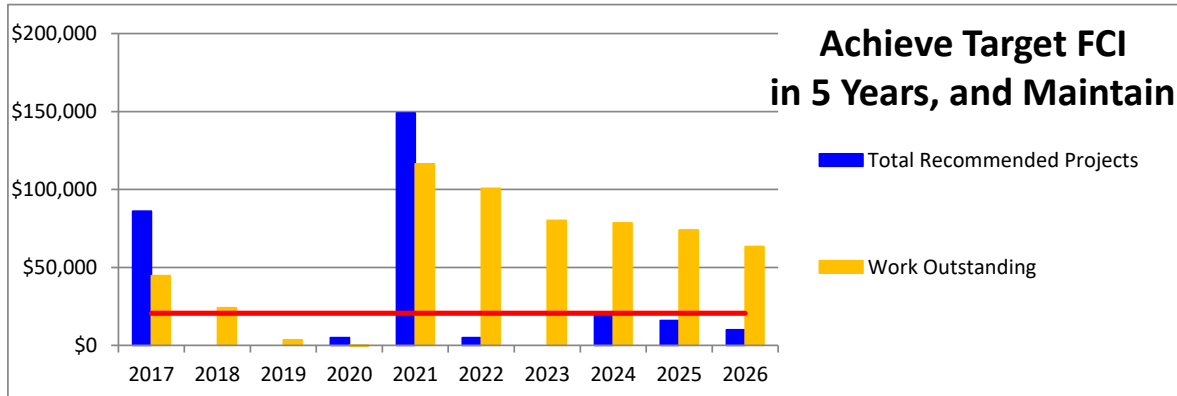
Priority	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1 – Immediate	48,000	0	0	0	0	0	0	0	0	0
2 - Restore Functionality	19,000	0	0	0	0	0	0	0	0	0
2b - Exceeded Service Life	14,000	0	0	0	19,000	0	0	0	0	0
3 - Future Renewal	5,000	0	0	5,000	130,000	5,000	0	19,000	16,000	10,000
Total in 2017 dollars	86,000	0	0	5,000	149,000	5,000	0	19,000	16,000	10,000

Minimum Funding to Achieve and Maintain Target FCI within 5 years: \$20,603

Work outstanding	44,795	24,192	3,589	-12,013	116,384	100,781	80,179	78,576	73,974	63,371
------------------	--------	--------	-------	---------	---------	---------	--------	--------	--------	--------

Minimum Funding to Achieve Target FCI within 10 years: \$15,783

Work outstanding	54,433	38,650	22,867	12,084	145,300	134,517	118,734	121,951	122,167	116,384
------------------	--------	--------	--------	--------	---------	---------	---------	---------	---------	---------



Start Yr: 2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	Bldg Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION			Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	OPINION OF PROBABLE COST								
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	E.E. Time Remaining to EOL or Major Action	Recommendation	Type					Priority	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Conting.	Contingency	5% Tax	Total in 2017 Dollars
1	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	A Substructure	A10 Foundations	A1010 Standard Foundation	A101001 Wall Foundations	Underground/Foundation	x	The foundation is assumed to be comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review.	4	5	1971	31-May-17	MH	46	75	29	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
2	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103001 Standard Slab on Grade	Interior At-Grade/ Slab-on-Grade	2	The floor is concrete slab-on-grade. A portion of the original building contains a mud seal on grade. No evidence of major settlement or heaving was reported or observed. Minor cracking was noted in the apparatus bay.	4	5	1971	31-May-17	MH	46	75	29	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. Monitor cracks for growth and if cracking increases in magnitude or widen, seek structural engineering services. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
3	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Foundation Walls	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	4	4	1971	31-May-17	MH	46	5	2	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	No	N/A	No	N/A	1	\$2,000	LS	\$2,000	0%	0%	5%	\$3,000
4	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Foundation Walls	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	4	4	1971	31-May-17	MH	46	75	29	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Not Applicable	Not Applicable	N/A	N/A	No	No								
5	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B10 Superstructure	B10 Superstructure	B10 Superstructure	General	3/4	The superstructure is comprised of wood framing on the main floor and roof, supported on concrete masonry unit walls. No settlement, cracking, or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	4	5	1971	31-May-17	MH	46	75	29	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
6	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B10 Superstructure	B1010 Floor Construction	B101004 Balcony Construction - Wood	Egress Stairs	5	Wood framed egress stairs are located on the rear elevation. The stairs require re-staining to protect the lumber. The age of the stairs has been approximated.	3	4	2000	31-May-17	MH	17	25	8	Replace stairs at end of service life. Stain as part of maintenance as the coating flakes / wears.	Repair Allowance	3 - Future Renewal	No	Yes	Partial	No	1	\$3,000	EA	\$3,000	0%	0%	5%	\$4,000
7	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B10 Superstructure	B1010 Floor Construction	B101004 Balcony Construction	Membrane	6-8	The landing of the front entrance stairs and the lounge deck are waterproofed with vinyl membrane. Otherwise in good condition, the upturns of the membrane on the front entrance canopy posts are not terminated adequately. The age of the membranes have been approximated.	4	5	2015	31-May-17	MH	2	15	13	Replace the membranes at the end of service life. Provide overcladding (moisture barrier and trim) on the front entrance canopy posts to conceal the upturns on the landing membrane. The risk of water ingress is low as the landing is open for monitoring from the underside, therefore, overcladding is optional. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
8	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201007 Balcony Walls and Railings	Railings	9/10	The balcony and front entrance stairs guardrails are prefinished aluminum picket-type assemblies. The age of the railings have been approximated.	4	5	2015	31-May-17	MH	2	30	28	Replace guards rails at end of service life. Check anchorage to the substrate for structural adequacy and where surface-mounted, the integrity of the water seal to the vinyl deck membrane. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
9	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B2010 Exterior Walls	Seismic Bracing	11-14	The existing seismic bracing is comprised on wood built-up beams with steel posts on concrete footings (front elevation) and wood built-up beams with wood posts on concrete footings (rear elevation). The rear elevation posts are significantly decayed.	2	3	1982	31-May-17	MH	35	75	1	Upgrade the seismic bracing as per the recommended full seismic review (see Professional Services below). The cost will be included in a future iteration of this report.	Replacement	1 - Immediate	No	Yes	Yes	Yes								
10	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B2010 Exterior Walls - Stucco	Original Building	15-17	Stone dash and textured face-sealed stucco has been installed at the cladding on the original building exterior walls. Some unsealed transitions were noted between stucco and vinyl siding.	4	5	1971	31-May-17	MH	46	60	14	Replace face-seal stucco system with rain screen stucco system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
11	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B2010 Exterior Walls - Vinyl Siding	Addition Building	18	Vinyl siding in present on the exterior walls of the addition. Voids have been left in the siding where the satellite dish once was anchored to the wall.	3	5	1982	31-May-17	MH	35	40	5	Replace vinyl siding at end of service life. A Building Envelope Condition Assessment could be performed prior to replacement to understand the condition of the exterior walls and any potential wood frame damage concealed behind the siding (see Professional Services, below)	Replacement	3 - Future Renewal	Yes	Yes	No	No	2772	\$30	SF	\$83,160	10%	15%	5%	\$111,000
12	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201008 Exterior Soffits	Addition Building	19	Prefinished, continuously perforated metal soffit is installed on roof eaves of canopy and under the front entrance canopy.	4	5	1982	31-May-17	MH	35	40	5	Replace soffit at end of service life, in conjunction with the vinyl siding replacement.	Replacement	3 - Future Renewal	Yes	No	No	No	306	\$15	SF	\$4,590	10%	15%	5%	\$7,000
13	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201010 Exterior Coatings	Concrete Paint	20	The concrete masonry unit (CMU) exterior walls are coated with paint. The age of the paint has been approximated.	4	5	2010	31-May-17	MH	7	15	8	Re-paint the exterior of the CMU once the paint finish peels or wears. Seal the penetrations as part of the maintenance budget. The cost to replace the paint the CMU walls is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								

Start Yr: 2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BDC Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION			Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	OPINION OF PROBABLE COST								
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	E.E. Time Remaining to EOL or Major Action	Recommendation	Type					Priority	Quantity	Unit Rate	Unit	Subtotal Before Replacement Cost	Contest.	Contingency	5% Tax	Total in 2017 Dollars
14	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2020 Windows	B202001 Windows	Original Windows	21	The original windows are single glazed aluminum framed units with sliding sashes.	3	3	1971	31-May-17	MH	46	35	5	Replace the original aluminum framed windows with new thermally-broken, insulated glass units (IGUs) with Low E coatings and argon fill. The windows are generally well-protected from the elements and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	Yes	Yes	No	No	5	\$1,000	EA	\$5,000	10%	15%	5%	\$7,000
15	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2020 Windows	B202001 Windows	Addition Windows	22	The addition windows are aluminum framed with double paned insulated glazing units (IGUs) with slider sashes.	3	5	1985	31-May-17	MH	32	35	10	Replace the original aluminum framed windows with new thermally-broken, insulated glass units (IGUs) with Low E coatings and argon fill. The windows are generally well-protected from the elements and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	Yes	Yes	No	No	7	\$1,000	EA	\$7,000	10%	15%	5%	\$10,000
16	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203001 Exterior Metal Doors	Egress Doors	23/24	Single and double outwing steel doors are present at points of building egress on the main and lower floors. The doors have been replaced relatively recently and age of the doors has been approximated.	4	5	2010	31-May-17	MH	7	30	18	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	Yes								
17	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203001 Exterior Wood Doors	Front Entrance Doors	25	Double outwing wood doors are present at the front entrance to the building.	3	5	1971	31-May-17	MH	46	30	5	Replace doors at end of service life. The cost to replace the front entrance doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	Yes								
18	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203002 Glazed Doors	Sliding Patio Door	26	An aluminum sliding glass door with double paned IGU gives access to the lounge's exterior deck.	4	5	1985	31-May-17	MH	32	35	10	Replace sliding glass doors at the end of service life. The cost to replace the sliding glass door is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
19	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203004 Overhead Garage Doors	Storage Garage Door	27	A single steel overhead door (manually operated) provides access through the garage below the lounge's exterior deck.	4	5	1985	31-May-17	MH	32	35	3	Replace overhead garage door on the storage garage at end of service life. The cost to replace the overhead door is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
20	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203004 Overhead Garage Doors	Apparatus Bay Doors	28/29	Four vinyl-coated steel overhead doors with single glazing for natural lighting. Two of the doors have been provided with automatic openers. The age of the doors and openers has been approximated.	4	5	2015	31-May-17	MH	2	25	23	Replace apparatus bay doors and automatic openers at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	No								
21	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301002 Slope Roof	Metal Panels - Original	30	The sloped roofs are clad with prefinished, corrugated metal roofing panels.	4	5	1990	31-May-17	MH	27	50	23	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
22	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301002 Slope Roof	Metal Panels - Addition	x	The sloped roofs are clad with prefinished, corrugated metal roofing panels.	4	5	1998	31-May-17	MH	19	50	31	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
23	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301002 Slope Roof	Roofing Screws and Sealants	x	The metal panels are fastened to the roof deck with prefinished steel screws with neoprene-type washers. Plumbing stacks and other penetrations are sealed to the roofing panels. It is our understanding that the roofing panel screws were replaced in 2015 on the original section; however, the roofing screws on the addition roof appear to be original.	2	2	1998	31-May-17	MH	19	20	1	Replace roofing screws with integrated washers on the addition roof. Replace sealants at roof penetrations in conjunction with fastener work.	Replacement	2 - Restore Functionality	No	Yes	No	No	1	\$2,000	EA	\$2,000	0%	0%	5%	\$3,000
24	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301005 Gutters and Downspouts	Some Roof Eaves	31	Prefinished metal eaves troughs and downspouts are present at most eaves of the pitched roofs. The age of the eaves troughs and downspouts has been approximated. Some sections of roof were not outfitted with eaves troughs.	3	5	1998	31-May-17	MH	19	30	1	Replace eaves troughs and downspouts at the end of service life. Install eaves troughs where not present to reduce the level of ponding water adjacent to the building / foundation. The cost to install new segments of eaves trough is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	2 - Restore Functionality	Yes	Yes	No	No								
25	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Throughout Building	32/33	Original wood doors are present throughout the building at offices, service rooms and bathrooms.	4	5	1971	31-May-17	MH	46	75	29	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.			Yes	Yes	No	No								
26	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103002 Toilet and Bath Accessories, Rehab	Upper and Main Floors	34-35	Four washrooms are present in the building. The standard equipment includes toilets, a urinal, sinks in residential-type vanities and stall dividers in the community hall washroom. Some plumbing fixtures have been updated since original construction.	3	5	1971	31-May-17	MH	46	20	1	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their respective ages, the allowance included in the capital plan corresponds to the Fire Hall's discretionary / planned 2017 renovations of the community hall female washroom.	Replacement	3 - Future Renewal	Yes	Yes	No	No	1	\$4,000	LS	\$4,000	0%	0%	5%	\$5,000
27	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301003 Gypsum Board Wall Finishes	Paint	37	The majority of the interior walls are finished with painted gypsum board (excluding the community hall). The age of the paint has been approximated.	3	5	2010	31-May-17	MH	7	5	5	Repaint interior common walls as needed. An allowance for periodic painting has been included in the capital plan.	Contingency	4a - Discretionary Renewal	Yes	Yes	No	No	1	\$4,000	LS	\$4,000	0%	0%	5%	\$5,000
28	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301005 Gypsum Board Wall Finishes	Wall Paper	38	The walls within the community hall are finished with wallpaper. The age of the wall paper has been approximated.	4	5	1985	31-May-17	MH	32	40	8	Replace wall paper at end of service life.	Replacement	4b - Discretionary Aesthetic	No	Yes	No	No	1440	\$5	SF	\$7,200	0%	0%	5%	\$8,000

Start Yr: 2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	Bldg Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION			Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	OPINION OF PROBABLE COST									
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	E.E. Time Remaining to EOL or Major Action	Recommendation	Type					Priority	Quantity	Unit Rate	Unit	Subtotal Base or Replacement Cost	Conting.	Contingency	5% Tax	Total in 2017 Dollars	
29	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C30204 Resilient Floor Finishes	Original Flooring	39	Vinyl composite tile is present in the washrooms and the lounge.	3	5	1985	31-May-17	MH	32	40	8	Overlay vinyl composite tile (reportedly containing asbestos) with new vinyl plank flooring.	Replacement	3 - Future Renewal	No	Yes	No	No	1000	\$11	SF	\$11,000	0%	0%	5%	\$12,000	
30	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C30204 Resilient Floor Finishes	Community Hall	40	Vinyl plank flooring overlays the existing vinyl composite tile.	4	5	2012	31-May-17	MH	5	40	35	Replace vinyl plank flooring at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No									
31	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C30205 Carpeting	Stairs, Hallways and Office	41	Berber carpet installed on the stairs, lower floor corridor and upper floor corridors. The age of the carpet has been approximated.	3	4	2000	31-May-17	MH	17	20	5	Replace stairs and corridor carpeting.	Replacement	3 - Future Renewal	Yes	Yes	No	No	400	\$10	SF	\$4,000	0%	0%	5%	\$5,000	
32	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103008 Counters and C103009 Cabinets	Millwork and Cabinetry	42-49	A commercial style kitchen is present on the main floor. Equipment provided includes laminate counter tops and wood veneer cabinets, a stainless steel sink, commercial cooler, a dishwasher, an electric range/oven and a commercial oven with ventilation and automatic fire suppression. The kitchen has been upgraded as equipment or wears out. A bar is present in the lounge on the upper floor. The bar contains a commercial refrigerator, residential refrigerator and a sink with original counter tops. The age of the equipment has been taken as the most recently upgraded item.	4	5	2015	31-May-17	MH	2	25	28	Renovate the kitchen and bar millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
33	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304001 Air Distribution, Heating and Cooling	Heat Pumps	50-52	Three 24k BTU Mitsubishi heat pumps with dedicated digital thermostats condition the interior spaces (community hall and lounge). The age of the heat pumps has been approximated.	4	5	2010	31-May-17	MH	7	25	18	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
34	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305002 Unit Heaters	Electric Forced Air	53/54	Electric fan heaters provide heating in the crawspace, apparatus bay and some interior spaces (where the heat pumps do not service). The age of the heaters varies and has been approximated.	3	5	2010	31-May-17	MH	7	35	28	Replace heaters as unit failure occurs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
35	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D304007 Exhaust Systems	Washrooms	55	Fractional horsepower exhaust fans used to exhaust air in washrooms. The fan in the female washroom on the main floor is non-functioning.	3	5	2000	31-May-17	MH	17	25	8	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
36	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D304007 Ventilation Systems	Kitchen Exhaust	56	A roof-mounted exhaust fan is present to provide mechanical ventilation from the commercial kitchen. The age of the fan is estimated to be the same age as the oven and fire suppression system.	3	5	2001	31-May-17	MH	16	25	9	Replace kitchen exhaust fan at end of service life.	Replacement	3 - Future Renewal	No	No	No	Yes	1	\$2,000	EA	\$2,000	0%	0%	5%	\$3,000	
37	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D304007 Exhaust Systems - Apparatus Bay	Apparatus Bay	57	The truck exhaust pipes connect to ducting that is exhausted from the building by a furnace fan, which is understood to have been installed in approximately 1990 and approved for use by WorkSafe BC.	3	5	1990	31-May-17	MH	27	30	3	Replace or overhaul the exhaust fan at end of service life. The cost to replace the exhaust fan is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	Yes									
38	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment	Pump	58	The building's water supply originates from a well. The water is pumped into the building, treated and stored for domestic use.	3	5	2006	31-May-17	MH	11	20	9	Replace the pump at end of service life. The cost to replace the water pump is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	Yes	No									
39	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D20 Plumbing	D2030 Sanitary Waste	D2030 Sanitary Waste	Piping	59/60	Sanitary and storm water collection piping was largely cast iron or ABS, where visible. The average year of installation was taken to be 1977.	3	5	1977	31-May-17	MH	40	60	20	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
40	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment	Treatment	61-63	The well water is treated with UV light, water softening and stored in a pressurized well-water tank.	3	5	2006	31-May-17	MH	11	20	9	Install new water treatment and storage equipment at the end of service life. A larger capacity and brand new storage tank is located in the crawspace and is ready for installation as the new well is activated (estimated 2017-2018).	Replacement	3 - Future Renewal	Yes	No	No	No	1	\$3,000	EA	\$3,000	0%	0%	5%	\$4,000	
41	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202001 Pipes and Fittings	Throughout Building	63/65	Piping is a mix of copper (original) and PEX (upgrades or during equipment replacement).	3	5	1971	31-May-17	MH	46	50	4	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs.	Contingency	3 - Future Renewal	Yes	Yes	No	No	1	\$4,000	LS	\$4,000	0%	0%	5%	\$5,000	
42	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment - Tanks	Grawl Space	66	A 284 L, 4500 W John Wood domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	3	4	2008	31-May-17	MH	9	10	1	Replace domestic hot water heating tank prior to end of expected service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No									
43	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5010 Electrical Services and Distribution	D501003 Main & Secondary Switchgear	Main Circuit Breaker	67-69	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 200A circuit breaker panel and various sub-panels.	3	5	1971	31-May-17	MH	46	60	14	Replace circuit breaker panels at end of service life. Perform infrared thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	Yes									
44	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Branch Wiring & Devices	Wiring	70/71	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets. The year of installation varies; therefore, an average year of 1977 has been used. A exterior outlet was noted to be lacking a weatherproof cover and may not be GFCI protected.	4	5	1977	31-May-17	MH	40	60	20	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	Yes									

Start Yr: 2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BDC Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION			Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in the system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	OPINION OF PROBABLE COST								
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	E.E. Time Remaining to EOL or Major Action	Recommendation	Type					Priority	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Conting.	Contingency	5% Tax	Total in 2017 Dollars
45	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Indoor Low-Voltage Fixtures	72	The lighting within the building is a combination of low-voltage fixtures and fluorescent tube lighting. The age of the lighting fixtures ranges between 30 to 40 years.	4	5	1982	31-May-17	MH	35	25	5	Replace fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures.	Replacement	2b - Exceeded Service Life	Yes	No	No	Yes	75	\$200	EA	\$15,000	0%	15%	5%	\$19,000
46	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Outdoor Fixtures	73/74	The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the fixtures has been approximated.	4	5	2010	31-May-17	MH	7	25	18	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
47	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5030 Communication and Security	D503008 LAN, TV, Telephone	Infrastructure Cabling	75	The facility is served by LAN, telephone, and TV cabling with boxes above the apparatus bay and within the crawl space. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	4	5	2005	31-May-17	MH	12	25	18	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	Partial	No								
48	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5030 Communication and Security	D503008 Security Systems	Building Alarm	76	A DSC PE 1500 security system is present to detect break and enter incidents. The age of the equipment has been approximated.	4	5	2000	31-May-17	MH	17	25	8	Replace security system at end of service life.	Replacement	3 - Future Renewal	No	No	No	Yes	1	\$2,000	EA	\$2,000	0%	0%	5%	\$3,000
49	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5030 Communication and Security	D503001 Fire Alarm Systems	Apparatus Bay	77/78	The building is equipped with an ESC 4750 alarm panel, connected to the heat detectors in the building. The panel functions; however, is obsolete. The age of panel has been approximated.	3	3	1982	31-May-17	MH	35	35	1	Replace the fire alarm panel at the end of its lifespan, including an allowance to replace some wiring and devices. The Fire Hall may be exempt due to the status of its occupancy as a fire hall.	Replacement	2b - Exceeded Service Life	No	No	No	Yes	1	\$10,000	LS	\$10,000	10%	15%	5%	\$14,000
50	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D40 Fire Protection	D4030 Fire Protection Specialty	D403001 Fire Extinguishing Devices	Kitchen Sprinklers	79/80	The kitchen contains an automatic fire suppression system over the oven.	4	5	2001	31-May-17	MH	16	30	14	Replace or upgrade system at the end of reliable service life. Inspect the extinguishing device annually and replace as directed by AHI. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
51	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Emergency Generator	81	A 20KW Briggs and Stratton emergency generator is located on a concrete pad outside of the building footprint. The generator is tested internally on a regular basis.	4	5	2004	31-May-17	MH	13	30	17	Replace the emergency generator at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
52	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Transfer Switch	82	There is one automatic transfer switch in the crawlspace connected to the emergency generator.	4	5	2004	31-May-17	MH	13	30	17	Replace the automatic transfer switch at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	No								
53	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	G Building Sitework	G30 Site Civil and Mechanical Utilities	G3060 Fuel Distribution	G306004 Liquid Fuel Storage Tanks	Propane Tank	83	The emergency generator is fueled by propane, which is stored in a pressurized cylinder.	4	5	2004	31-May-17	MH	13	30	17	Replace propane storage tank at the end of service life. Re-paint the cylinder to refresh appearance and to mitigate wear from corrosion. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	Yes								
54	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Emergency Lighting	84	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	4	5	2004	31-May-17	MH	13	30	17	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
55	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Exit Signs	Egress Routes	x	Exit signs direct occupants toward egress routes throughout the building. Age of equipment has been approximated.	4	5	2004	31-May-17	MH	13	30	17	Replace exit lights at end of service life, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
56	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	G Building Sitework	G30 Site Civil and Mechanical Utilities	G3010 Water Supply	G301005 Fire Protection Water Storage	Wood Cistern	84	Water to supply fire trucks is stored in an elevated wood cistern. The cistern is leaking.	2	3	1947	31-May-17	MH	70	70	1	Replace cistern with composite tank. Elevated structure's adequacy to be determined in the recommended seismic review, below (Professional Services).	Replacement	2 - Restore Functionality	No	Yes	No	No	1	\$15,000	EA	\$15,000	0%	0%	5%	\$16,000
57	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	P Professional Services	P100001 Building Envelope Condition Assessment	P100001 Building Envelope Condition Assessment	P100001 Building Envelope Condition Assessment	Further Study	85	Building Envelope Condition Assessment (BECA) is a comprehensive study to evaluate the performance and condition of the roofing, wall, window / door assemblies of a building. A BECA is a prudent stage in a building envelope rehabilitation or renewals program to assist with determining scope and magnitude of the project, prior to design and tendering.		3	1982	31-May-17	MH	35	99	4	Conduct a BECA to review the conditions of the various building envelope components.	Study	4a - Discretionary Renewal	No	No	No	No	1	\$4,000	LS	\$4,000	0%	0%	5%	\$5,000
58	Sahtlam Fire Hall	4384 Cowichan Lake Road, Duncan, BC	P Professional Services	P100001 Seismic Review	P100001 Seismic Review	P100001 Detailed Seismic Evaluation	Further Study	x	For conducting a detailed seismic evaluation of the building.		3	1982	31-May-17	MH	35	10	0	Conduct detailed seismic evaluation as recommended in the preliminary seismic screening. This effort would be ranked as a high priority per the screening report.	Study	1 - Immediate	No	No	Yes	Yes	1	\$45,000	LS	\$45,000	0%	0%	5%	\$48,000

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type		Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
1	Sahtlam Fire Hall	A101001 Wall Foundations	Underground/ Foundation	The foundation is assumed to be comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review.	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
2	Sahtlam Fire Hall	A103001 Standard Slab on Grade	Interior At-Grade/ Slab-on-Grade	The floor is concrete slab-on-grade. A portion of the original building contains a mud seal on grade. No evidence of major settlement or heaving was reported or observed. Minor cracking was noted in the apparatus bay.	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. Monitor cracks for growth and if cracking increases in magnitude or widen, seek structural engineering services. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
3	Sahtlam Fire Hall	A103006 Foundation Drainage	Foundation Walls	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	\$3,000		\$3,000								
4	Sahtlam Fire Hall	A103006 Foundation Drainage	Foundation Walls	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Not Applicable	Not Applicable											
5	Sahtlam Fire Hall	B10 Superstructure	General	The superstructure is comprised of wood framing on the main floor and roof, supported on concrete masonry unit walls. No settlement, cracking, or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable											
6	Sahtlam Fire Hall	B101004 Balcony Construction - Wood	Egress Stairs	Wood framed egress stairs are located on the rear elevation. The stairs require re-staining to protect the lumber. The age of the stairs has been approximated.	Replace stairs at end of service life. Stain as part of maintenance as the coating flakes / wears.	Repair Allowance	3 - Future Renewal	\$4,000								\$4,000		
7	Sahtlam Fire Hall	B101004 Balcony Construction	Membrane	The landing of the front entrance stairs and the lounge deck are waterproofed with vinyl membrane. Otherwise in good condition, the upturns of the membrane on the front entrance canopy posts are not terminated adequately. The age of the membranes have been approximated.	Replace the membranes at the end of service life. Provide overcladding (moisture barrier and trim) on the front entrance canopy posts to conceal the upturns on the landing membrane. The risk of water ingress is low as the landing is open for monitoring from the underside, therefore, overcladding is optional. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
8	Sahtlam Fire Hall	B201007 Balcony Walls and Railings	Railings	The balcony and front entrance stairs guardrails are prefinished aluminum picket-type assemblies. The age of the railings have been approximated.	Replace guards rails at end of service life. Check anchorage to the substrate for structural adequacy and where surface-mounted, the integrity of the water seal to the vinyl deck membrane. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
9	Sahtlam Fire Hall	B2010 Exterior Walls	Seismic Bracing	The existing seismic bracing is comprised on wood built-up beams with steel posts on concrete footings (front elevation) and wood built-up beams with wood posts on concrete footings (rear elevation). The rear elevation posts are significantly decayed.	Upgrade the seismic bracing as per the recommended full seismic review (see Professional Services below). The cost will be included in a future iteration of this report.	Replacement	1 - Immediate											
10	Sahtlam Fire Hall	B2010 Exterior Walls - Stucco	Original Building	Stone dash and textured face-sealed stucco has been installed at the cladding on the original building exterior walls. Some unsealed transitions were noted between stucco and vinyl siding.	Replace face-seal stucco system with rain screen stucco system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
11	Sahtlam Fire Hall	B2010 Exterior Walls - Vinyl Siding	Addition Building	Vinyl siding in present on the exterior walls of the addition. Voids have been left in the siding where the satellite dish once was anchored to the wall.	Replace vinyl siding at end of service life. A Building Envelope Condition Assessment could be performed prior to replacement to understand the condition of the exterior walls and any potential wood frame damage concealed behind the siding (see Professional Services, below)	Replacement	3 - Future Renewal	\$111,000				\$111,000						
12	Sahtlam Fire Hall	B201008 Exterior Soffits	Addition Building	Prefinished, continuously perforated metal soffit is installed on roof eaves of canopy and under the front entrance canopy.	Replace soffit at end of service life, in conjunction with the vinyl siding replacement.	Replacement	3 - Future Renewal	\$7,000				\$7,000						
13	Sahtlam Fire Hall	B201010 Exterior Coatings	Concrete Paint	The concrete masonry unit (CMU) exterior walls are coated with paint. The age of the paint has been approximated.	Re-paint the exterior of the CMU once the paint finish peels or wears. Seal the penetrations as part of the maintenance budget. The cost to replace the paint the CMU walls is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
14	Sahtlam Fire Hall	B202001 Windows	Original Windows	The original windows are single glazed aluminum framed units with sliding sashes.	Replace the original aluminum framed windows with new thermally-broken, insulated glass units (IGUs) with Low E coatings and argon fill. The windows are generally well-protected from the elements and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	\$7,000				\$7,000						

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
15	Sahtlam Fire Hall	B202001 Windows	Addition Windows	The addition windows are aluminum framed with double paned insulated glazing units (IGUs) with slider sashes.	Replace the original aluminum framed windows with new thermally-broken, insulated glass units (IGUs) with Low E coatings and argon fill. The windows are generally well-protected from the elements and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	\$10,000										\$10,000
16	Sahtlam Fire Hall	B203001 Exterior Metal Doors	Egress Doors	Single and double outswing steel doors are present at points of building egress on the main and lower floors. The doors have been replaced relatively recently and age of the doors has been approximated.	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
17	Sahtlam Fire Hall	B203001 Exterior Wood Doors	Front Entrance Doors	Double outswing wood doors are present at the front entrance to the building.	Replace doors at end of service life. The cost to replace the front entrance doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
18	Sahtlam Fire Hall	B203002 Glazed Doors	Sliding Patio Door	An aluminum sliding glass door with double paned IGU gives access to the lounge's exterior deck.	Replace sliding glass doors at the end of service life. The cost to replace the sliding glass door is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
19	Sahtlam Fire Hall	B203004 Overhead Garage Doors	Storage Garage Door	A single steel overhead door (manually operated) provides access through the garage below the lounge's exterior deck.	Replace overhead garage door on the storage garage at end of service life. The cost to replace the overhead door is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
20	Sahtlam Fire Hall	B203004 Overhead Garage Doors	Apparatus Bay Doors	Four vinyl-coated steel overhead doors with single glazing for natural lighting. Two of the doors have been provided with automatic openers . The age of the doors and openers has been approximated.	Replace apparatus bay doors and automatic openers at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
21	Sahtlam Fire Hall	B301002 Slope Roof	Metal Panels - Original	The sloped roofs are clad with prefinished, corrugated metal roofing panels.	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
22	Sahtlam Fire Hall	B301002 Slope Roof	Metal Panels - Addition	The sloped roofs are clad with prefinished, corrugated metal roofing panels.	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION	Type	Priority	Total in 2017 Dollars	10-YEAR CAPITAL PLAN											
		ID	Location / Type						Description & History	Recommendation	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
											\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
23	Sahtlam Fire Hall	B301002 Slope Roof	Roofing Screws and Sealants	The metal panels are fastened to the roof deck with prefinished steel screws with neoprene-type washers. Plumbing stacks and other penetrations are sealed to the roofing panels. It is our understanding that the roofing panel screws were replaced in 2015 on the original section; however, the roofing screws on the addition roof appear to be original.	Replace roofing screws with integrated washers on the addition roof. Replace sealants at roof penetrations in conjunction with fastener work.	Replacement	2 - Restore Functionality	\$3,000	\$3,000											
24	Sahtlam Fire Hall	B301005 Gutters and Downspouts	Some Roof Eaves	Prefinished metal eaves troughs and downspouts are present at most eaves of the pitched roofs. The age of the eaves troughs and downspouts has been approximated. Some sections of roof were not outfitted with eaves troughs.	Replace eaves troughs and downspouts at the end of service life. Install eaves troughs where not present to reduce the level of ponding water adjacent to the building / foundation. The cost to install new segments of eaves trough is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.		2 - Restore Functionality													
25	Sahtlam Fire Hall	C102001 Standard Interior Doors	Throughout Building	Original wood doors are present throughout the building at offices, service rooms and bathrooms.	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.															
26	Sahtlam Fire Hall	C103002 Toilet and Bath Accessories, Rehab	Upper and Main Floors	Four washrooms are present in the building. The standard equipment includes toilets, a urinal, sinks in residential-type vanities and stall dividers in the community hall washroom. Some plumbing fixtures have been updated since original construction.	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their respective ages, the allowance included in the capital plan corresponds to the Fire Hall's discretionary / planned 2017 renovations of the community hall female washroom.	Replacement	3 - Future Renewal	\$5,000	\$5,000											
27	Sahtlam Fire Hall	C301003 Gypsum Board Wall Finishes	Paint	The majority of the interior walls are finished with painted gypsum board (excluding the community hall). The age of the paint has been approximated.	Repaint interior common walls as needed. An allowance for periodic painting has been included in the capital plan.	Contingency	4a - Discretionary Renewal	\$5,000					\$5,000							\$5,000
28	Sahtlam Fire Hall	C301005 Gypsum Board Wall Finishes	Wall Paper	The walls within the community hall are finished with wallpaper. The age of the wall paper has been approximated.	Replace wall paper at end of service life.	Replacement	4b - Discretionary Aesthetic	\$8,000									\$8,000			
29	Sahtlam Fire Hall	C302004 Resilient Floor Finishes	Original Flooring	Vinyl composite tile is present in the washrooms and the lounge.	Overlay vinyl composite tile (reportedly containing asbestos) with new vinyl plank flooring.	Replacement	3 - Future Renewal	\$12,000									\$12,000			
30	Sahtlam Fire Hall	C302004 Resilient Floor Finishes	Community Hall	Vinyl plank flooring overlays the existing vinyl composite tile.	Replace vinyl plank flooring at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
31	Sahtlam Fire Hall	C302005 Carpeting	Stairs, Hallways and Office	Berber carpet installed on the stairs, lower floor corridor and upper floor corridors. The age of the carpet has been approximated.	Replace stairs and corridor carpeting.	Replacement	3 - Future Renewal	\$5,000					\$5,000							

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN										
		ID	Location / Type		Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000	
32	Sahtlam Fire Hall	C103008 Counters and C103009 Cabinets	Millwork and Cabinetry	A commercial style kitchen is present on the main floor. Equipment provided includes laminate counter tops and wood veneer cabinets, a stainless steel sink, commercial cooler, a dishwasher, an electric range/oven and a commercial oven with ventilation and automatic fire suppression. The kitchen has been upgraded as equipment or wears out. A bar is present in the lounge on the upper floor. The bar contains a commercial refrigerator, residential refrigerator and a sink with original counter tops. The age of the equipment has been taken as the most recently upgraded item.	Renovate the kitchen and bar millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal							\$5,000				\$5,000	
33	Sahtlam Fire Hall	D304001 Air Distribution, Heating and Cooling	Heat Pumps	Three 24k BTU Mitsubishi heat pumps with dedicated digital thermostats condition the interior spaces (community hall and lounge). The age of the heat pumps has been approximated.	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
34	Sahtlam Fire Hall	D305002 Unit Heaters	Electric Forced Air	Electric fan heaters provide heating in the crawlspace, apparatus bay and some interior spaces (where the heat pumps do not service). The age of the heaters varies and has been approximated.	Replace heaters as unit failure occurs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
35	Sahtlam Fire Hall	D304007 Exhaust Systems	Washrooms	Fractional horsepower exhaust fans used to exhaust air in washrooms. The fan in the female washroom on the main floor is non-functioning.	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
36	Sahtlam Fire Hall	D304007 Ventilation Systems	Kitchen Exhaust	A roof-mounted exhaust fan is present to provide mechanical ventilation from the commercial kitchen. The age of the fan is estimated to be the same age as the oven and fire suppression system.	Replace kitchen exhaust fan at end of service life.	Replacement	3 - Future Renewal	\$3,000										\$3,000	
37	Sahtlam Fire Hall	D304007 Exhaust Systems - Apparatus Bay	Apparatus Bay	The truck exhaust pipes connect to ducting that is exhausted from the building by a furnace fan, which is understood to have been installed in approximately 1990 and approved for use by WorkSafe BC.	Replace or overhaul the exhaust fan at end of service life. The cost to replace the exhaust fan is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
38	Sahtlam Fire Hall	D202003 Domestic Water Equipment	Pump	The building's water supply originates from a well. The water is pumped into the building, treated and stored for domestic use.	Replace the pump at end of service life. The cost to replace the water pump is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
39	Sahtlam Fire Hall	D2030 Sanitary Waste	Piping	Sanitary and storm water collection piping was largely cast iron or ABS, where visible. The average year of installation was taken to be 1977.	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											\$4,000	
40	Sahtlam Fire Hall	D202003 Domestic Water Equipment	Treatment	The well water is treated with UV light, water softening and stored in a pressurized well-water tank.	Install new water treatment and storage equipment at the end of service life. A larger capacity and brand new storage tank is located in the crawlspace and is ready for installation as the new well is activated (estimated 2017-2018).	Replacement	3 - Future Renewal	\$4,000										\$4,000	

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
41	Sahtlam Fire Hall	D202001 Pipes and Fittings	Throughout Building	Piping is a mix of copper (original) and PEX (upgrades or during equipment replacement).	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs.	Contingency	3 - Future Renewal	\$5,000				\$5,000						
42	Sahtlam Fire Hall	D202003 Domestic Water Equipment - Tanks	Crawl Space	A 284 L, 4500 W John Wood domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	Replace domestic hot water heating tank prior to end of expected service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
43	Sahtlam Fire Hall	D501003 Main & Secondary Switchgear	Main Circuit Breaker	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 200A circuit breaker panel and various sub-panels.	Replace circuit breaker panels at end of service life. Perform infrared thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
44	Sahtlam Fire Hall	D502002 Branch Wiring & Devices	Wiring	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets. The year of installation varies; therefore, an average year of 1977 has been used. A exterior outlet was noted to be lacking a weatherproof cover and may not be GFCI protected.	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
45	Sahtlam Fire Hall	D502002 Lighting Equipment	Indoor Low-Voltage Fixtures	The lighting within the building is a combination of low-voltage fixtures and fluorescent tube lighting. The age of the lighting fixtures ranges between 30 to 40 years.	Replace fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures.	Replacement	2b - Exceeded Service Life	\$19,000				\$19,000						
46	Sahtlam Fire Hall	D502002 Lighting Equipment	Outdoor Fixtures	The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the fixtures has been approximated.	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
47	Sahtlam Fire Hall	D503008 LAN, TV, Telephone	Infrastructure Cabling	The facility is served by LAN, telephone, and TV cabling with boxes above the apparatus bay and within the crawl space. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
48	Sahtlam Fire Hall	D503008 Security Systems	Building Alarm	A DSC PE 1500 security system is present to detect break and enter incidents. The age of the equipment has been approximated.	Replace security system at end of service life.	Replacement	3 - Future Renewal	\$3,000								\$3,000		
49	Sahtlam Fire Hall	D503001 Fire Alarm Systems	Apparatus Bay	The building is equipped with an ESC 4750 alarm panel, connected to the heat detectors in the building. The panel functions; however, is obsolete. The age of panel has been approximated.	Replace the fire alarm panel at the end of its lifespan, including an allowance to replace some wiring and devices. The Fire Hall may be exempt due to the status of its occupancy as a fire hall.	Replacement	2b - Exceeded Service Life	\$14,000	\$14,000									

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Sahtlam Fire Hall, 4384 Cowichan Lake Road, Duncan, BC V9L 6J7

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$86,000	\$3,000	\$0	\$10,000	\$154,000	\$5,000	\$0	\$27,000	\$16,000	\$15,000
50	Sahtlam Fire Hall	D403001 Fire Extinguishing Devices	Kitchen Sprinklers	The kitchen contains an automatic fire suppression system over the oven.	Replace or upgrade system at the end of reliable service life. Inspect the extinguishing device annually and replace as directed by AHJ. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
51	Sahtlam Fire Hall	D509002 Emergency Lighting and Power	Emergency Generator	A 20kW Briggs and Stratton emergency generator is located on a concrete pad outside of the building footprint. The generator is tested internally on a regular basis.	Replace the emergency generator at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
52	Sahtlam Fire Hall	D509002 Emergency Lighting and Power	Transfer Switch	There is one automatic transfer switch in the crawlspace connected to the emergency generator.	Replace the automatic transfer switch at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
53	Sahtlam Fire Hall	G306004 Liquid Fuel Storage Tanks	Propane Tank	The emergency generator is fueled by propane, which is stored in a pressurized cylinder.	Replace propane storage tank at the end of service life. Re-paint the cylinder to refresh appearance and to mitigate wear from corrosion. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
54	Sahtlam Fire Hall	D509002 Emergency Lighting and Power	Emergency Lighting	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
55	Sahtlam Fire Hall	D509002 Emergency Exit Signs	Egress Routes	Exit signs direct occupants toward egress routes throughout the building. Age of equipment has been approximated.	Replace exit lights at end of service life, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
56	Sahtlam Fire Hall	G301005 Fire Protection Water Storage	Wood Cistern	Water to supply fire trucks is stored in an elevated wood cistern. The cistern is leaking.	Replace cistern with composite tank. Elevated structure's adequacy to be determined in the recommended seismic review, below (Professional Services).	Replacement	2 - Restore Functionality	\$16,000	\$16,000									
57	Sahtlam Fire Hall	P100001 Building Envelope Condition Assessment	Further Study	Building Envelope Condition Assessment (BECA) is a comprehensive study to evaluate the performance and condition of the roofing, wall, window / door assemblies of a building. A BECA is a prudent stage in a building envelope rehabilitation or renewals program to assist with determining scope and magnitude of the project, prior to design and tendering.	Conduct a BECA to review the conditions of the various building envelope components.	Study	4a - Discretionary Renewal	\$5,000			\$5,000							
58	Sahtlam Fire Hall	P100001 Detailed Seismic Evaluation	Further Study	For conducting a detailed seismic evaluation of the building.	Conduct detailed seismic evaluation as recommended in the preliminary seismic screening. This effort would be ranked as a high priority per the screening report.	Study	1 - Immediate	\$48,000	\$48,000									

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 01



Photo 02

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 03



Photo 04

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 05



Photo 06

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 07



Photo 08

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 09



Photo 10

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 11



Photo 12

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 13



Photo 14

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 15



Photo 16

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 17



Photo 18

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 19



Photo 20

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 21



Photo 22

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 23



Photo 24

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 25



Photo 26

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 27



Photo 28

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 29



Photo 30

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 31



Photo 32

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**

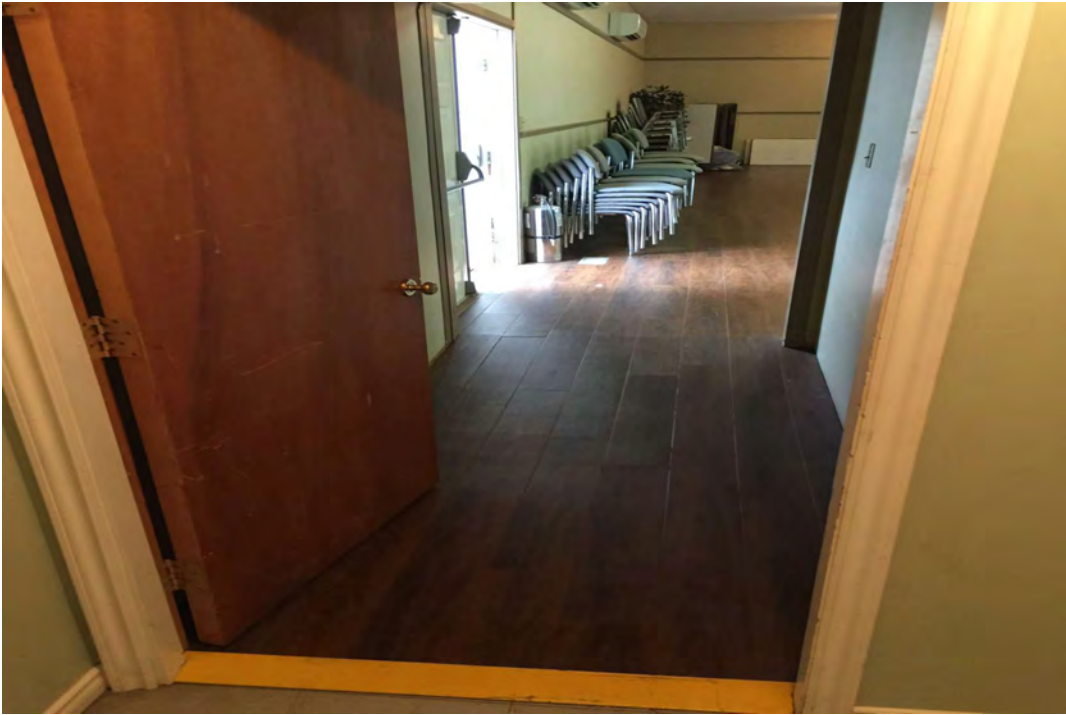


Photo 33



Photo 34

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 35



Photo 36

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**

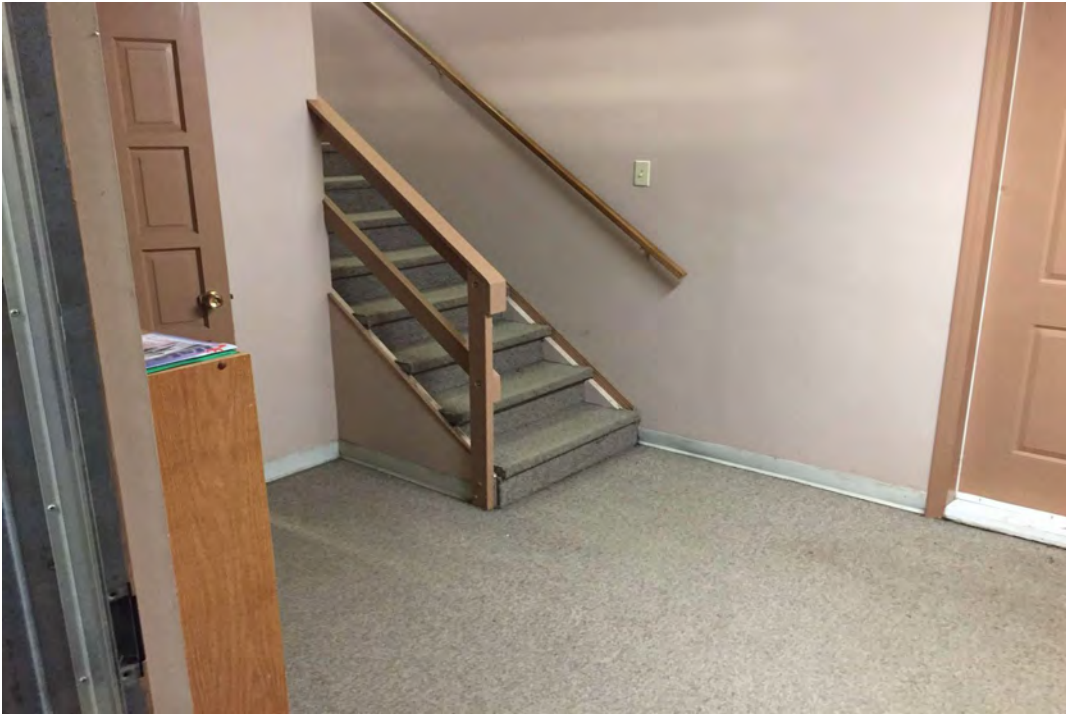


Photo 37



Photo 38

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 39



Photo 40

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 41



Photo 42

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 43



Photo 44

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 45



Photo 46

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 47



Photo 48

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 49



Photo 50

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 51



Photo 52

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 53



Photo 54

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 55



Photo 56

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 57



Photo 58

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 59



Photo 60

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 61



Photo 62

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 63



Photo 64

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 65



Photo 66

Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos



Photo 67



Photo 68

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 69



Photo 70

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 71



Photo 72

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 73



Photo 74

Cowichan Valley Regional District Sahtlam Fire Hall - Report Photos

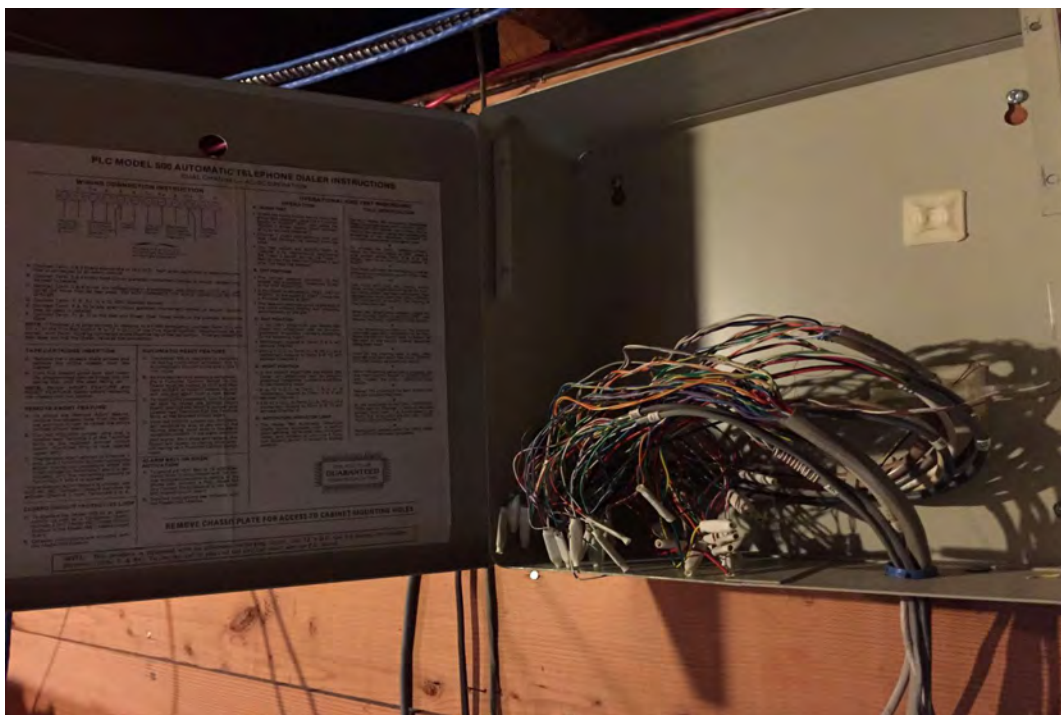


Photo 75



Photo 76

Cowichan Valley Regional District Sahtlam Fire Hall - Report Photos



Photo 77



Photo 78

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 79



Photo 80

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 81



Photo 82

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 83



Photo 84

**Cowichan Valley Regional District
Sahtlam Fire Hall - Report Photos**



Photo 85



MORRISON HERSHFIELD

August 31, 2017

Mr. Austin Tokarek, MBA, CEA
Asset Coordinator (Energy Manager Associate)
Engineering Services Department
Cowichan Valley Regional District
175 Ingram Street, Duncan, BC V9L 1N8

Our Reference: 5150481.00; Phase 13

Dear Mr. Tokarek;

Re: Sahtlam Fire Hall – 4384 Cowichan Lake Road, Duncan BC V9L 6J7**Background**

As requested, the undersigned carried out a field review for seismic assessment of Sahtlam Fire Hall building at 4384 Cowichan Lake Road, Duncan, BC, on behalf of Morrison Hershfield (MH) on August 28, 2017.

Scope of Work

The primary scope of this assignment was to evaluate the building by a rapid non-invasive screening method according to the "NRC-CNRC Manual for Screening of Building for Seismic Investigation", and to provide a letter report with recommendations for further detailed seismic evaluation.

Observation

The building is a two story structure which has been modified since its original construction. According to the available information, the original wood framed structure above the concrete masonry construction was built in 1971-72 and was expanded to the rear of the building in 1986. However, since no architectural or construction drawings were available we are not certain about these dates.

No structural drawings are available. Therefore, we do not know if the concrete masonry walls are reinforced. The ground floor is concrete slab on grade. The suspended floors and the roof are of wood construction.

Based on our non-invasive visual review, we can confirm the structure shows its age but did not show visible signs of distress, such as severe cracking or excessive deflections.

No geotechnical information on the site soil condition was available. Therefore, we have chosen "Unknown Soil" for soil condition.

Methodology

Seismic performance of a structure will depend on the severity and duration of the ground motion, soil condition, building irregularities, type and materials of construction. The seismic screening forms used for this assessment outline the methodology for this evaluation. Briefly, we have considered the factors such as the building age, soil condition, materials of construction, the lateral load resisting elements, building irregularities, potential hazards to the occupants from falling objects and non-structural components such as canopies, lights, non-safety glass and storage cabinets.

Based on our conversation with the local representative, we have assumed that the concrete masonry walls are reinforced with steel bars. We have also assumed that the original part and the additions to the original building are well connected to each other such that they will not cause damage by pounding against each other during a code level earthquake.

The above information was used to determine a Seismic Priority Index (SPI) which is made up of two components. First, the Structural Index (SI), relating to the possible failure/damage of the structure. Secondly, the Non-structural Index (NSI) for failure/damage of the non-structural components. The final score is the addition of the two components, $SPI = SI + NSI$.

Based on the SPI score, the structure is ranked low ($SPI < 10$), medium ($10 < SPI < 20$) or high priority ($SPI > 20$) for further detailed investigation. The SPI score over 30 is considered potentially hazardous.

Discussion

Refer to the seismic screening forms (3 sheets) completed with the properties discussed above. The Seismic Priority Index (SPI) was determined to be 40 which indicates a potentially hazardous condition. The SPI score will go up to 49 if the concrete masonry walls are, in fact, unreinforced. Such a high score indicates that the building will likely suffer serious damage during a code level earthquake.

The SPI score includes a non-structural index (NSI) which is an indication of hazard due to objects falling on to the occupants. Several tall cabinets/lockers in building were not anchored to wall. The non-structural hazards can be mitigated by anchoring object that may topple during an earthquake.

As explained in the manual, "It should be obvious that no rapid examination can provide highly reliable estimates of seismic performance, and the screening procedure is simply intended to identify those buildings where reasonable doubts may exist. It should be recognized that any simple screening procedure is limited." Therefore, if the structural system is unclear during a rapid screening procedure, it would be wise to err on the side of requiring the building to undergo further detailed investigation.

The building is not deficient due to one single reason. Several factors such as, the high seismic zone, masonry construction and building irregularities and non-structural deficiencies are the reasons why the SPI score is so high.



Recommendation

Since the SPI score is 40 which ranks the structure as potentially hazardous, we recommend detailed seismic evaluation for determining the feasibility of upgrading a building of this age and condition to meet the current requirements of the British Columbia Building Code.

Yours truly,
Morrison Hershfield Limited



Subrata Chakrabarti, Ph.D., P. Eng.
Senior Structural Engineer



AUG 31 2017

Chris Raudoy, B.Arch.Sci, LEED AP
Principal, Building Science Consultant

PROJECT: Sahtlam Fire Hall

4384 Cowichan Lake Road, Duncan, BC

No. of storeys:	2	Total Floor Area (m2):	650	Year Built:	1971-72
Primary Use:	Fire Hall	Heritage:	n	Modified:	1986
Inspector:	SC	Date:	22-Aug-17	MH Project No.:	5170700.00, Ph 13

Methodology:

The building has been evaluated by a rapid screening method according to the "NRC-CNRC Manual for Screening of Building for Seismic Investigation". We have reviewed the building age, materials of construction, lateral load resisting elements, building irregularities, soft stories, short columns, pounding hazards from adjacent structures, potential hazards to the building occupants from falling objects and non-structural components such as parapets, veneer, canopies, ceiling, lights and decorative fixtures, non-safety glass and storage cabinets.

The above information allows us to determine a Seismic Priority Index (SPI) which is made up of two components:

1. Structural Index (SI) relating to the damage or possible failure of the structure.
2. Non-structural Index (NSI) for failure/damage of the non-structural components.

The final score SPI is the addition of the two components, $SPI = SI + NSI$.

For ranking purposes, buildings with SPI scores of less than 10 would indicate a low priority, from 10 - 20 medium priority, and over 20 high priority, warranting more detailed seismic investigation. A SPI score over 30 is be considered as potentially hazardous.

See attached Seismic Screening Form for results of our review.

The method used is useful for the initial screening, although the National Building Code (NBC) has been revised several times since the manual was published in 1992. NBCC still recommends using the manual for such type of screening. It should be observed that the magnitude of the design earthquake is still the same as it was in 1990, however, the code now considers earthquakes occurring more frequently. The risks have not appreciably changed but the perception has. Certain buildings are now designed for higher lateral loads and there are new restrictions on the height and configuration of the buildings for certain types of construction. These factors should be considered as part of the next level of detailed investigation.

Estimated Cost

Recommend detailed seismic evaluation. The evaluation may determine that building should be demolished and be replaced with a new structure. The preliminary replacement costs are as follows.

Engineering:	Assessment and design	\$150,000.00
Construction:	Structural -	\$524,550.00
	Architectural -	\$1,049,100.00
	Mechanical	\$262,275.00
	Electrical	\$262,275.00
	Total	\$2,248,200.00

The estimates shown are preliminary. Further seismic evaluations, engineering and construction drawings would be necessary for the final estimate.



Date: **22-Aug-17** 774 Building #/Name: Fire Hall

Project: **Sahtlam Fire Hall**

SEISMIC SCREENING FORM Version 1.1 ITEM No.:

Address: **4384 Cowichan Lake Road, Duncan, BC** Postal Code: **V9L 6J7**

No. of storeys: **2** Total Floor Area: **650 m2** Year Built: **1971-72** Design NBC: **1965**

Primary use (see list on p. 2): **Fire Hall** Heritage Designation: **n**

Inspector: **SC** Date: **22-Aug-17** Report by: **SC**



TYPE OF STRUCTURE (Shown in red)		BM	BUILDING IRREGULARITIES (Shown in red)	
Wood	WLF Wood Light Frame	90	1. Vertical Irregularity	Abrupt changes in plan dimensions over height (e.g. setback or building on hill)
	WPB Wood, Post and Beam			
Steel	SMF Steel Moment Frame	90	2. Horizontal Irregularity (Torsion)	Irregular building shapes such as "L", "V", "E", "T", eccentric stiffness in plan (e.g. shear wall on only one side of building)
	SBF Steel Braced Frame			
	SLF Steel Light Frame			
	SCW Steel Frame with Concrete Shear Walls			
	SIW Steel Frame with infill Masonry			
Concrete	CMF Concrete Moment Frame	85	3. Short Concrete Columns	Short columns restrained by partial storey height walls (structural or infill) or deep spandrels
	CSW Concrete Shear Walls			
	CIW Concrete Frame with Infill Masonry Shear Walls			
	PCF Precast Concrete Frame			
	PCW Precast Concrete Walls			
Masonry	RML Reinforced Masonry Bearing Walls with Wood or Metal Deck Floors or Roofs	90	4. Soft Storey	Severe reduction of stiffness caused by discontinuous shear walls, openings, etc.
	RMC Reinforced Masonry Bearing Walls with Concrete Diaphragms			
	URM Unreinforced Masonry Bearing Wall Building			
			5. Pounding	Separation between buildings less than 20 Zv x no. of storeys (in mm)
			6. Major Modifications	Any change in function, use or addition which results in significant increase in loading or weight
			7. Deterioration	Structural elements are damaged, poor condition of building is apparent (corroded reinforcement or steel, rotted, wood, poor concrete or masonry)
			8. None	None of the irregularities listed above is present

NON - STRUCTURAL HAZARDS (High lighted or underlined)

F1 Falling Hazards to Life:
 Exterior: **Masonry chimneys**, parapets, veneer or stone / precast panels, non-safety glass, or canopies over exits and walkways
 Interior: Heavy components; masonry partitions; non-safety glass in egress areas; **storage shelves/lockers/articles on shelves may collapse onto areas of human occupancy; Water tank may collapse; Exterior wood stairs may suffer serious damage**

F2 Hazards to Continuous Operation of Special Buildings: Equipment or lifelines required for continuous operation of special facilities. The owner or authority should provide a list of critical items needed for continuing operations.

SEISMIC SCREENING FORM Version 1.1

SEISMIC PRIORITY INDEX: Circle appropriate value and enter each result on the right side. Use asterisk (*) with uncertain values

CLEAR ALL

A	Seismicity	Design NBC	Effective Seismic Zone (Zv or Zv + 1 if Za>Zv)						A =
			2	3	4	5	6		
		Pre - 65	1.0	1.5	2.0	3.0	4.0		
		65 - 84	1.0	1.0	1.3	1.5	2.0		1.5
	Post - 85	1.0	1.0	1.0	1.0	1.0			

B	Soil Conditions	Design NBC	Soil Category						B =
			Rock or Stiff Soil	Stiff Soil > 50 m	Soft Soil > 15 m	Very Soft or Liquefiable Soil	Unknown Soil		
		Pre - 65	1.0	1.3	1.5	2.0	1.5		
		Post - 65	1.0	1.0	1.0	1.5	1.5		1.5

C	Type of Structure (BM = Benchmark year, see p.1)	Design NBC	Construction Type and Symbol (see p. 1)													C =	
			Wood		Steel				Concrete		Precast		Masonry Infill	Masonry			
		WLF	WPB	SLF	SMF	SBF	SCW	CMF	CSW	PCF	PCW	SIW, CIW	RML, RMC	URM			
		Pre - 70	1.2	2.0	1.0	1.2	1.5	2.0	2.5	2.0	2.5	2.0	3.0	2.5		3.5	2.5
		70 - BM	1.2	2.0	1.0	1.2	1.5	1.5	1.5	1.5	1.8	1.5	3.0	1.5		3.5	
	Post - BM	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-				

D	Building Irregularities	Design NBC	1. Vertical	2. Horiz.	3. Short Concrete Columns	4. Soft Storey	5. Pounding	6. Modification	7. Deterioration	8. None		D = product of circled Numbers (Max of 4.0) =
			Pre - 70	1.3 <input checked="" type="checkbox"/>	1.5 <input checked="" type="checkbox"/>	1.5 <input type="checkbox"/>	2.0 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.3 <input type="checkbox"/>		1.0 <input type="checkbox"/>
		Post - 70	1.3 <input type="checkbox"/>	1.5 <input type="checkbox"/>	1.5 <input type="checkbox"/>	1.5 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.0 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.0 <input type="checkbox"/>		2.0

E	Building Importance	Design NBC	Low Occupancy N < 10	Normal Occupancy N = 10 - 300	School, or High Occupancy N = 301 - 3000	Post Disaster, or Very High Occup. N > 3000	Special Operational Requirements		E =
			Pre - 70	0.7	1.0	1.5	2.0		3.0
		Post - 70	0.7	1.0	1.2	1.5	2.0		2.0

N = Occupied Area x Occupancy Density x Duration Factor* = x x = 0

E	Primary Use:	Occupancy Density Persons/m ²	Average Weekly Hours of Human Occupancy	*Duration Factor is equal to the average weekly hours of Human occupancy divided by 100, not greater than 1.0
	Assembly	1.0	5-50	
	Mercantile, Personal service	0.2	50-80	
	Offices, Institutional, Manufacturing	0.1	50-60	
	Residential	0.1	100	
Storage	0.01-0.02	100		

SI	STRUCTURAL INDEX = A*B*C*D*E ----->	SI =	22
-----------	-------------------------------------	-------------	-----------

F	NON-STRUCTURAL HAZARDS		Description (see p. 1)	None	Yes	Yes*						F = max (F1, F2)
	F1	Falling Hazards to Life	Pre-70 NBC	1	3	6						6.0
			Post-70 NBC	1	2	3						
F2	Hazards to Vital Operations	Any Year	1	3	6							

*applies only if one or more of the following descriptors on page 1 are circled: SMF, CMF, soft storey, torsion

NSI	NON STRUCTURAL INDEX = B*E*F ----->	NSI =	18.0
------------	-------------------------------------	--------------	-------------

SPI	SEISMIC PRIORITY INDEX = SI+NSI ----->	SPI =	40
------------	--	--------------	-----------

Comments: The SPI score of 40 indicates potentially hazardous condition. The building will likely suffer significant damage during a code level earthquake. We understand the building was built in stages with volunteer effort. No record drawings or geotechnical reports were made available. Without the drawings and reports we cannot confirm if the concrete masonry walls have adequate reinforcing steel to meet the requirements of the code or the soil condition at this site. We have assumed that the masonry walls are reinforced. The wood water tank and the wood stairs on the right side of the building would likely be safety hazards during a code level earthquake. Recommend detailed evaluation to determine the feasibility of upgrading to building to meet the requirements of the current code. The evaluation may conclude that the upgrade may not be cost effective and that building should be demolished and be replaced with a new structure.

Appendix A

A – 13 Malahat Fire Hall

Malahat Fire Hall



Cowichan Valley Regional District

MH Project No. 5170700.00

November 2017



Cowichan Valley
Regional District
175 Ingram Street
Duncan, BC V9L 1N8



MORRISON HERSHFIELD

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC**

PROPERTY DESCRIPTION

Malahat Fire Hall was initially constructed in 1978, and was comprised of the quonset-type building. An addition was constructed in the 1980's to expand the apparatus bay forward of the quonset.

Refer to Photo 01.

The facility includes a multi-purpose room on the second floor, complete with a kitchen, washrooms, storage, offices and a balcony. The main floor houses the offices, storage, a workshop, apparatus bays, utility rooms and a washroom.

PROPERTY STATISTICS

Gross Floor Area: 4,780 sf.

Replacement Value: \$1,629,980

Target FCI: 0.050

Current FCI: 0.094

REPORT OVERVIEW

We identified Priority 1 - Immediate expenditures totalling \$62,000 as follows:

- Row 38 - D503001 Fire Alarm Systems - \$30,000
- Row 44 - P100001 Detailed Seismic Evaluation - \$48,000

The following provides an overview of the visual seismic, building code, accessibility and energy efficiency reviews completed.

Seismic Review

Seismic work completed to date: None
 Recommendations: Perform detailed seismic evaluation to determine the suitability of the structure to function as a post-disaster

Building Code Review

Built under what code: National Building Code 1975 or 1977
 Deficiencies observed: Handrails on egress stairs may be in violation of present British Columbia Building Code. Lack of fire alarm panel may not comply with post-disaster building requirements.

Accessibility Review

Access into building: None
 Access throughout building: None
 Access to washrooms: None
 Recommendations: The building does not meet the requirements of an accessible building per the British Columbia Building Code.

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC**

We identified recommendations of approximately \$171,000 over the next five years. The following is a summary of the major projects (over \$10,000) we believe will be required the next five years, and elements whose condition is unknown and/or where further investigation is recommended:

- Row 5 - B10 Superstructure (apparatus bay pedestal repair) - \$22,000
- Row 35 - D502002 Lighting Equipment (indoor low-voltage light fixtures) - \$10,000
- Row 38 - D503001 Fire Alarm Systems - \$30,000
- Row 40 - D509002 Emergency Lighting and Power (emergency generator) - \$50,000
- Row 44 - P100001 Detailed Seismic Evaluation - \$48,000

PROJECT TEAM

The visual reviews were completed on August 1, 2017 by Jordan Bowie of MH. We began with an interview with Jason deJong, Fire Rescue Services Coordinator. During our review of the building, we were accompanied by Mr. deJong, who provided access to a sampling of representative areas of the facility, as requested. We were unable to access the room containing the hot water heater and the generator enclosure due to a lack of keys.

Chris Raudoy of Morrison Hershfield reviewed the report for technical content and for compliance with the contract requirements.

REFERENCE DOCUMENTS/INFORMATION

We reviewed the following documents and selected drawings for general background and to inform ourselves about the layout and intended construction:

- Custom Services Custom Valuation by RMS, dated June 25, 2013

This report should be reviewed in conjunction with the Objectives, Terms of Reference, Limitations, and Methodology described in the main body of the report.

**Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Malahat Fire Hall, 935 Whittaker Road, Malahat, BC**

We recommend budgeting for the following 1 – Immediate, 2 - Restore Functionality, 2b - Exceeded Service Life and 3 - Future Renewal projects by year as follows:

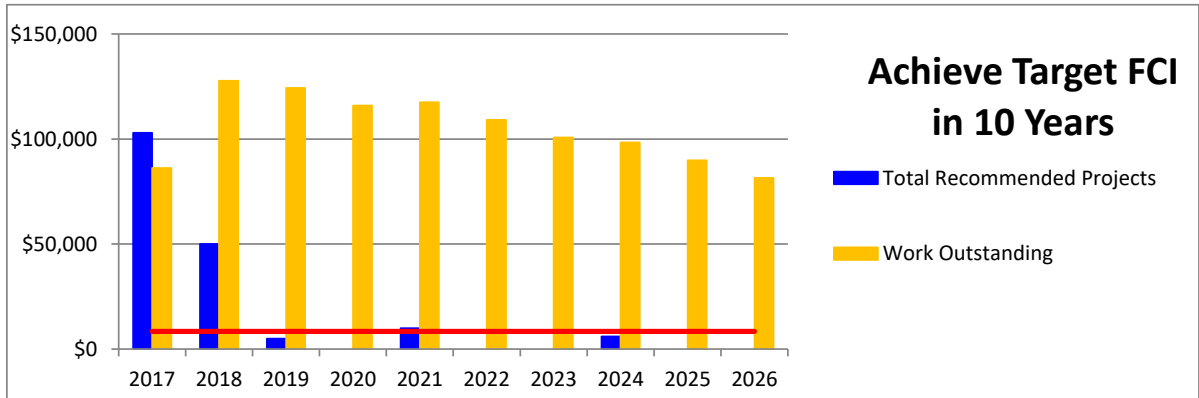
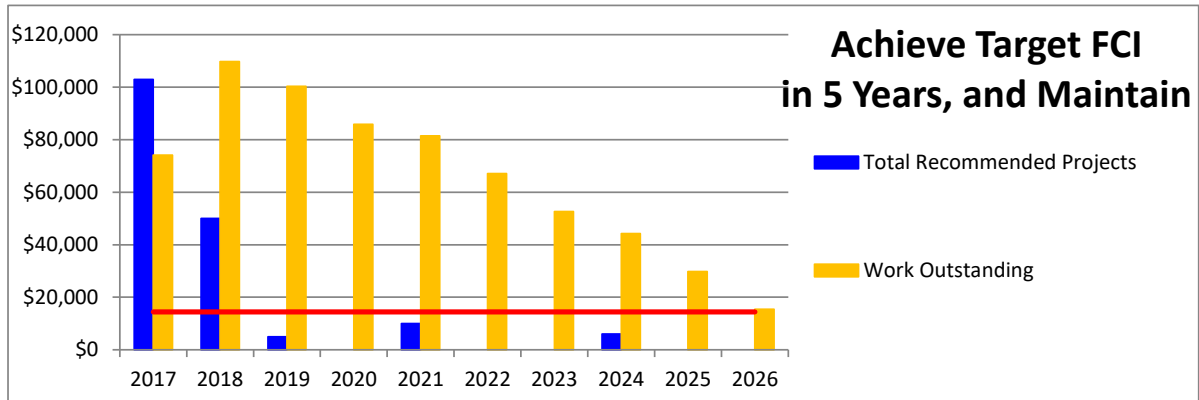
Priority	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1 – Immediate	62,000	0	0	0	0	0	0	0	0	0
2 - Restore Functionality	30,000	0	0	0	0	0	0	0	0	0
2b - Exceeded Service Life	0	0	0	0	0	0	0	0	0	0
3 - Future Renewal	11,000	50,000	5,000	0	10,000	0	0	6,000	0	0
Total in 2017 dollars	103,000	50,000	5,000	0	10,000	0	0	6,000	0	0

Minimum Funding to Achieve and Maintain Target FCI within 5 years: \$14,417

Work outstanding	74,166	109,750	100,333	85,916	81,499	67,082	52,665	44,249	29,832	15,415
------------------	--------	---------	---------	--------	--------	--------	--------	--------	--------	--------

Minimum Funding to Achieve Target FCI within 10 years: \$8,409

Work outstanding	86,182	127,772	124,363	115,954	117,545	109,136	100,727	98,317	89,908	81,499
------------------	--------	---------	---------	---------	---------	---------	---------	--------	--------	--------



Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT		Photo	CONDITION ASSESSMENT				LIFECYCLE DATA			RECOMMENDATION				OPINION OF PROBABLE COST													
						ID	Location / Type		Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOJ or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	if recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars		
1	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	A Substructure	A10 Foundations	A1010 Standard Foundations	A101001 Wall Foundations	Below Grade/ Foundations	02		The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of above-grade foundation wall on some elevations and within the mechanics pit in the apparatus bay.	4	5	1978	1-Aug-17	MH	39	75	36	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
2	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A1030 Slab on Grade	Interior At-Grade/ Slab-on-Grade	03		The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	4	5	1978	1-Aug-17	MH	39	75	36	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
3	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Below Grade/ Foundation Walls	04		Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity. Some moisture was observed in the mechanics pit, which appears to have seeped in from below-grade.	4	4	1978	1-Aug-17	MH	39	5	1	Periodic camera inspection and isolated repairs as required. The level of moisture noted in the mechanics pit was minor; however, it is recommended that it be revisited during the perimeter drain review. If it becomes evident that there are no external drains to manage water ingress at the pit, a crystalline slurry could be applied to the concrete to assist with mitigated moisture ingress.	Study	Not Applicable	No	N/A	No	N/A	1	\$2,000	LS	\$2,000	0%	0%	5%	\$3,000
4	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Below Grade/ Perimeter Drains	x		Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	4	4	1978	1-Aug-17	MH	39	75	36	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal	N/A	N/A	No	No								
5	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B10 Superstructure	B10 Superstructure	B10 Superstructure	Throughout Building/ General Super Structure	05		The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported; however, spalling was observed at the edge of the concrete pedestals supporting apparatus bay posts. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	3	5	1978	1-Aug-17	MH	39	75	1	Interior protected structural components are expected to last the life of the building. A budget has been included in the capital plan to replace spalled concrete pedestals in the apparatus bay.	Contingency	2 - Restore Functionality	No	Yes	Yes	No	2	\$10,000	LS	\$20,000	10%	0%	0%	\$22,000
6	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C20 Stairs	C2010 Stair Constructions	C201002 Exterior Stair Construction	Exterior of Building/ Egress Stairs	06		Steel framed egress stairs are located on the side elevation. Painted wood pickets have been added to the steel framework to improve the safety of the stairs.	3	4	1978	1-Aug-17	MH	39	50	11	Replace stairs at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables. Budget to replace and repaint pickets as deterioration is evident (maintenance item).	Repair Allowance	3 - Future Renewal	No	Yes	Partial	No								
7	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B10 Superstructure	B1010 Floor Construction	B101004 Balcony Construction	Balcony/ Membrane	07, 08		A balcony, off the upper floor lounge, with liquid-applied membrane is present. Transitions between the membrane and upturns has failed. The surface of the membrane is worn and flaking. The age of the membrane has been approximated.	2	3	1985	1-Aug-17	MH	32	20	1	Replace the membrane at the end of service life. Adjacent cladding removals and reinstatement is necessary to ensure that the membrane is properly interfaced at vertical-to-horizontal tie-ins.	Replacement	3 - Future Renewal	Yes	Yes	No	No	72	\$30	SF	\$2,160	10%	15%	5%	\$3,000
8	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	CB20 Exterior Enclosure	B2010 Exterior Walls	B201007 Balcony Walls and Railings	Balcony/ Railings	09		Wood picket railings are present at the outer face of the balcony. The guard posts are top-mounted through the membrane.	2	3	1985	1-Aug-17	MH	32	30	1	Replace guards rails in conjunction with the balcony membrane. The cost to replace the railings is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
9	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	CB20 Exterior Enclosure	B2010 Exterior Walls	B2010 Exterior Walls - Fibre Cement Siding	Rear Elevation/ Siding	10, 11		Painted fibre cement lap siding installed on the rear elevation of the building. An improperly abandoned duct was observed. Age of siding approximated.	4	5	2010	1-Aug-17	MH	7	40	33	Replace fibre cement siding at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables. Properly close-off the duct opening in the siding to mitigate moisture and/or pest ingress (maintenance).	Replacement	3 - Future Renewal	Yes	Yes	No	No								
10	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B2010 Exterior Walls - Wood Siding	Front Elevation/ Siding	12		Wood siding is present on the exterior walls of the addition (front of apparatus bay).	3	4	1985	1-Aug-17	MH	32	50	18	Replace wood siding at end of service life. Paint siding in year 1 to maintain the appearance of the exterior - this item is considered maintenance and have been excluded from the capital plan.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
11	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201001 Exterior Walls - Metal Cladding	Exterior Walls and Roof/ Metal Roof	13, 14, 15		Prefinished corrugated metal cladding on the exterior walls and roof of the quonset section of the building. Impact damage was noted on the base of some walls and fasteners were noted to have backed-out of the material. An improper transition was made between the wood siding and metal cladding. A stain was observed on the ceiling from within the lounge, alluding to a roof leak. The status of the leak is unknown.	3	5	1978	1-Aug-17	MH	39	50	11	Replace metal cladding at end of service life. Replace the screws with worn-out washers and re-seat screws where backed-out (maintenance). Confirm status of leak (stain on ceiling) and repair metal cladding as required. The damaged cladding should be repaired and a new transition membrane / flashing installed between wood siding and metal cladding. The allowance provided in the capital plan is intended as a repair contingency.	Replacement	3 - Future Renewal	Yes	Yes	No	No	1	\$5,000	LS	\$5,000	0%	0%	0%	\$5,000
12	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201001 Exterior Walls - Trim	Front and Rear of Building/ Gable Trim	16		Painted wood gable trim (laminated wood section) delaminating.	2	3	1978	1-Aug-17	MH	39	40	1	Replace gable trim.	Replacement	3 - Future Renewal	Yes	Yes	No	No	120	\$20	LF	\$2,400	0%	0%	0%	\$3,000
13	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201008 Exterior Soffits	Roof Eaves/ Metal Soffit	17		Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves. Painted plywood is present at the balcony. Age of soffit approximated.	4	5	2000	1-Aug-17	MH	17	30	13	Replace metal soffit at end of service life. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance). Repaint plywood soffit in conjunction with wood siding. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								

Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT		CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION				OPINION OF PROBABLE COST												
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOJ or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	if recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	Contingency	5% Tax	Total in 2017 Dollars
14	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2020 Exterior Windows	B202001 Windows	Exterior Walls/ Aluminum Windows	18, 19	Windows are aluminum framed with double paned insulated glazing units (IGUs) with slider and awning sashes. Glazing stop absent from balcony window.	3	4	1978	1-Aug-17	MH	39	35	3	Replace the glazing stops on the balcony window (maintenance). As the windows have outlasted their typical service life and are generally in fair condition, replace windows as an energy performance / comfort upgrade.	Replacement	3 - Future Renewal	Yes	Yes	No	No	5	\$1,000	EA	\$5,000	0%	0%	0%	\$5,000
15	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203001 Exterior Doors	Exterior Walls/ Egress Doors	20, 21	Single outswing steel, metal clad and wood doors are present at points of building egress. The age of the doors has been approximated. Corrosion was noted on the fire escape door off the balcony.	3	3	1985	1-Aug-17	MH	32	40	8	Replace doors at end of service life, as-needed. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. Maintenance includes removing corrosion, priming and repainting the upper door. The cost to replace doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
16	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203004 Overhead Garage Doors	Front Elevation/ Apparatus Bay Doors	22	Three vinyl-coated steel overhead doors with automatic openers. The age of the doors and openers has been approximated.	4	5	2015	1-Aug-17	MH	2	25	23	Replace apparatus bay doors and automatic openers at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	No								
17	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301001 Slope Roof	Roof/ Asphalt Shingle	23	The sloped roof is finished with asphalt shingles. The shingles were deteriorated and covered with organic growth.	1	2	1985	1-Aug-17	MH	32	25	1	Replace shingles, building paper, vents, gable flashings.	Replacement	2 - Restore Functionality	No	Yes	Yes	No	1200	\$5	SF	\$6,000	0%	15%	5%	\$8,000
18	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301005 Gutters and Downspouts	Roof Eaves/ Eaves Troughs	24	Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roof. The age of the trough has been approximated.	4	5	2010	1-Aug-17	MH	7	20	13	Replace eaves troughs and downspouts at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables. Clear debris from troughs at regular intervals.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
19	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Throughout Building Interior/ Doors	25, 26	Painted wood doors are present throughout the building at offices, service rooms and bathrooms. The majority of the doors were replaced in recent renovations (age approximated).	4	5	2015	1-Aug-17	MH	2	30	28	Replace doors at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
20	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103002 Toilet and Bath Accessories, Rehab	Upper and Main Floors/ Washrooms	27, 28, 29	Three washrooms are present in the building. The standard equipment includes toilets and sinks in residential-type vanities. Some plumbing fixtures have been updated since original construction.	4	5	2015	1-Aug-17	MH	2	20	18	General refurbishment of washrooms at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
21	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301005 Gypsum Board Wall and Ceiling Finishes	Interior Walls/ Paint	30, 31	The majority of the interior walls are finished with painted gypsum board. Generally in fair condition throughout the building, the service room paint was below typical standard. The age of the paint has been approximated and varies throughout the building.	3	5	2015	1-Aug-17	MH	2	10	8	Repaint interior common walls as needed. Note that service rooms may not require the same standard of paint condition as in the more frequently used areas. The painting has been considered as one bulk allowance for the entire building.	Contingency	4b - Discretionary Aesthetic	Yes	Yes	No	No	1	\$10,000	LS	\$10,000	0%	0%	0%	\$10,000
22	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302001 Tile Flooring	Kitchen/ Ceramic Tile	32	Ceramic tile installed on the floor of the kitchen. The kitchen was renovated in 2015 (age approximated).	4	5	2015	1-Aug-17	MH	2	30	28	Replace tile flooring at end of service life or during subsequent kitchen renovations. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
23	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302004 Resilient Floor Finishes	Interior Floors/ Original Flooring	33, 34, 35	Vinyl plank flooring, installed in the lounge was in good condition. The older vinyl sheet and tile flooring was in poor condition (main floor and upper floor washroom). The age of flooring has been approximated.	2	3	1978	1-Aug-17	MH	39	40	1	Replace older vinyl flooring with new vinyl plank flooring or similar.	Replacement	3 - Future Renewal	No	Yes	No	No	300	\$7	SF	\$2,100	0%	15%	5%	\$3,000
24	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	36	A residential-style kitchen is present on the upper floor. Equipment provided includes laminate counter tops and wood cabinets, a stainless steel sink and various appliances. The kitchen was renovated in 2015 (age approximated).	4	5	2015	1-Aug-17	MH	2	25	23	Renovate the kitchen and bar millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
25	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304001 Air Distribution, Heating and Cooling	Rear Elevation/ Heat Pump	37, 38	One Mitsubishi heat pump (model PUMY-P48NHMU) with central digital thermostat condition the interior spaces. The age of the heat pump has been approximated.	4	5	2015	1-Aug-17	MH	2	15	13	Replace compressor as it fails. Replace the heat pump once it is no longer economical to maintain the unit. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
26	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D30 HVAC	D3040 Distribution System	D304008 Air Handling Units	Apparatus Bay/ Air Handler	39	An air handler moves the conditioned air from heat pump to interior spaces via insulated ducting. No information on the air handler was available. The age of the air handler has been approximated.	4	5	2015	1-Aug-17	MH	2	20	18	Replace or substantially overhaul the air handler at end of reliable service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
27	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305002 Unit Heaters	Apparatus Bay/ Electric Forced Air Heaters	40	Electric fan heaters provide heating in the apparatus bays, controlled by dedicated, bi-metallic thermostats. The age of the heaters has been approximated.	3	5	1985	1-Aug-17	MH	32	40	8	Replace heaters as unit failure occurs. The cost to replace the unit heaters is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
28	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D30 HVAC	D3040 Distribution System	D304007 Exhaust Systems	Washrooms, Hose Tower & Kitchen/ Exhaust Fans	41, 42	Fractional horsepower exhaust fans used to exhaust air from washrooms, hose tower and the kitchen. The age of the exhaust fans has been approximated.	4	5	2015	1-Aug-17	MH	2	20	18	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								

Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDC Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION				OPINION OF PROBABLE COST											
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOJ or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	if recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars	
29	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D30 HVAC	D3040 Distribution System	D304007 Exhaust Systems	Apparatus Bay/ Exhaust Fan	43	Truck exhaust is exhausted from the apparatus bay through and wall-mounted fan. The fan is not a conventional system. Verification that the exhaust meets the requirements of WorkSafe BC was not confirmed. Age of the exhaust fan has been approximated.	4	5	2000	1-Aug-17	MH	17	30	13	Replace or overhaul the exhaust fan at end of service life. We recommend having the exhaust system approved by WorkSafe BC to ensure that it meets health and safety standards for its application. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	No								
30	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202001 Pipes and Fittings	Throughout Building/ Copper Water Piping	44	Water for domestic service is provided by the adjacent mobile home park. Piping is primarily of copper. Age of the piping has been approximated.	4	5	1985	1-Aug-17	MH	32	40	8	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs. It is our understanding that the Fire Hall is considering drilling a well for domestic water consumption.	Contingency	3 - Future Renewal	Yes	Yes	No	No	1	\$6,000	LS	\$6,000	0%	0%	0%	\$6,000
31	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D20 Plumbing	D2030 Sanitary Waste	D203001 Waste Pipe and Fittings	Throughout Building/ ABS Sanitary Piping	44	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field.	4	5	1978	1-Aug-17	MH	39	60	21	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
32	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment - Tanks	Service Room/ Hot Water Heating Tank	x	A domestic hot water heating tank supplies tempered water to the building's plumbing fixtures. The tank was not accessed during the review and assumptions have been made accordingly.	3	3	2015	1-Aug-17	MH	2	10	8	Consider replacing the domestic hot water heating tank prior to the end of service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
33	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5010 Electrical Service and Distribution	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	45, 46, 47, 48, 49, 50	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 200A circuit breaker panel (original) and various sub-panels (newer).	3	5	1978	1-Aug-17	MH	39	60	21	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	Yes								
34	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	51, 52	Wiring throughout the facility is assumed to be copper. Devices include all house voltage switches and outlets. Some of the wiring has been replaced / upgraded during renovations. The wiring has been taken as primarily 1978 vintage.	4	5	1978	1-Aug-17	MH	39	60	21	Replace or upgrade wiring as required. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
35	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Throughout Interior of Building/ Low-Voltage Fixtures	53	The lighting within the building is a combination of low-voltage fixtures and fluorescent tube lighting. The age of the lighting fixtures ranges between 2 and 39 years old (average age of 20 years).	4	5	1997	1-Aug-17	MH	20	25	5	Replace older T-12 fluorescent fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures.	Replacement	3 - Future Renewal	Yes	No	No	Yes	40	\$200	EA	\$8,000	0%	15%	5%	\$10,000
36	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	54, 55	The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the LED fixtures has been approximated.	4	5	2014	1-Aug-17	MH	3	25	22	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
37	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 LAN, TV, Telephone	Office and Lounge/ Infrastructure Cabling	x	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	4	5	2005	1-Aug-17	MH	12	25	13	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	Partial	No								
38	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5030 Communications and Security	D503001 Fire Alarm Systems	N/A	x	There is no fire alarm system at the facility.		2	N/A	1-Aug-17	MH	N/A	20	1	Install monitored fire alarm system with pull stations, bells and heat detectors.	New	1 - Immediate	No	No	No	No	1	\$30,000	LS	\$30,000	0%	0%	0%	\$30,000
39	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 Security Systems	Exterior Walls/ CCTV	56, 57	An CCTV system with 8 channels and a DVR monitors the building. Age of equipment has been approximated.	4	5	2015	1-Aug-17	MH	2	15	13	Replace CCTV system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	No								
40	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	58	An emergency generator is located on a concrete pad outside of the building footprint. The output is directed to building via a transfer switch. The fuel tank is located in the shed. Costing included in the capital plan estimated.	3	4	1978	1-Aug-17	MH	39	40	2	It is our understanding that a new generator will be installed in 2018. New equipment's fuel source and installation of new transfer switch unknown.	Replacement	3 - Future Renewal	No	Yes	No	No	1	\$50,000	LS	\$50,000	0%	0%	0%	\$50,000
41	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting	59	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	4	5	2015	1-Aug-17	MH	2	20	18	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
42	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 Security Systems	Building Alarm	60, 61	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	4	5	2015	1-Aug-17	MH	2	20	18	Replace security system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	No								
43	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509005 Electric Heating	Main Floor	62, 63	Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating.	4	5	2010	1-Aug-17	MH	7	25	18	Upgrades to select equipment has been undertaken. Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
44	Malahat Fire Hall	935 Whittaker Rd., Malahat, BC	P Professional Services	P100001 Seismic Review	P100001 Seismic Review	P100001 Detailed Seismic Evaluation	Further Study	x	For conducting a detailed seismic evaluation of the building.		3	1978	1-Aug-17	MH	39	10	0	Conduct detailed seismic evaluation as recommended in the preliminary screening report. This effort would be ranked as a medium priority per the screening report.	Study	1 - Immediate	No	No	Yes	No	1	\$30,000	LS	\$30,000	0%	0%	5%	\$32,000

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$106,000	\$50,000	\$5,000	\$0	\$10,000	\$0	\$0	\$16,000	\$0	\$0
1	Malahat Fire Hall	A101001 Wall Foundations	Below Grade/ Foundations	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of above-grade foundation wall on some elevations and within the mechanics pit in the apparatus bay.	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
2	Malahat Fire Hall	A1030 Slab on Grade	Interior At-Grade/ Slab-on-Grade	The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
3	Malahat Fire Hall	A103006 Foundation Drainage	Below Grade/ Foundation Walls	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity. Some moisture was observed in the mechanics pit, which appears to have seeped in from below-grade.	Periodic camera inspection and isolated repairs as required. The level of moisture noted in the mechanics pit was minor; however, it is recommended that it be revisited during the perimeter drain review. If it becomes evident that there are no external drains to manage water ingress at the pit, a crystalline slurry could be applied to the concrete to assist with mitigated moisture ingress.	Study	Not Applicable	\$3,000	\$3,000									
4	Malahat Fire Hall	A103006 Foundation Drainage	Below Grade/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal											
5	Malahat Fire Hall	B10 Superstructure	Throughout Building/ General Super Structure	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported; however, spalling was observed at the edge of the concrete pedestals supporting apparatus bay posts. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	Interior protected structural components are expected to last the life of the building. A budget has been included in the capital plan to replace spalled concrete pedestals in the apparatus bay.	Contingency	2 - Restore Functionality	\$22,000	\$22,000									
6	Malahat Fire Hall	C201002 Exterior Stair Construction	Exterior of Building/ Egress Stairs	Steel framed egress stairs are located on the side elevation. Painted wood pickets have been added to the steel framework to improve the safety of the stairs.	Replace stairs at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables. Budget to replace and repaint pickets as deterioration is evident (maintenance item).	Repair Allowance	3 - Future Renewal											
7	Malahat Fire Hall	B101004 Balcony Construction	Balcony/ Membrane	A balcony, off the upper floor lounge, with liquid-applied membrane is present. Transitions between the membrane and upturns has failed. The surface of the membrane is worn and flaking. The age of the membrane has been approximated.	Replace the membrane at the end of service life. Adjacent cladding removals and reinstatement is necessary to ensure that the membrane is properly interfaced at vertical-to-horizontal tie-ins.	Replacement	3 - Future Renewal	\$3,000										
8	Malahat Fire Hall	B201007 Balcony Walls and Railings	Balcony/ Railings	Wood picket railings are present at the outer face of the balcony. The guard posts are top-mounted through the membrane.	Replace guards rails in conjunction with the balcony membrane. The cost to replace the railings is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
9	Malahat Fire Hall	B2010 Exterior Walls - Fibre Cement Siding	Rear Elevation/ Siding	Painted fibre cement lap siding installed on the rear elevation of the building. An improperly abandoned duct was observed. Age of siding approximated.	Replace fibre cement siding at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables. Properly close-off the duct opening in the siding to mitigate moisture and/or pest ingress (maintenance).	Replacement	3 - Future Renewal											
10	Malahat Fire Hall	B2010 Exterior Walls - Wood Siding	Front Elevation/ Siding	Wood siding is present on the exterior walls of the addition (front of apparatus bay).	Replace wood siding at end of service life. Paint siding in year 1 to maintain the appearance of the exterior - this item is considered maintenance and have been excluded from the capital plan.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type		Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$106,000	\$50,000	\$5,000	\$0	\$10,000	\$0	\$0	\$16,000	\$0	\$0
11	Malahat Fire Hall	B201001 Exterior Walls - Metal Cladding	Exterior Walls and Roof/ Metal Roof	<p>Prefinished corrugated metal cladding on the exterior walls and roof of the quonset section of the building.</p> <p>Impact damage was noted on the base of some walls and fasteners were noted to have backed-out of the material. An improper transition was made between the wood siding and metal cladding.</p> <p>A stain was observed on the ceiling from within the lounge, alluding to a roof leak. The status of the leak is unknown.</p>	<p>Replace metal cladding at end of service life. Replace the screws with worn-out washers and re-seat screws where backed-out (maintenance).</p> <p>Confirm status of leak (stain on ceiling) and repair metal cladding as required.</p> <p>The damaged cladding should be repaired and a new transition membrane / flashing installed between wood siding and metal cladding. The allowance provided in the capital plan is intended as a repair contingency.</p>	Replacement	3 - Future Renewal	\$5,000	\$5,000									
12	Malahat Fire Hall	B201001 Exterior Walls - Trim	Front and Rear of Building/ Gable Trim	<p>Painted wood gable trim (laminated wood section) delaminating.</p>	<p>Replace gable trim.</p>	Replacement	3 - Future Renewal	\$3,000	\$3,000									
13	Malahat Fire Hall	B201008 Exterior Soffits	Roof Eaves/ Metal Soffit	<p>Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves. Painted plywood is present at the balcony.</p> <p>Age of soffit approximated.</p>	<p>Replace metal soffit at end of service life. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance).</p> <p>Repaint plywood soffit in conjunction with wood siding.</p> <p>This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.</p>	Replacement	3 - Future Renewal											
14	Malahat Fire Hall	B202001 Windows	Exterior Walls/ Aluminum Windows	<p>Windows are aluminum framed with double paned insulated glazing units (IGUs) with slider and awning sashes.</p> <p>Glazing stop absent from balcony window.</p>	<p>Replace the glazing stops on the balcony window (maintenance).</p> <p>As the windows have outlasted their typical service life and are generally in fair condition, replace windows as an energy performance / comfort upgrade.</p>	Replacement	3 - Future Renewal	\$5,000		\$5,000								
15	Malahat Fire Hall	B203001 Exterior Doors	Exterior Walls/ Egress Doors	<p>Single outswing steel, metal clad and wood doors are present at points of building egress. The age of the doors has been approximated.</p> <p>Corrosion was noted on the fire escape door off the balcony.</p>	<p>Replace doors at end of service life, as-needed. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. Maintenance includes removing corrosion, priming and repainting the upper door.</p> <p>The cost to replace doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.</p>	Replacement	3 - Future Renewal											
16	Malahat Fire Hall	B203004 Overhead Garage Doors	Front Elevation/ Apparatus Bay Doors	<p>Three vinyl-coated steel overhead doors with automatic openers. The age of the doors and openers has been approximated.</p>	<p>Replace apparatus bay doors and automatic openers at end of service life.</p> <p>This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.</p>	Replacement	3 - Future Renewal											
17	Malahat Fire Hall	B301001 Slope Roof	Roof/ Asphalt Shingle	<p>The sloped roof is finished with asphalt shingles.</p> <p>The shingles were deteriorated and covered with organic growth.</p>	<p>Replace shingles, building paper, vents, gable flashings.</p>	Replacement	2 - Restore Functionality	\$8,000	\$8,000									
18	Malahat Fire Hall	B301005 Gutters and Downspouts	Roof Eaves/ Eaves Troughs	<p>Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roof. The age of the trough has been approximated.</p>	<p>Replace eaves troughs and downspouts at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.</p> <p>Clear debris from troughs at regular intervals.</p>	Replacement	3 - Future Renewal											
19	Malahat Fire Hall	C102001 Standard Interior Doors	Throughout Building Interior/ Doors	<p>Painted wood doors are present throughout the building at offices, service rooms and bathrooms. The majority of the doors were replaced in recent renovations (age approximated).</p>	<p>Replace doors at end of service life.</p> <p>This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.</p>	Replacement	3 - Future Renewal											
20	Malahat Fire Hall	C103002 Toilet and Bath Accessories, Rehab	Upper and Main Floors/ Washrooms	<p>Three washrooms are present in the building. The standard equipment includes toilets and sinks in residential-type vanities. Some plumbing fixtures have been updated since original construction.</p>	<p>General refurbishment of washrooms at the end of service life.</p> <p>This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.</p>	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			10-YEAR CAPITAL PLAN											
		ID	Location / Type		Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
									\$106,000	\$50,000	\$5,000	\$0	\$10,000	\$0	\$0	\$16,000	\$0	\$0	
21	Malahat Fire Hall	C301005 Gypsum Board Wall and Ceiling Finishes	Interior Walls/ Paint	The majority of the interior walls are finished with painted gypsum board. Generally in fair condition throughout the building, the service room paint was below typical standard. The age of the paint has been approximated and varies throughout the building.	Repaint interior common walls as needed. Note that service rooms may not require the same standard of paint condition as in the more frequently used areas. The painting has been considered as one bulk allowance for the entire building.	Contingency	4b - Discretionary Aesthetic	\$10,000									\$10,000		
22	Malahat Fire Hall	C302001 Tile Flooring	Kitchen/ Ceramic Tile	Ceramic tile installed on the floor of the kitchen. The kitchen was renovated in 2015 (age approximated).	Replace tile flooring at end of service life or during subsequent kitchen renovations. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
23	Malahat Fire Hall	C302004 Resilient Floor Finishes	Interior Floors/ Original Flooring	Vinyl plank flooring, installed in the lounge was in good condition. The older vinyl sheet and tile flooring was in poor condition (main floor and upper floor washroom). The age of flooring has been approximated.	Replace older vinyl flooring with new vinyl plank flooring or similar.	Replacement	3 - Future Renewal	\$3,000	\$3,000										
24	Malahat Fire Hall	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	A residential-style kitchen is present on the upper floor. Equipment provided includes laminate counter tops and wood cabinets, a stainless steel sink and various appliances. The kitchen was renovated in 2015 (age approximated).	Renovate the kitchen and bar millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
25	Malahat Fire Hall	D304001 Air Distribution, Heating and Cooling	Rear Elevation/ Heat Pump	One Mitsubishi heat pump (model PUMY-P48NHMU) with central digital thermostat condition the interior spaces. The age of the heat pump has been approximated.	Replace compressor as it fails. Replace the heat pump once it is no longer economical to maintain the unit. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
26	Malahat Fire Hall	D304008 Air Handling Units	Apparatus Bay/ Air Handler	An air handler moves the conditioned air from heat pump to interior spaces via insulated ducting. No information on the air handler was available. The age of the air handler has been approximated.	Replace or substantially overhaul the air handler at end of reliable service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
27	Malahat Fire Hall	D305002 Unit Heaters	Apparatus Bay/ Electric Forced Air Heaters	Electric fan heaters provide heating in the apparatus bays, controlled by dedicated, bi-metallic thermostats. The age of the heaters has been approximated.	Replace heaters as unit failure occurs. The cost to replace the unit heaters is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
28	Malahat Fire Hall	D304007 Exhaust Systems	Washrooms, Hose Tower & Kitchen/ Exhaust Fans	Fractional horsepower exhaust fans used to exhaust air from washrooms, hose tower and the kitchen. The age of the exhaust fans has been approximated.	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
29	Malahat Fire Hall	D304007 Exhaust Systems	Apparatus Bay/ Exhaust Fan	Truck exhaust is exhausted from the apparatus bay through and wall-mounted fan. The fan is not a conventional system. Verification that the exhaust meets the requirements of WorkSafe BC was not confirmed. Age of the exhaust fan has been approximated.	Replace or overhaul the exhaust fan at end of service life. We recommend having the exhaust system approved by WorkSafe BC to ensure that it meets health and safety standards for its application. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
30	Malahat Fire Hall	D202001 Pipes and Fittings	Throughout Building/ Copper Water Piping	Water for domestic service is provided by the adjacent mobile home park. Piping is primarily of copper. Age of the piping has been approximated.	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs. It is our understanding that the Fire Hall is considering drilling a well for domestic water consumption.	Contingency	3 - Future Renewal	\$6,000									\$6,000		
31	Malahat Fire Hall	D023001 Waste Pipe and Fittings	Throughout Building/ ABS Sanitary Piping	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field.	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type		Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$106,000	\$50,000	\$5,000	\$0	\$10,000	\$0	\$0	\$16,000	\$0	\$0
32	Malahat Fire Hall	D202003 Domestic Water Equipment - Tanks	Service Room/ Hot Water Heating Tank	A domestic hot water heating tank supplies tempered water to the building's plumbing fixtures. The tank was not accessed during the review and assumptions have been made accordingly.	Consider replacing the domestic hot water heating tank prior to the end of service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
33	Malahat Fire Hall	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 200A circuit breaker panel (original) and various sub-panels (newer).	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
34	Malahat Fire Hall	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	Wiring throughout the facility is assumed to be copper. Devices include all house voltage switches and outlets. Some of the wiring has been replaced / upgraded during renovations. The wiring has been taken as primarily 1978 vintage.	Replace or upgrade wiring as required. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
35	Malahat Fire Hall	D502002 Lighting Equipment	Throughout Interior of Building/ Low-Voltage Fixtures	The lighting within the building is a combination of low-voltage fixtures and fluorescent tube lighting. The age of the lighting fixtures ranges between 2 and 39 years old (average age of 20 years).	Replace older T-12 fluorescent fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures.	Replacement	3 - Future Renewal	\$10,000				\$10,000						
36	Malahat Fire Hall	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the LED fixtures has been approximated.	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
37	Malahat Fire Hall	D503008 LAN, TV, Telephone	Office and Lounge/ Infrastructure Cabling	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
38	Malahat Fire Hall	D503001 Fire Alarm Systems	N/A	There is no fire alarm system at the facility.	Install monitored fire alarm system with pull stations, bells and heat detectors.	New	1 - Immediate	\$30,000	\$30,000									
39	Malahat Fire Hall	D503008 Security Systems	Exterior Walls/ CCTV	An CCTV system with 8 channels and a DVR monitors the building. Age of equipment has been approximated.	Replace CCTV system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
40	Malahat Fire Hall	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	An emergency generator is located on a concrete pad outside of the building footprint. The output is directed to building via a transfer switch. The fuel tank is located in the shed.	It is our understanding that a new generator will be installed in 2018. New equipment's fuel source and installation of new transfer switch unknown. Costing included in the capital plan estimated.	Replacement	3 - Future Renewal	\$50,000	\$50,000									
41	Malahat Fire Hall	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
42	Malahat Fire Hall	D503008 Security Systems	Building Alarm	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	Replace security system at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr **2017** Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Malahat Fire Hall, 935 Whittaker Road, Malahat, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total in 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$106,000	\$50,000	\$5,000	\$0	\$10,000	\$0	\$0	\$16,000	\$0	\$0
43	Malahat Fire Hall	D509005 Electric Heating	Main Floor	Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating.	Upgrades to select equipment has been undertaken. Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
44	Malahat Fire Hall	P100001 Detailed Seismic Evaluation	Further Study	For conducting a detailed seismic evaluation of the building.	Conduct detailed seismic evaluation as recommended in the preliminary seismic screening. This effort would be ranked as a medium priority per the screening report.	Study	1 - Immediate	\$32,000	\$32,000									

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 01



Photo 02

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 03

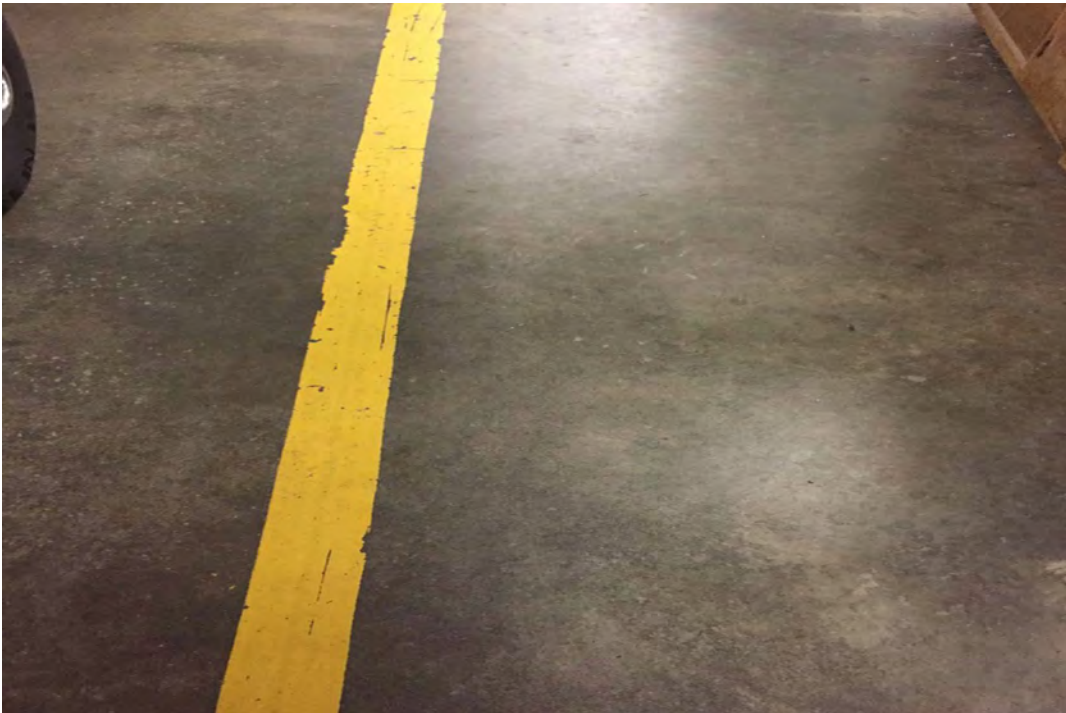


Photo 04

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 05



Photo 06

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 07



Photo 08

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 09



Photo 10

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 11



Photo 12

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 13

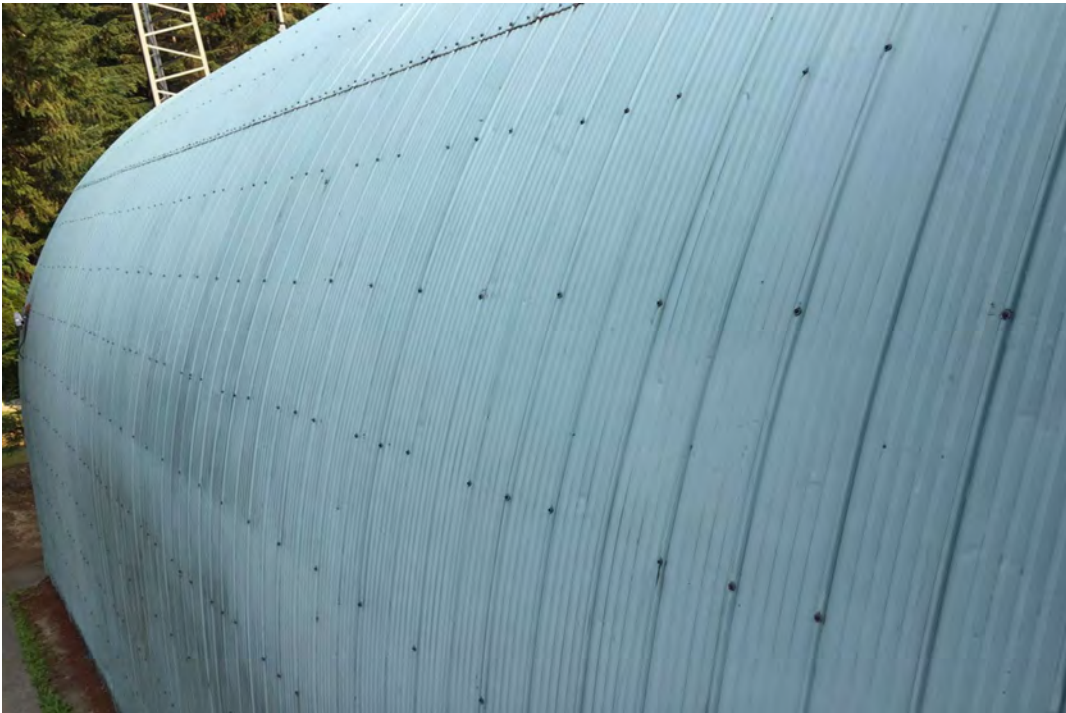


Photo 14

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 15



Photo 16

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 17



Photo 18

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 19



Photo 20

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 21



Photo 21a

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 22



Photo 23

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 24



Photo 25

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 26



Photo 27

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 28



Photo 29

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 30



Photo 31

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**

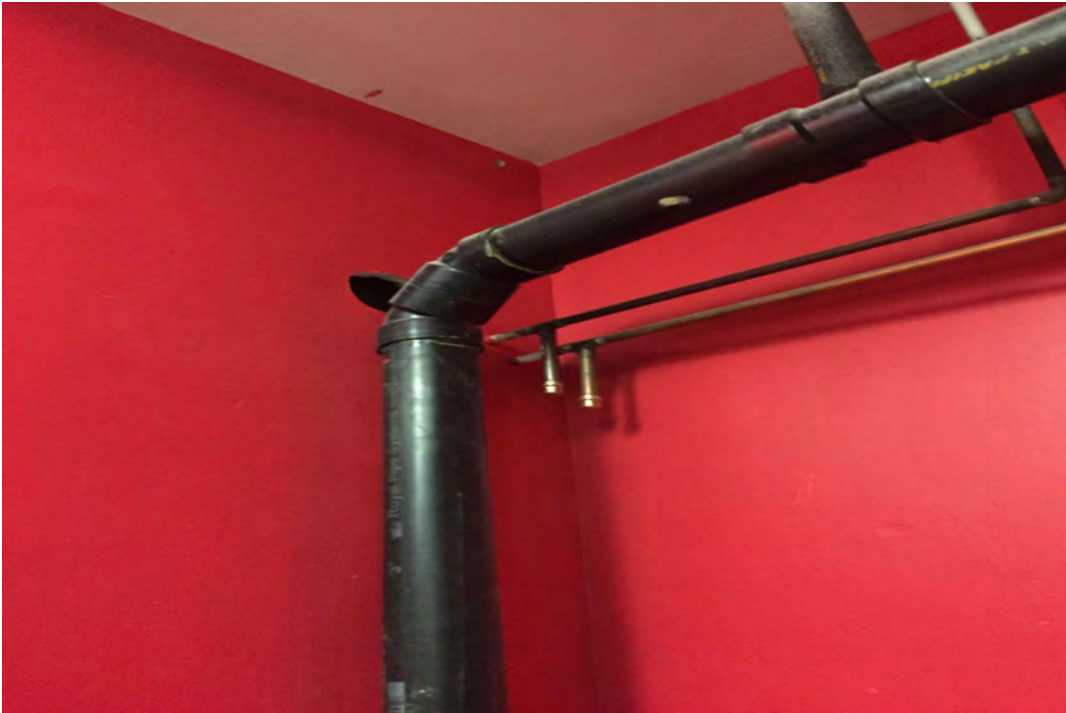


Photo 32

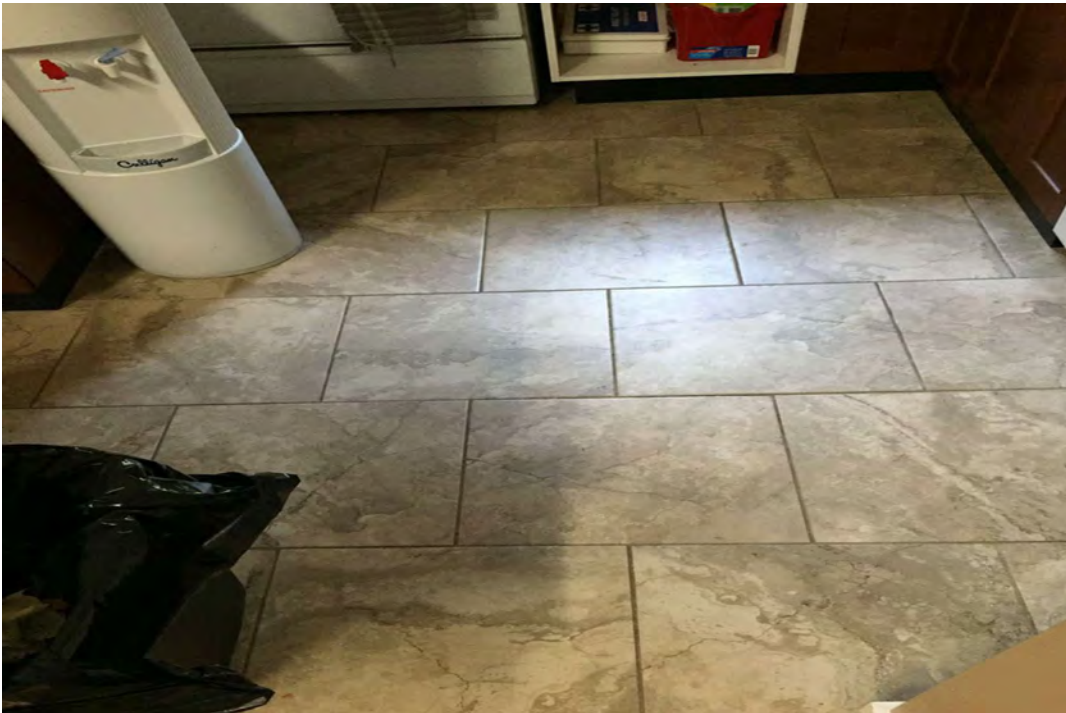


Photo 33

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 34



Photo 35

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 36



Photo 37

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 38



Photo 39

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 40



Photo 41

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 42



Photo 43

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 44

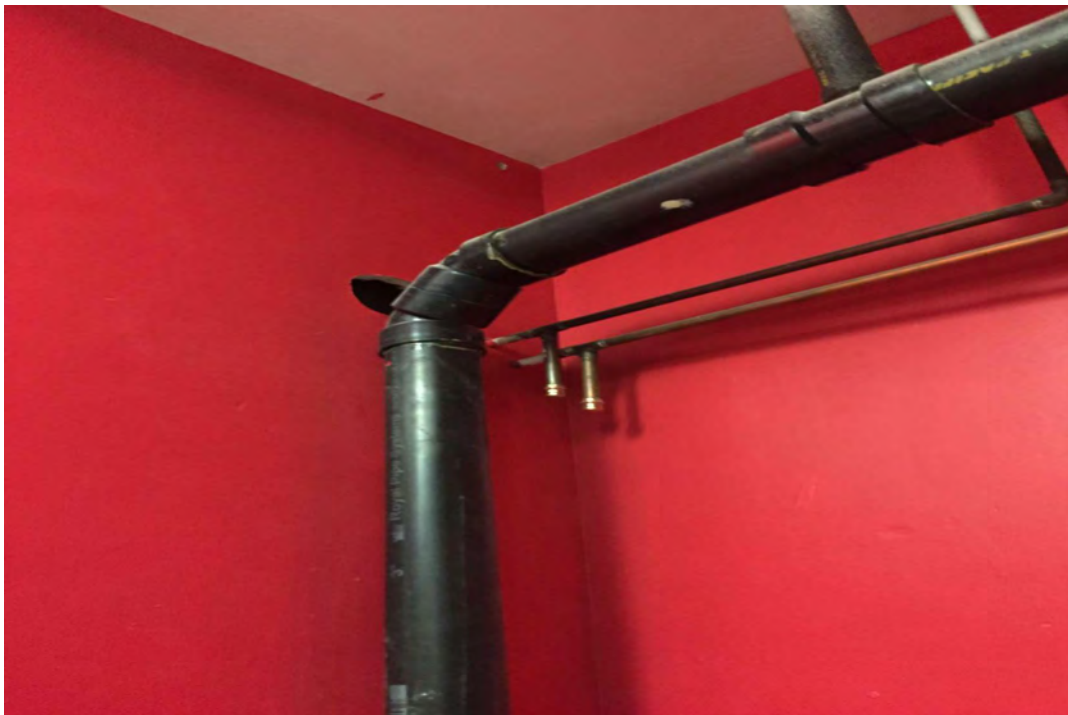


Photo 45

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 46



Photo 47

Cowichan Valley Regional District Malahat Fire Hall - Report Photos



Photo 48

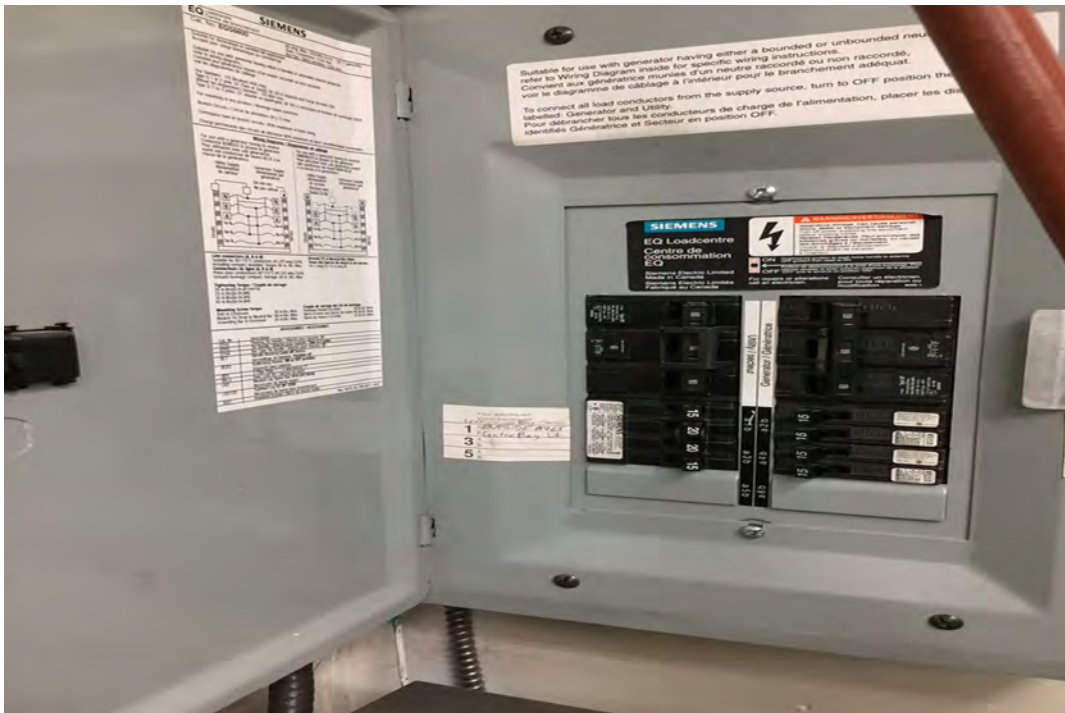


Photo 49

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 50



Photo 51

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 52



Photo 53

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 54



Photo 55

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 56

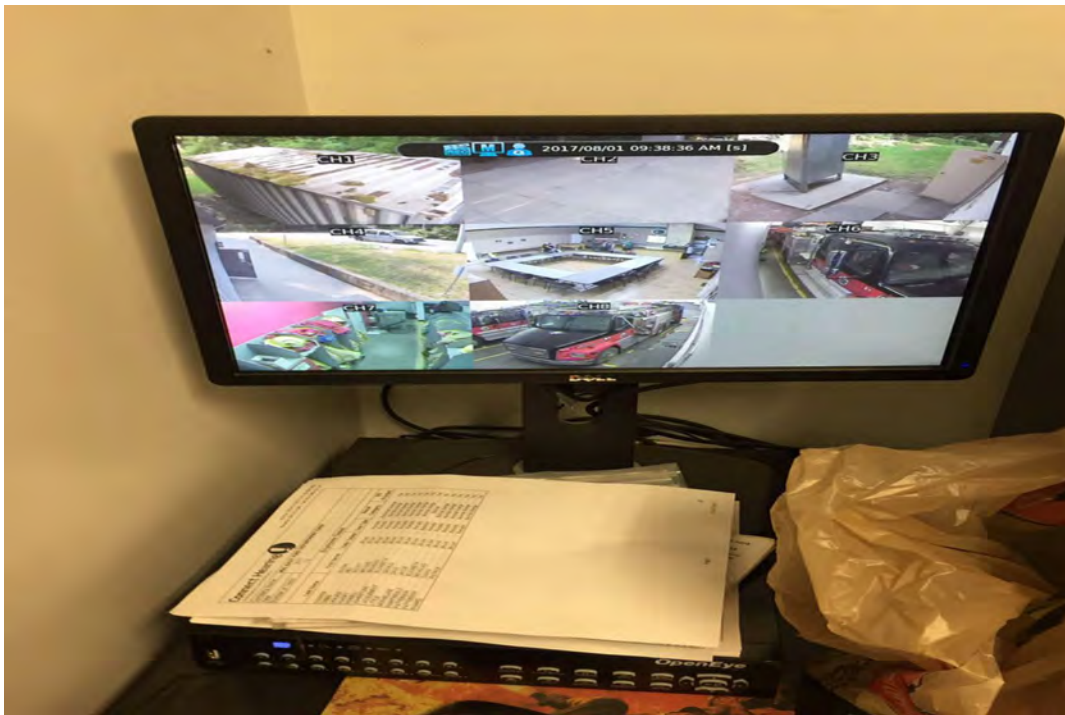


Photo 57

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 58



Photo 59

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 60



Photo 61

**Cowichan Valley Regional District
Malahat Fire Hall - Report Photos**



Photo 62



Photo 63

Cowichan Valley Regional District Malahat Fire Hall - Report Photos

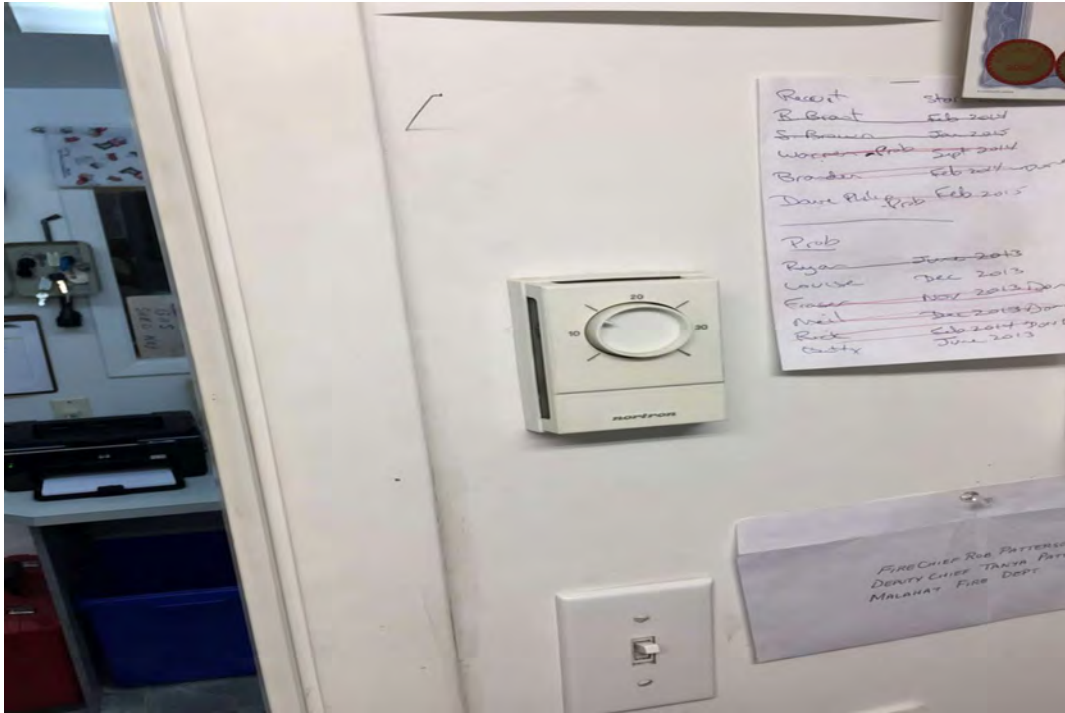


Photo 64



MORRISON HERSHFIELD

August 31, 2017

Mr. Austin Tokarek, MBA, CEA
Asset Coordinator (Energy Manager Associate)
Engineering Services Department
Cowichan Valley Regional District
175 Ingram Street, Duncan, BC V9L 1N8

Our Reference: 5170700.00; Phase 18

Dear Mr. Tokarek:

Re: Malahat Fire Hall – 935 Whittaker Road, Malahat, BC**Background**

As requested, the undersigned carried out a field review for seismic assessment of Malahat Fire Hall building at 935 Whittaker Road, Malahat, BC, on behalf of Morrison Hershfield (MH) on August 22, 2017.

Scope of Work

The primary scope of this assignment was to evaluate the building by a rapid non-invasive screening method according to the “NRC-CNRC Manual for Screening of Building for Seismic Investigation”, and to provide a letter report with recommendations for further detailed seismic evaluation.

Observation

The building is a two story structure which has been modified since its original construction. According to the available information, the original building with its arched roof and two floors was built in 1978. The building was then expanded 1993 with a one story wood framed addition in front of the original building. However, since no architectural or construction drawings were available we are not certain about these dates. We are also not certain if the arched structure was built new specifically for this building or an older structure brought from another site and reutilized for this building.

No structural drawings were available. Therefore, we do not know the composition of arched roof. The ground floor is concrete slab on grade. The suspended floor and the front roof are of wood construction.

Based on our non-invasive visual review, we can confirm the structure did not show visible signs of distress, such as severe cracking or excessive deflections.

No geotechnical information on the site soil condition was available. Therefore, we have chosen "Unknown Soil" for soil condition.

Methodology

Seismic performance of a structure will depend on the severity and duration of the ground motion, soil condition, building irregularities, type and materials of construction. The seismic screening forms used for this assessment outlines the methodology for this evaluation. Briefly, we have considered the factors such as the building age, soil condition, materials of construction, the lateral load resisting elements, building irregularities, potential hazards to the occupants from falling objects and non-structural components such as canopies, lights, non-safety glass and storage cabinets.

We have made certain assumptions for our evaluation. First, we have assumed that the walls are adequately anchored to the foundation, which is a reasonable assumption for such constructions at that time. Secondly, we have assumed that the older part of the building is well connected to the newer part such that they will not cause damage by pounding against each other during a code level earthquake.

The above information was used to determine a Seismic Priority Index (SPI) which is made up of two components. First, the Structural Index (SI), relating to the possible failure/damage of the structure. Secondly, the Non-structural Index (NSI) for failure/damage of the non-structural components. The final score is the addition of the two components, $SPI = SI + NSI$.

Based on the SPI score, the structure is ranked low ($SPI < 10$), medium ($10 < SPI < 20$) or high priority ($SPI > 20$) for further detailed investigation. The SPI score over 30 is considered potentially hazardous.

Discussion

Refer to the seismic screening forms (3 sheets) completed with the properties discussed above. The Seismic Priority Index (SPI) was determined to be 15 which indicates medium priority for further detailed evaluation. Since the "SI index" is below 10, the structure will likely survive a code level seismic event with some damage.

The SPI score includes a non-structural index (NSI) which is an indication of hazard due to objects falling on to the occupants. The NSI index is 7. Several tall cabinets/lockers in building were not anchored to wall. The non-structural hazards can be mitigated by anchoring object that may topple during an earthquake.

As explained in the manual, "It should be obvious that no rapid examination can provide highly reliable estimates of seismic performance, and the screening procedure is simply intended to identify those buildings where reasonable doubts may exist. It should be recognized that any simple screening procedure is limited." Therefore, if the structural system is unclear during a rapid screening procedure, it would be wise to err on the side of requiring the building to undergo further detailed investigation.

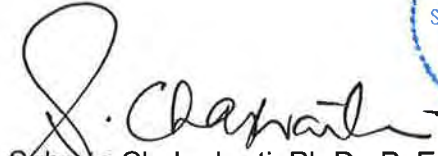


In this building the construction of the arched roof and the site soil classification are both unknown.

Recommendation

We recommend further detailed evaluation of the structural and non-structural components of the building.

Yours truly,
Morrison Hershfield Limited



Subrata Chakrabarti, Ph.D., P. Eng.
Senior Structural Engineer



AUG 31 2017

Chris Raudoy, B.Arch.Sci, LEED AP
Principal, Building Science Consultant

SEISMIC SCREENING

825

BUILDING #/Name: Malahat Fire Rescue Hall
935 Whittaker Road, Malahat, BC**PROJECT:** Malahat Fire Rescue Hall

No. of storeys:	2	Total Floor Area (m2):	450	Year Built:	1978
Primary Use:	Fire Hall	Heritage:	n	Modified:	1993 Front addition
Inspector:	SC	Date:	22-Aug-17	MH Project No.:	5160700.00 Ph-13

Methodology:

The building has been evaluated by a rapid screening method according to the "NRC-CNRC Manual for Screening of Building for Seismic Investigation". We have reviewed the building age, materials of construction, lateral load resisting elements, building irregularities, soft stories, short columns, pounding hazards from adjacent structures, potential hazards to the building occupants from falling objects and non-structural components such as parapets, veneer, canopies, ceiling, lights and decorative fixtures, non-safety glass and storage cabinets.

The above information allows us to determine a Seismic Priority Index (SPI) which is made up of two components:

1. Structural Index (SI) relating to the damage or possible failure of the structure.
2. Non-structural Index (NSI) for failure/damage of the non-structural components.

The final score SPI is the addition of the two components, $SPI = SI + NSI$.

For ranking purposes, buildings with SPI scores of less than 10 would indicate a low priority, from 10 - 20 medium priority, and over 20 high priority, warranting more detailed seismic investigation. A SPI score over 30 is be considered as potentially hazardous.

See attached Seismic Screening Form for results of our review.

The method used is useful for the initial screening, although the National Building Code (NBC) has been revised several times since the manual was published in 1992. NBCC still recommends using the manual for such type of screening. It should be observed that the magnitude of the design earthquake is still the same as it was in 1990, however, the code now considers earthquakes occurring more frequently. The risks have not appreciably changed but the perception has. Certain buildings are now designed for higher lateral loads and there are new restrictions on the height and configuration of the buildings for certain types of construction. These factors should be considered as part of the next level of detailed investigation.

Estimated Cost

Recommend detailed evaluation of the structural and non-structural components, including the exterior stairs.

Engineering:	Assessment - structural and non-structural components	\$30,000.00
Construction:	Structural - Shear walls/Bracing, precast & foundation work	
	Architectural - Refinishing of areas affected by structural work	
	Mech/Elect - Redesign/rerouting of HVAC and lighting	
	Non-Structural - Bracing of pipes, conduits, ducts, ceiling & lights	
	Total	\$30,000.00

The estimates shown are preliminary. Further seismic evaluations, engineering and construction drawings would be necessary for the final estimate.

**MORRISON HERSHFIELD**

Date: **22-Aug-17** 826 Building #/Name: Malahat Fire Rescue Hall

Project: Malahat Fire Rescue Hall

SEISMIC SCREENING FORM Version 1.1

ITEM No.:

Address: 935 Whittaker Road, Malahat, BC

Postal Code: V0R 2L0

No. of storeys: 2

Total Floor Area: 450 m2

Year Built: 1978

Design NBC: 1975

Primary use (see list on p. 2):

Fire Hall

Heritage Designation:

n

Inspector: SC

Date: 22-Aug-17

Checked by: LFS



TYPE OF STRUCTURE (Shown in red)		BM	BUILDING IRREGULARITIES (Shown in red)	
Wood	WLF Wood Light Frame	90	1. Vertical Irregularity	Abrupt changes in plan dimensions over height (e.g. setback or building on hill)
	WPB Wood, Post and Beam			
Steel	SMF Steel Moment Frame	90	2. Horizontal Irregularity (Torsion)	Irregular building shapes such as "L", "V", "E", "T", eccentric stiffness in plan (e.g. shear wall on only one side of building)
	SBF Steel Braced Frame			
	SLF Steel Light Frame			
	SCW Steel Frame with Concrete Shear Walls			
	SIW Steel Frame with infill Masonry			
Concrete	CMF Concrete Moment Frame	85	3. Short Concrete Columns	Short columns restrained by partial storey height walls (structural or infill) or deep spandrels
	CSW Concrete Shear Walls			
	CIW Concrete Frame with Infill Masonry Shear Walls			
	PCF Precast Concrete Frame			
	PCW Precast Concrete Walls			
Masonry	RML Reinforced Masonry Bearing Walls with Wood or Metal Deck Floors or Roofs	90	4. Soft Storey	Severe reduction of stiffness caused by discontinuous shear walls, openings, etc.
	RMC Reinforced Masonry Bearing Walls with Concrete Diaphragms			
	URM Unreinforced Masonry Bearing Wall Building			
			5. Pounding	Separation between buildings less than 20 Zv x no. of storeys (in mm)
			6. Major Modifications	Any change in function, use or addition which results in significant increase in loading or weight
			7. Deterioration	Structural elements are damaged, poor condition of building is apparent (corroded reinforcement or steel, rotted, wood, poor concrete or masonry)
			8. None	None of the irregularities listed above is present

NON - STRUCTURAL HAZARDS (High lighted or underlined)

F1 Falling Hazards to Life:

Exterior: Masonry chimneys, parapets, veneer or stone / precast panels, non-safety glass, or canopies over exits and walkways
 Interior: Heavy components; masonry partitions; non-safety glass in egress areas; **storage shelves/articles on the shelves which may collapse onto areas of human occupancy**

F2 Hazards to Continuous Operation of Special Buildings: Equipment or lifelines required for continuous operation of special facilities. The owner or authority should provide a list of critical items needed for continuing operations.

SEISMIC SCREENING FORM Version 1.1

SEISMIC PRIORITY INDEX: Circle appropriate value and enter each result on the right side. Use asterisk (*) with uncertain values

A	Seismicity	Design NBC	Effective Seismic Zone (Zv or Zv + 1 if Za > Zv)						CLEAR ALL	
			2	3	4	5	6		A =	
			Pre - 65	1.0	1.5	2.0	3.0		4.0	1.5
			65 - 84	1.0	1.0	1.3	1.5		2.0	
		Post - 85	1.0	1.0	1.0	1.0				

B	Soil Conditions	Design NBC	Soil Category						B =	
			Rock or Stiff Soil	Stiff Soil > 50 m	Soft Soil > 15 m	Very Soft or Liquefiable Soil	Unknown Soil		1.5	
			Pre - 65	1.0	1.3	1.5	2.0		1.5	
			Post - 65	1.0	1.0	1.0	1.5		1.5	

C	Type of Structure <small>(BM = Benchmark year, see p.1)</small>	Design NBC	Construction Type and Symbol (see p. 1)													C =		
			Wood		Steel				Concrete		Precast		Masonry Infill	Masonry				
			WLF	WPB	SLF	SMF	SBF	SCW	CMF	CSW	PCF	PCW	SIW, CIW	RML, RMC		URM		
			Pre - 70	1.2	2.0	1.0	1.2	1.5	2.0	2.5	2.0	2.5	2.0	3.0		2.5	3.5	1.2
			70 - BM	1.2	2.0	1.0	1.2	1.5	1.5	1.5	1.5	1.8	1.5	3.0		1.5	3.5	
		Post - BM	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	-					

D	Building Irregularities	Design NBC	1. Vertical	2. Horiz.	3. Short Concrete Columns	4. Soft Storey	5. Pounding	6. Modification	7. Deterioration	8. None		D = product of circled Numbers (Max of 4.0) =	
			Pre - 70	1.3 <input type="checkbox"/>	1.5 <input type="checkbox"/>	1.5 <input type="checkbox"/>	2.0 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.3 <input type="checkbox"/>		1.0 <input type="checkbox"/>	
			Post - 70	1.3 <input checked="" type="checkbox"/>	1.5 <input checked="" type="checkbox"/>	1.5 <input type="checkbox"/>	1.5 <input type="checkbox"/>	1.3 <input type="checkbox"/>	1.0 <input type="checkbox"/>	1.3 <input type="checkbox"/>		1.0 <input type="checkbox"/>	2.0

E	Building Importance	Design NBC	Low Occupancy N < 10	Normal Occupancy N = 10 - 300	School, or High Occupancy N = 301 - 3000	Post Disaster, or Very High Occup. N > 3000	Special Operational Requirements		E =	
			Pre - 70	0.7	1.0	1.5	2.0		3.0	
			Post - 70	0.7	1.0	1.2	1.5		2.0	1.5

N = Occupied Area x Occupancy Density x Duration Factor* = x x = 0

Primary Use:	Occupancy Density Persons/m ²	Average Weekly Hours of Human Occupancy	
Assembly	1.0	5-50	*Duration Factor is equal to the average weekly hours of Human occupancy divided by 100, not greater than 1.0
Mercantile, Personal service, Offices, Institutional, Manufacturing	0.2	50-80	
Residential	0.1	50-60	
Storage	0.01-0.02	100	

SI	STRUCTURAL INDEX = A*B*C*D*E ----->	SI =	8
-----------	-------------------------------------	------	----------

F	NON-STRUCTURAL HAZARDS		Description (see p. 1)	None	Yes	Yes*							F = max (F1, F2)
	F1	Falling Hazards to Life	Pre-70 NBC	1	3	6							3.0
			Post-70 NBC	1	2	3							
F2	Hazards to Vital Operations	Any Year	1	3	6								

*applies only if one or more of the following descriptors on page 1 are circled: SMF, CMF, soft storey, torsion

NSI	NON STRUCTURAL INDEX = B*E*F ----->	NSI =	6.8
------------	-------------------------------------	-------	------------

SPI	SEISMIC PRIORITY INDEX = SI+NSI ----->	SPI =	15
------------	--	-------	-----------

Comments: The SPI score of 15 indicates medium priority for further seismic evaluation. Since no drawings or reports were made available, we have made reasonable assumptions about the structural system and site soil condition. The safety may be improved by addressing the non-structural risks. Recommend review to reduce/eliminate of the risk of injury from collapse or failure of the non-structural components. Recommend upgrading of the exterior stairs.

Appendix A

A – 14 Honeymoon Bay Fire Hall

Honeymoon Bay Fire Hall



Cowichan Valley Regional District

MH Project No. 5170700.00

November 2017



Cowichan Valley
Regional District
175 Ingram Street
Duncan, BC V9L 1N8



MORRISON HERSHFIELD

**Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC**

PROPERTY DESCRIPTION

Honeymoon Bay Fire Hall was constructed in 1986. The facility is comprised of a single storey, wood frame structure containing a lounge, kitchen, washrooms and offices on one side of the building. Apparatus bays, housing the firetrucks and emergency response equipment, are located on the other side of the building. Refer to Photo 01.

PROPERTY STATISTICS

Gross Floor Area: 4,139 sf.

Replacement Value: \$1,411,399

Target FCI: 0.050

Current FCI: 0.023

REPORT OVERVIEW

We identified Priority 1 - Immediate expenditures totalling \$32,000 as follows:

- Row 35 - D509002 Emergency Lighting and Power - \$25,000
- Row 37 - P100001 Code Review - \$4,000
- Row 38 - P100001 Seismic Review - \$4,000

The following provides an overview of the visual seismic, building code, accessibility and energy efficiency reviews completed.

Seismic Review

Seismic work completed to date: None
 Recommendations: Perform seismic review to determine the suitability of the structure to function as a post-disaster building.

Building Code Review

Built under what code: 1980 National Building Code
 Deficiencies observed: It is recommended the interior fire separations between the apparatus bays and the adjacent spaces be reviewed. A minimum 1.5 hour separation is recommended to meet current code requirements.

Accessibility Review

Access into building: None
 Access throughout building: Some
 Access to washrooms: Yes
 Recommendations: The building does not meet the requirements of an accessible building per the British Columbia Building Code. Spatial reconfigurations are needed to create a conforming facility.

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC**

We identified recommendations of approximately \$90,000 over the next five years. The following is a summary of the major projects (over \$10,000) we believe will be required the next five years, and elements whose condition is unknown and/or where further investigation is recommended:

- Row 11 - B203004 Overhead Garage Doors - \$37,000
- Row 20 - D303002 Residential Unit (Heat Pumps) - \$10,000
- Row 35 - D509002 Emergency Lighting and Power - \$25,000

PROJECT TEAM

The visual reviews were completed on July 21, 2017 by Jordan Bowie of MH. We began with an interview with Raymond Wear, Fire Chief. During our review of the building, we were accompanied by Mr. Wear, who provided access to a sampling of representative areas of the facility, as requested.

Chris Raudoy of Morrison Hershfield reviewed the report for technical content and for compliance with the contract requirements.

REFERENCE DOCUMENTS/INFORMATION

We reviewed the following documents and selected drawings for general background and to inform ourselves about the layout and intended construction:

- Custom Services Custom Valuation by RMS, dated June 25, 2013

This report should be reviewed in conjunction with the Objectives, Terms of Reference, Limitations, and Methodology described in the main body of the report.

**Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC**

We recommend budgeting for the following 1 – Immediate, 2 - Restore Functionality, 2b - Exceeded Service Life and 3 - Future Renewal projects by year as follows:

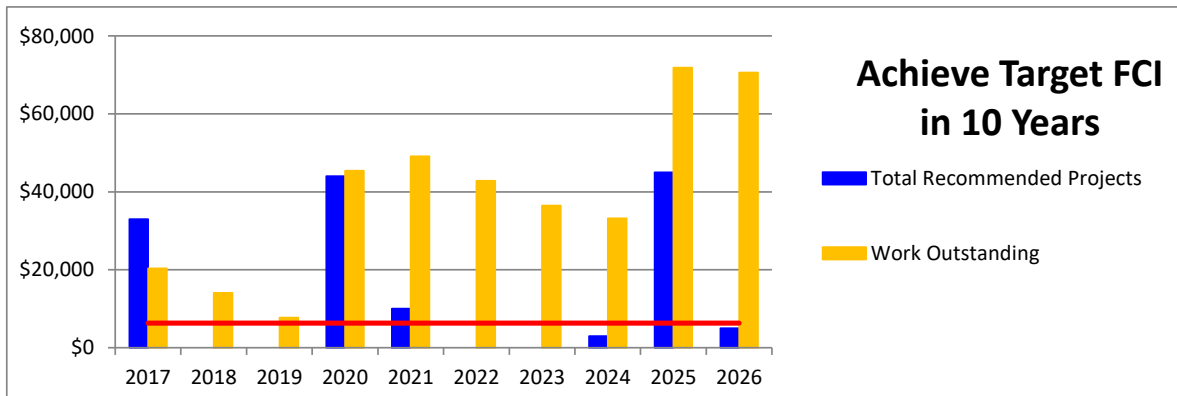
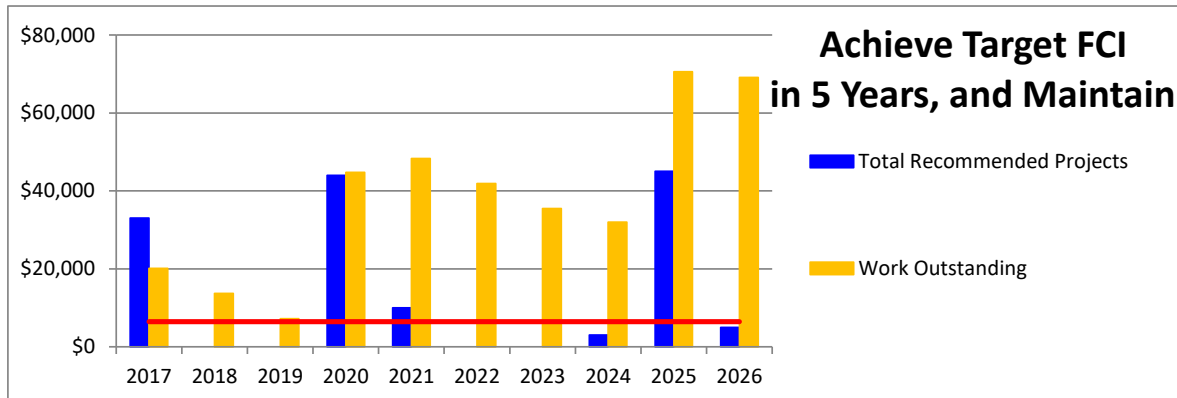
Priority	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1 – Immediate	33,000	0	0	0	0	0	0	0	0	0
2 - Restore Functionality	0	0	0	0	0	0	0	0	0	0
2b - Exceeded Service Life	0	0	0	0	0	0	0	0	0	0
3 - Future Renewal	0	0	0	44,000	10,000	0	0	3,000	45,000	5,000
Total in 2017 dollars	33,000	0	0	44,000	10,000	0	0	3,000	45,000	5,000

Minimum Funding to Achieve and Maintain Target FCI within 5 years: \$6,443

Work outstanding	20,114	13,671	7,228	44,785	48,342	41,899	35,456	32,013	70,570	69,127
------------------	--------	--------	-------	--------	--------	--------	--------	--------	--------	--------

Minimum Funding to Achieve Target FCI within 10 years: \$6,312

Work outstanding	20,376	14,065	7,753	45,441	49,129	42,817	36,505	33,194	71,882	70,570
------------------	--------	--------	-------	--------	--------	--------	--------	--------	--------	--------



Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	Bldg Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA				RECOMMENDATION			OPINION OF PROBABLE COST													
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr New or Last Major Action	Age in 2017	Assessment Date	Assessed By	Typical Life Cycle or Action Interval	E.L. Time Remaining to EOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Conting.	Contingency	5% Tax	Total to 2017 Dollars		
1	Honeymoon Bay Fire Hall	10032 South Shore Road, Honeymoon Bay, BC	A Substructure	A10 Foundations	A1010 Standard Foundation	A101001 Wall Foundations	Underground/ Foundations	02	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of some above-grade foundation wall on some elevations.	4	5	1986	31	21-Jul-17	MH	75	44	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No										
2	Honeymoon Bay Fire Hall	10033 South Shore Road, Honeymoon Bay, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103001 Standard Slab on Grade	Throughout Building At-Grade/ Slab-on-Grade	03	The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	4	5	1986	31	21-Jul-17	MH	75	44	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No										
3	Honeymoon Bay Fire Hall	10034 South Shore Road, Honeymoon Bay, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.		4	1986	31	21-Jul-17	MH	5	2	Periodic camera inspection and isolated repairs as required.	Study	3 - Future Renewal	No	N/A	No	N/A	1	\$2,000	LS	\$2,000	0%	0%	5%	\$3,000		
4	Honeymoon Bay Fire Hall	10035 South Shore Road, Honeymoon Bay, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.		4	1986	31	21-Jul-17	MH	75	44	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Not Applicable	Not Applicable	N/A	N/A	No	No										
5	Honeymoon Bay Fire Hall	10036 South Shore Road, Honeymoon Bay, BC	B Shell	B10 Superstructure	B10 Superstructure	B10 Superstructure	Throughout Building/ General Superstructure	x	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage. Staining observed on the underside of the roof sheathing (plywood) was a result of the previous roof leaking (roof replaced in 2015 - no leaks reported since that time).	4	5	1986	31	21-Jul-17	MH	75	29	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable	Yes	Yes	Yes	No										
6	Honeymoon Bay Fire Hall	10038 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2010 Exterior Walls	B201001 Exterior Walls/ Metal Cladding	Exterior Walls/ Metal Cladding	04/05	Prefinished corrugated metal cladding on the exterior walls of the building. A small amount of corrosion was observed at the base of the walls where panels are in contact with the concrete foundation wall. Some fasteners were noted to have backed-out of the cladding.	4	5	1986	31	21-Jul-17	MH	50	19	Replace metal siding at end of service life. Aside from touch-up painting where corroded, the panels will likely withstand moisture contact for their intended service life. Replace screws with worn-out washers and re-seat screws where backed-out. The cost of this work is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No										
7	Honeymoon Bay Fire Hall	10039 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2010 Exterior Walls	B201008 Exterior Soffits	Roof Eaves/ Metal Soffit	06	Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves and the entrance canopy. A small section of soffit was dislodged at the rear of the east elevation.	4	5	1986	31	21-Jul-17	MH	50	19	Replace soffit at end of service life, in conjunction with the metal siding replacement. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No										
8	Honeymoon Bay Fire Hall	10040 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2010 Exterior Walls	B201010 Exterior Coatings	Exterior Walls/ Accent Cladding	07	The metal fascia, wood post and exterior steel doors have been re-painted to refresh the appearance of the building.	4	5	2017	0	21-Jul-17	MH	10	10	Re-paint the exterior of the CMU once the paint finish peels or wears. Seal the penetrations as part of the maintenance budget.	Contingency	3 - Future Renewal	Yes	Yes	No	No	1	\$5,000	LS	\$5,000	0%	0%	0%	\$5,000		
9	Honeymoon Bay Fire Hall	10041 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2020 Exterior Windows	B202001 Windows	Exterior Walls/ Aluminum Windows	08	Windows are aluminum framed with double paned insulated glazing units (IGUs) with fixed and slider sashes. The seals on some IGUs have failed, resulting in condensation between the panes of glass.	3	3	1986	31	21-Jul-17	MH	35	4	Replace IGUs as-needed (maintenance). The windows are generally in fair condition and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	Yes	Yes	No	No	5	\$1,000	EA	\$5,000	10%	15%	5%	\$7,000		
10	Honeymoon Bay Fire Hall	10042 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2030 Exterior Doors	B203001 Exterior Metal Doors	Exterior Walls/ Egress Doors	09	Single and double outgoing steel doors are present at points of building egress. The doors were repainted in 2017.	4	5	1986	31	21-Jul-17	MH	40	9	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	3 - Future Renewal	Yes	Yes	No	No	5	\$1,200	EA	\$6,000	0%	15%	5%	\$8,000		
11	Honeymoon Bay Fire Hall	10043 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B2030 Exterior Doors	B203004 Overhead Garage Doors	Exterior Walls/ Apparatus Bay Doors	10/11	Three painted steel overhead doors with single glazing for natural lighting (front two doors with glazing only). The doors have been provided with automatic openers.	3	4	1986	31	21-Jul-17	MH	35	4	Replace overhead garage doors at end of service life.	Replacement	3 - Future Renewal	Yes	Yes	Yes	No	3	\$10,000	EA	\$30,000	0%	15%	5%	\$37,000		
12	Honeymoon Bay Fire Hall	10044 South Shore Road, Honeymoon Bay, BC	B Shell	B30 Roofing	B310 Roof Coverings	B310002 Slope Roof	Roofs/ Metal Panels	12	The sloped roofs are clad with prefinished, standing seam metal roofing panels.	4	5	2015	2	21-Jul-17	MH	40	38	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No										
13	Honeymoon Bay Fire Hall	10046 South Shore Road, Honeymoon Bay, BC	B Shell	B20 Enclosure	B30 Roofing	B310 Roof Coverings	Roof Eaves/ Eaves Troughs	05	Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roofs. It is our understanding that the troughs were replaced in conjunction with the roof.	4	5	2015	2	21-Jul-17	MH	20	18	Replace eaves troughs and downspouts at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No										
14	Honeymoon Bay Fire Hall	10047 South Shore Road, Honeymoon Bay, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Throughout Building/ Interior Doors	13	Original wood doors in steel frames are present throughout the building at offices, service rooms and bathrooms.	4	5	1986	31	21-Jul-17	MH	50	19	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No										
15	Honeymoon Bay Fire Hall	10048 South Shore Road, Honeymoon Bay, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	14/15	Two washrooms are present in the building. The standard equipment includes toilets, a urinal, sinks in residential-type vanities and steel stall dividers. Some plumbing fixtures have been updated since original construction. Delamination was observed on the vertical face of one of the vanities and a crack was noted on the surface of the other.	3	5	1986	31	21-Jul-17	MH	40	9	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their respective ages, the allowance included in the Capital Plan corresponds to the Fire Hall's discretionary renovations.	Replacement	3 - Future Renewal	Yes	Yes	No	No	2	\$4,000	LS	\$8,000	0%	0%	5%	\$9,000		
16	Honeymoon Bay Fire Hall	10049 South Shore Road, Honeymoon Bay, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Interior of Building/ Paint	16	The majority of the interior walls and ceilings are finished with painted gypsum board.	4	5	2014	3	21-Jul-17	MH	10	7	Repaint interior common walls and ceilings as-needed. An allowance for periodic painting has been included in the Capital Plan.	Contingency	4b - Discretionary Aesthetic	Yes	Yes	No	No	1	\$15,000	LS	\$15,000	0%	0%	0%	\$15,000		
17	Honeymoon Bay Fire Hall	10050 South Shore Road, Honeymoon Bay, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301099 Other Wall Finishes	Interior Walls/ Wood	17	Some walls within the lounge are finished with stained tongue and groove wood board.	4	5	1986	31	21-Jul-17	MH	75	44	Replace wood boards at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No										
18	Honeymoon Bay Fire Hall	10051 South Shore Road, Honeymoon Bay, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302004 Resilient Floor Finishes	Throughout Interior of Building/ Original Flooring	17	Vinyl sheet flooring is present throughout the building (excluding the apparatus bays).	4	5	1986	31	21-Jul-17	MH	50	19	Replace flooring at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No										
19	Honeymoon Bay Fire Hall	10052 South Shore Road, Honeymoon Bay, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103008 Counters	Kitchen/ Millwork and Cabinetry	18	A residential-style kitchen is present. Equipment provided includes laminate counter tops and wood veneer cabinets, a stainless steel sink, refrigerator, a microwave, an electric range/oven.	4	5	1986	31	21-Jul-17	MH	40	9	Renovate the kitchen millwork at end of service life. Note that appliances are not considered as base building equipment.	Contingency	3 - Future Renewal	No	No	No	No	1	\$5,000	LS	\$5,000	0%	0%	0%	\$5,000		

2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	Bldg Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA				RECOMMENDATION				OPINION OF PROBABLE COST										
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Age in 2017	Assessment Date	Assessed By	Typical Life Cycle or Action Interval	Est. Time Remaining to EO or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars	
20	Honeymoon Bay Fire Hall	10053 South Shore Road, Honeymoon Bay, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304001 Air Distribution, Heating and Cooling	Exterior of Building/ Heat Pumps	19-21	Two MX2-3830NA Mitsubishi heat pumps with dedicated digital thermostats condition the interior spaces (excluding the apparatus bays). The age of the heat pumps has been approximated.	4	5	2012	5	21-Jul-17	MH	10	5	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units.	Replacement	3 - Future Renewal	Yes	No	No	No	2	\$4,000	EA	\$8,000	0%	15%	5%	\$10,000
21	Honeymoon Bay Fire Hall	10054 South Shore Road, Honeymoon Bay, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305002 Unit Heaters	Apparatus Bay/ Electric Forced Air Heaters	22	Electric fan heaters provide heating in the apparatus bays.	3	5	1986	31	21-Jul-17	MH	40	9	Replace heaters as unit failure occurs.	Replacement	3 - Future Renewal	Yes	No	No	No	2	\$1,000	EA	\$2,000	0%	15%	5%	\$3,000
22	Honeymoon Bay Fire Hall	10055 South Shore Road, Honeymoon Bay, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems	Washrooms/ Exhaust Fans	23	Fractional horsepower exhaust fans used to exhaust air in washroom and in the main lounge.	4	5	2015	2	21-Jul-17	MH	30	28	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
23	Honeymoon Bay Fire Hall	10056 South Shore Road, Honeymoon Bay, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems - Apparatus Bay	Apparatus Bay/ Exhaust System	24	The truck exhaust pipes connect to ducting that is exhausted from the building by a high-capacity ventilator.	4	5	2012	5	21-Jul-17	MH	25	20	Replace or overhaul the exhaust fan at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	Yes	No								
24	Honeymoon Bay Fire Hall	10057 South Shore Road, Honeymoon Bay, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	x	Water for domestic service is provided by the CVRD. Piping is primarily of copper.	3	5	1986	31	21-Jul-17	MH	40	9	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs.	Contingency	3 - Future Renewal	Yes	Yes	No	No	1	\$20,000	LS	\$20,000	0%	0%	0%	\$20,000
25	Honeymoon Bay Fire Hall	10058 South Shore Road, Honeymoon Bay, BC	D Services	D20 Plumbing	D2030 Sanitary Waste	D203001 Sanitary Waste	Throughout Interior of Building/ Sanitary Piping	25	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field (pumped approximately 5 years ago)	3	5	1986	31	21-Jul-17	MH	60	29	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
26	Honeymoon Bay Fire Hall	10059 South Shore Road, Honeymoon Bay, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment - Tanks	Service Room/ Hot Water Heating Tank	26	A 284 L, 4500 W John Wood domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	3	4	2012	5	21-Jul-17	MH	10	5	Replace domestic hot water heating tank prior to end of expected service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
27	Honeymoon Bay Fire Hall	10060 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5010 Electrical Services and Distribution	D501003 Main & Secondary Switchgear	Office/ Main Circuit Breaker	27-29	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 400A circuit breaker panel.	3	5	1986	31	21-Jul-17	MH	50	19	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	Yes								
28	Honeymoon Bay Fire Hall	10061 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	x	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets.	4	5	1986	31	21-Jul-17	MH	28	60	29	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	Yes							
29	Honeymoon Bay Fire Hall	10062 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures (LED)	30	The lighting within the lounge and adjacent interior spaces is LED lighting. Ceiling fans with integral lighting are provided in the lounge.	4	5	2015	2	21-Jul-17	MH	25	23	Replace fixtures at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	Yes								
30	Honeymoon Bay Fire Hall	10063 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures (Fluorescent)	31	The lighting within the apparatus bays and Chief's office is comprised of T8 fluorescent tube lighting.	3	5	2007	10	21-Jul-17	MH	25	15	Replace fixtures at end of service life. Upgrade to higher efficient lighting at the time of replacement. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	Yes								
31	Honeymoon Bay Fire Hall	10064 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	32	The exterior lighting is a combination of high-intensity discharge (HID) and LED replacement fixtures. The age of the fixtures has been approximated.	4	5	2015	2	21-Jul-17	MH	25	23	Replace the exterior fixtures as failure occurs. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
32	Honeymoon Bay Fire Hall	10065 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5030 Communications and Security	D503099 Other Communications and Alarm Systems	Throughout Interior of Building/ Infrastructure Cabling	33	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	4	5	2005	12	21-Jul-17	MH	25	13	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	Partial	No								
33	Honeymoon Bay Fire Hall	10066 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 Security Systems	Building Entrances/ Building Alarm	34/35	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	4	5	2005	12	21-Jul-17	MH	20	8	Replace security system at end of service life.	Replacement	3 - Future Renewal	No	No	No	Yes	1	\$3,000	LS	\$3,000	0%	0%	0%	\$3,000
34	Honeymoon Bay Fire Hall	10067 South Shore Road, Honeymoon Bay, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305005 Electrical Heating	Throughout Building/ Electric Baseboard Heaters	36/37	Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating.	4	5	2005	12	21-Jul-17	MH	30	18	Upgrades to select equipment has been undertaken. Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	Yes								
35	Honeymoon Bay Fire Hall	10068 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	38	A Honda EG 5000X portable diesel generator is present in the apparatus bay. The generator is to be replaced with a 30 kW pad-mounted unit, with a propane cylinder and transfer switch.	2	3	1986	31	21-Jul-17	MH	30	1	Replace the emergency generator with equipment suited for this facility.	Replacement	1 - Immediate	No	Yes	No	No	1	\$25,000	LS	\$25,000	0%	0%	0%	\$25,000
36	Honeymoon Bay Fire Hall	10069 South Shore Road, Honeymoon Bay, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting and Exit Signs	39	Emergency lighting and signs located in some rooms throughout the facility. Age of equipment has been approximated.	4	5	2015	2	21-Jul-17	MH	20	18	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
37	Honeymoon Bay Fire Hall	10070 South Shore Road, Honeymoon Bay, BC	P Professional Services	P100001 Code Review	P100001 Code Review	P100001 Code Review	Further Study - Code Review	x	For conducting a building code review of the facility. Certain fire and life safety elements are not included as part of the base building equipment and these should be identified and installed as soon as possible.		3	1986	31	21-Jul-17	MH	99	0	Conduct building code review.	Study	1 - Immediate	No	No	Yes	No	1	\$3,500	LS	\$3,500	0%	0%	5%	\$4,000
38	Honeymoon Bay Fire Hall	10071 South Shore Road, Honeymoon Bay, BC	P Professional Services	P100001 Seismic Review	P100001 Seismic Review	P100001 Seismic Review	Further Study - Code Review	x	For conducting a seismic screening of the building. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).		3	1986	31	21-Jul-17	MH	99	1	Conduct seismic screening.	Study	1 - Immediate	No	No	Yes	No	1	\$3,500	LS	\$3,500	0%	0%	5%	\$4,000

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$33,000	\$3,000	\$0	\$44,000	\$10,000	\$0	\$15,000	\$3,000	\$45,000	\$5,000
1	Honeymoon Bay Fire Hall	A101001 Wall Foundations	Underground/ Foundations	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of some above-grade foundation wall on some elevations.	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
2	Honeymoon Bay Fire Hall	A103001 Standard Slab on Grade	Throughout Building At-Grade/ Slab-on-Grade	The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
3	Honeymoon Bay Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	Periodic camera inspection and isolated repairs as required.	Study	3 - Future Renewal	\$3,000	\$3,000									
4	Honeymoon Bay Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Not Applicable	Not Applicable											
5	Honeymoon Bay Fire Hall	B10 Superstructure	Throughout Building/ General Superstructure	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage. Staining observed on the underside of the roof sheathing (plywood) was a result of the previous roof leaking (roof replaced in 2015 - no leaks reported since that time).	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable											
6	Honeymoon Bay Fire Hall	B201001 Exterior Walls - Metal Cladding	Exterior Walls/ Metal Cladding	Prefinished corrugated metal cladding on the exterior walls of the building. A small amount of corrosion was observed at the base of the walls where panels are in contact with the concrete foundation wall. Some fasteners were noted to have backed-out of the cladding.	Replace metal siding at end of service life. Aside from touch-up painting where corroded, the panels will likely withstand moisture contact for their intended service life. Replace screws with worn-out washers and re-seat screws where backed-out. The cost of this work is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
7	Honeymoon Bay Fire Hall	B201008 Exterior Soffits	Roof Eaves/ Metal Soffit	Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves and the entrance canopy. A small section of soffit was dislodged at the rear of the east elevation.	Replace soffit at end of service life, in conjunction with the metal siding replacement. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
8	Honeymoon Bay Fire Hall	B201010 Exterior Coatings	Exterior Walls/ Accent Cladding	The metal fascia, wood post and exterior steel doors have been re-painted to refresh the appearance of the building.	Re-paint the exterior of the CMU once the paint finish peels or wears. Seal the penetrations as part of the maintenance budget.	Contingency	3 - Future Renewal	\$5,000										\$5,000
9	Honeymoon Bay Fire Hall	B202001 Windows	Exterior Walls/ Aluminum Windows	Windows are aluminum framed with double paned insulated glazing units (IGUs) with fixed and slider sashes. The seals on some IGUs have failed, resulting in condensation between the panes of glass.	Replace IGUs as-needed (maintenance). The windows are generally in fair condition and replacement would primarily satisfy energy performance needs.	Replacement	3 - Future Renewal	\$7,000			\$7,000							
10	Honeymoon Bay Fire Hall	B203001 Exterior Metal Doors	Exterior Walls/ Egress Doors	Single and double outswing steel doors are present at points of building egress. The doors were repainted in 2017.	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	3 - Future Renewal	\$8,000									\$8,000	

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$33,000	\$3,000	\$0	\$44,000	\$10,000	\$0	\$15,000	\$3,000	\$45,000	\$5,000
11	Honeymoon Bay Fire Hall	B203004 Overhead Garage Doors	Exterior Walls/ Apparatus Bay Doors	Three painted steel overhead doors with single glazing for natural lighting (front two doors with glazing only). The doors have been provided with automatic openers.	Replace overhead garage doors at end of service life.	Replacement	3 - Future Renewal	\$37,000				\$37,000						
12	Honeymoon Bay Fire Hall	B301002 Slope Roof	Roofs/ Metal Panels	The sloped roofs are clad with prefinished, standing seam metal roofing panels.	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
13	Honeymoon Bay Fire Hall	B310 Roof Coverings	Roof Eaves/ Eaves Troughs	Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roofs. It is our understanding that the troughs were replaced in conjunction with the roof.	Replace eaves troughs and downspouts at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
14	Honeymoon Bay Fire Hall	C102001 Standard Interior Doors	Throughout Building/ Interior Doors	Original wood doors in steel frames are present throughout the building at offices, service rooms and bathrooms.	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
15	Honeymoon Bay Fire Hall	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	Two washrooms are present in the building. The standard equipment includes toilets, a urinal, sinks in residential-type vanities and steel stall dividers. Some plumbing fixtures have been updated since original construction. Delamination was observed on the vertical face of one of the vanities and a crack was noted on the surface of the other.	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their respective ages, the allowance included in the Capital Plan corresponds to the Fire Hall's discretionary renovations.	Replacement	3 - Future Renewal	\$9,000									\$9,000	
16	Honeymoon Bay Fire Hall	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Interior of Building/ Paint	The majority of the interior walls and ceilings are finished with painted gypsum board.	Repaint interior common walls and ceilings as-needed. An allowance for periodic painting has been included in the Capital Plan.	Contingency	4b - Discretionary Aesthetic	\$15,000						\$15,000				
17	Honeymoon Bay Fire Hall	C301099 Other Wall Finishes	Interior Walls/ Wood	Some walls within the lounge are finished with stained tongue and groove wood board.	Replace wood boards at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
18	Honeymoon Bay Fire Hall	C302004 Resilient Floor Finishes	Throughout Interior of Building/ Original Flooring	Vinyl sheet flooring is present throughout the building (excluding the apparatus bays).	Replace flooring at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
19	Honeymoon Bay Fire Hall	C103008 Counters	Kitchen/ Millwork and Cabinetry	A residential-style kitchen is present. Equipment provided includes laminate counter tops and wood veneer cabinets, a stainless steel sink, refrigerator, a microwave, an electric range/oven.	Renovate the kitchen millwork at end of service life. Note that appliances are not considered as base building equipment.	Contingency	3 - Future Renewal	\$5,000									\$5,000	
20	Honeymoon Bay Fire Hall	D304001 Air Distribution, Heating and Cooling	Exterior of Building/ Heat Pumps	Two MXZ-3B30NA Mitsubishi heat pumps with dedicated digital thermostats condition the interior spaces (excluding the apparatus bays). The age of the heat pumps has been approximated.	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units.	Replacement	3 - Future Renewal	\$10,000				\$10,000						
21	Honeymoon Bay Fire Hall	D305002 Unit Heaters	Apparatus Bay/ Electric Forced Air Heaters	Electric fan heaters provide heating in the apparatus bays.	Replace heaters as unit failure occurs.	Replacement	3 - Future Renewal	\$3,000									\$3,000	
22	Honeymoon Bay Fire Hall	D304007 Exhaust Systems	Washrooms/ Exhaust Fans	Fractional horsepower exhaust fans used to exhaust air in washroom and in the main lounge.	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
23	Honeymoon Bay Fire Hall	D304007 Exhaust Systems - Apparatus Bay	Apparatus Bay/ Exhaust System	The truck exhaust pipes connect to ducting that is exhausted from the building by a high-capacity ventilator.	Replace or overhaul the exhaust fan at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$33,000	\$3,000	\$0	\$44,000	\$10,000	\$0	\$15,000	\$3,000	\$45,000	\$5,000
24	Honeymoon Bay Fire Hall	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	Water for domestic service is provided by the CVRD. Piping is primarily of copper.	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs.	Contingency	3 - Future Renewal	\$20,000									\$20,000	
25	Honeymoon Bay Fire Hall	D2030 Sanitary Waste	Throughout Interior of Building/ Sanitary Piping	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field (pumped approximately 5 years ago)	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
26	Honeymoon Bay Fire Hall	D202003 Domestic Water Equipment - Tanks	Service Room/ Hot Water Heating Tank	A 284 L, 4500 W John Wood domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	Replace domestic hot water heating tank prior to end of expected service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
27	Honeymoon Bay Fire Hall	D501003 Main & Secondary Switchgear	Office/ Main Circuit Breaker	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 400A circuit breaker panel.	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
28	Honeymoon Bay Fire Hall	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets.	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
29	Honeymoon Bay Fire Hall	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures (LED)	The lighting within the lounge and adjacent interior spaces is LED lighting. Ceiling fans with integral lighting are provided in the lounge.	Replace fixtures at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
30	Honeymoon Bay Fire Hall	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures (Fluorescent)	The lighting within the apparatus bays and Chief's office is comprised of T8 fluorescent tube lighting.	Replace fixtures at end of service life. Upgrade to higher efficient lighting at the time of replacement. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
31	Honeymoon Bay Fire Hall	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	The exterior lighting is a combination of high-intensity discharge (HID) and LED replacement fixtures. The age of the fixtures has been approximated.	Replace the exterior fixtures as failure occurs. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
32	Honeymoon Bay Fire Hall	D503099 Other Communications and Alarm Systems	Throughout Interior of Building/ Infrastructure Cabling	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
33	Honeymoon Bay Fire Hall	D503008 Security Systems	Building Entrances/ Building Alarm	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	Replace security system at end of service life.	Replacement	3 - Future Renewal	\$3,000									\$3,000	
34	Honeymoon Bay Fire Hall	D305005 Electrical Heating	Throughout Building/ Electric Baseboard Heaters	Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating.	Upgrades to select equipment has been undertaken. Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Honeymoon Bay Fire Hall, 10066 South Shore Road, Honeymoon Bay, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			Total in 2017 Dollars	10-YEAR CAPITAL PLAN											
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		
35	Honeymoon Bay Fire Hall	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	A Honda EG 5000X portable diesel generator is present in the apparatus bay. The generator is to be replaced with a 30 kW pad-mounted unit, with a propane cylinder and transfer switch.	Replace the emergency generator with equipment suited for this facility.	Replacement	1 – Immediate	\$25,000	\$25,000											
36	Honeymoon Bay Fire Hall	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting and Exit Signs	Emergency lighting and signs located in some rooms throughout the facility. Age of equipment has been approximated.	Replace emergency lights and battery packs as they fail, or as directed by the annual inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
37	Honeymoon Bay Fire Hall	P100001 Code Review	Further Study - Code Review	For conducting a building code review of the facility. Certain fire and life safety elements are not included as part of the base building equipment and these should be identified and installed as soon as possible.	Conduct building code review.	Study	1 – Immediate	\$4,000	\$4,000											
38	Honeymoon Bay Fire Hall	P100001 Seismic Review	Further Study - Code Review	For conducting a seismic screening of the building. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).	Conduct seismic screening.	Study	1 – Immediate	\$4,000	\$4,000											

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 01



Photo 02

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 03



Photo 04

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 05



Photo 06

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 07



Photo 08

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 09



Photo 10

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 11



Photo 12

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 13



Photo 14

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 15



Photo 16

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**

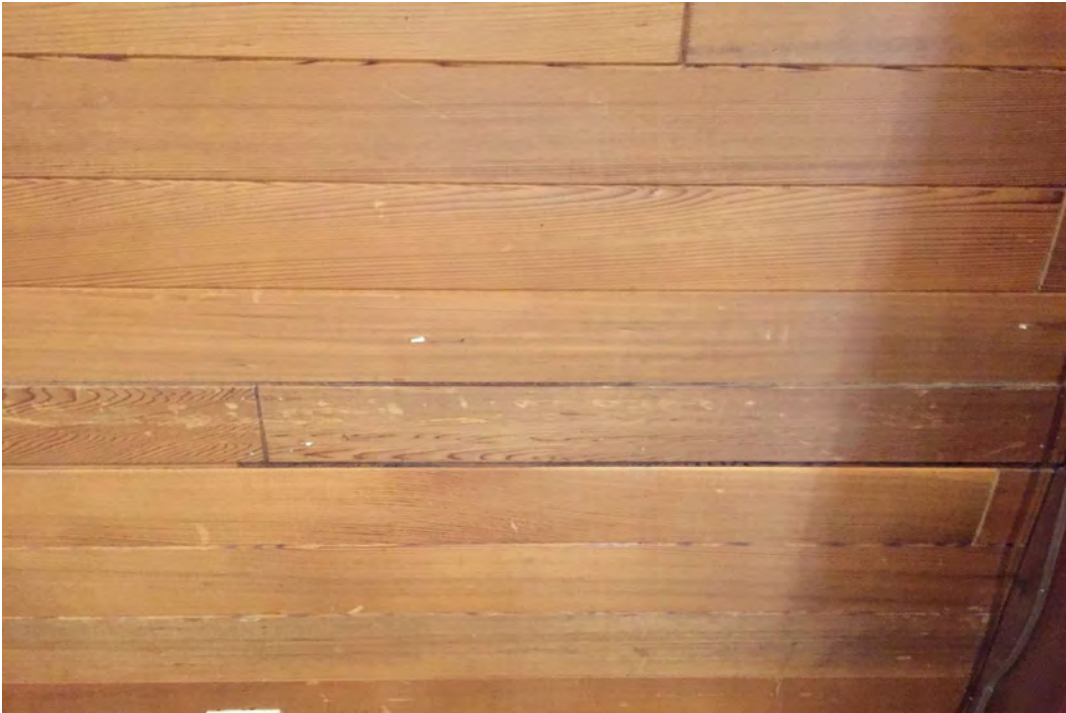


Photo 17



Photo 18

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 19



Photo 20

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 21



Photo 22

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**

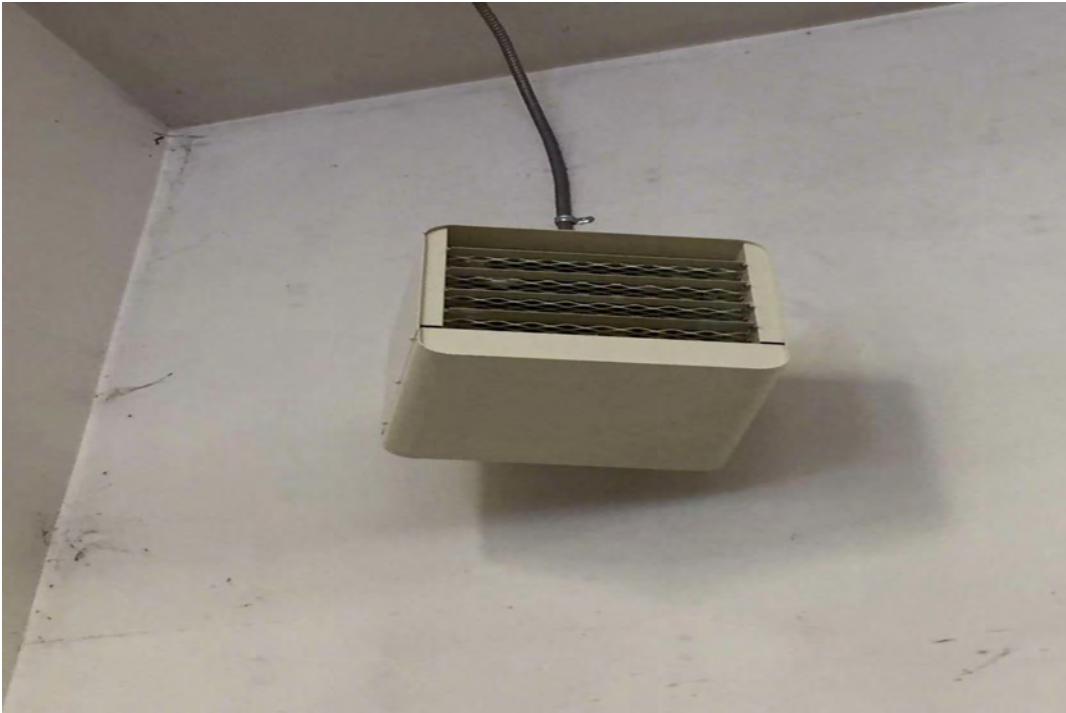


Photo 23



Photo 24

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 25



Photo 26

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 27



Photo 28

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 29



Photo 30

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 31

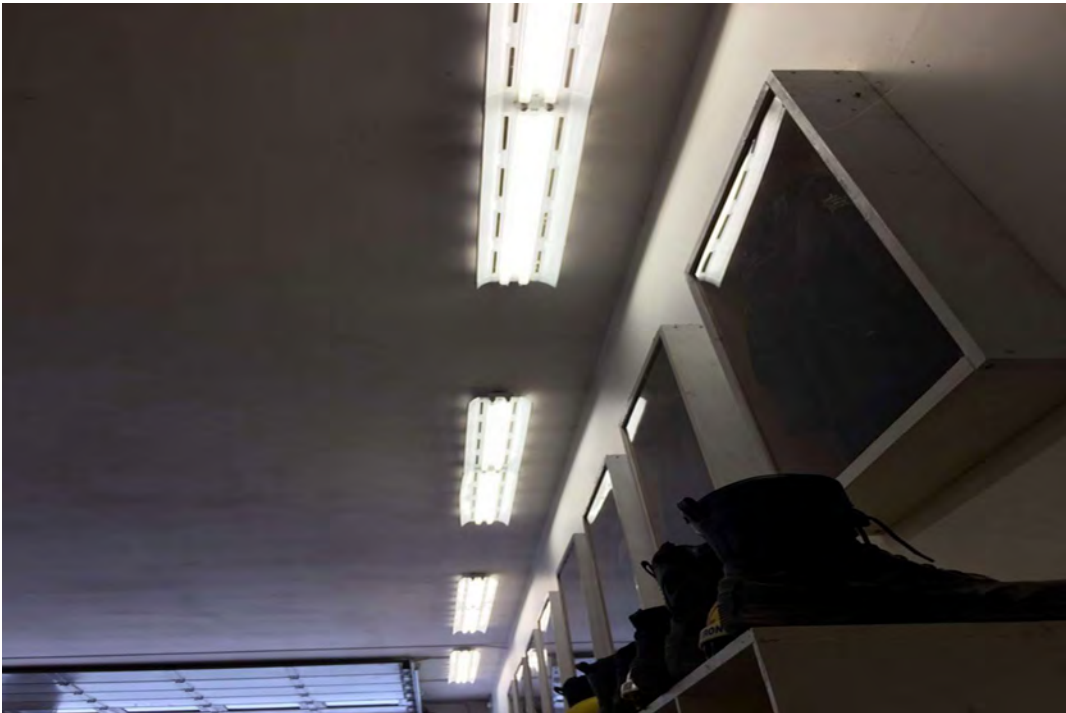


Photo 32

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 33



Photo 34

Cowichan Valley Regional District Honeymoon Bay Fire Hall - Report Photos

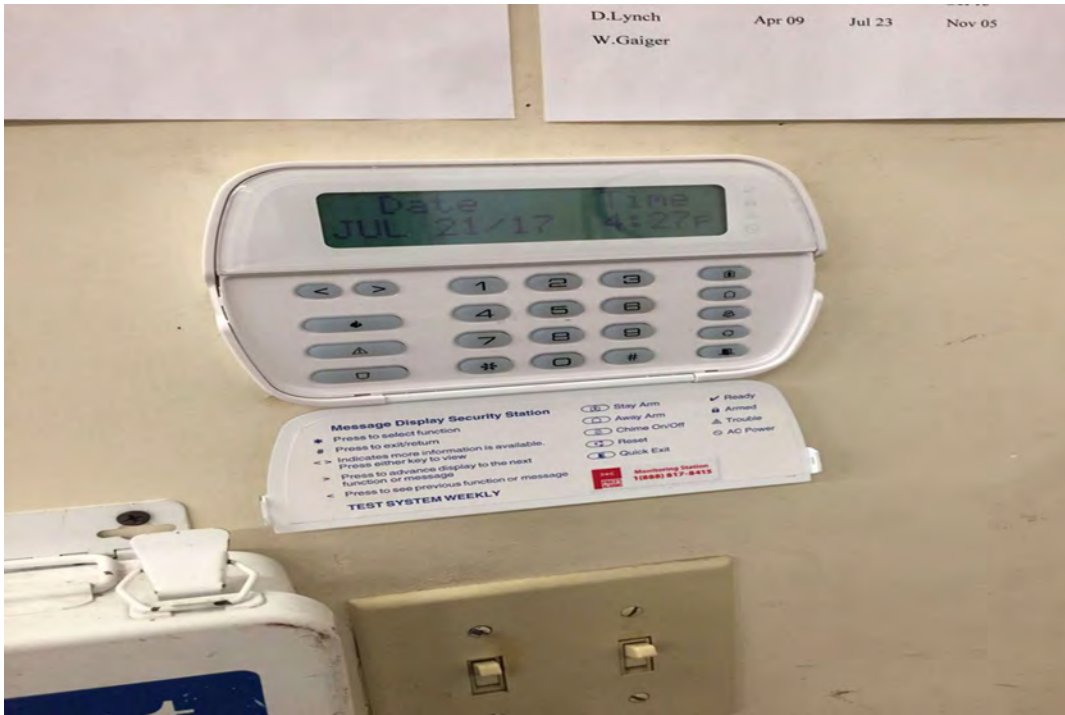


Photo 35



Photo 36

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 37



Photo 38

**Cowichan Valley Regional District
Honeymoon Bay Fire Hall - Report Photos**



Photo 39



Photo 40

Appendix A

A – 15 Youbou Fire Hall

Youbou Fire Hall



Cowichan Valley Regional District

MH Project No. 5170700.00

November 2017



Cowichan Valley
Regional District
175 Ingram Street
Duncan, BC V9L 1N8



MORRISON HERSHFIELD

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC**

PROPERTY DESCRIPTION

Youbou Fire Hall was constructed in 1996. The facility is comprised of a single storey, wood frame structure.

Refer to Photo 01 for an overview of the building.

PROPERTY STATISTICS

Gross Floor Area: 4,900 sf.

Replacement Value: \$1,670,900

Target FCI: 0.050

Current FCI: 0.013

REPORT OVERVIEW

We found no safety concerns requiring immediate expenditures.

The following provides an overview of the visual seismic, building code, accessibility and energy efficiency reviews completed.

Seismic Review

Seismic work completed to date: None

Recommendations: Perform seismic review to determine the suitability of the structure to function as a post-disaster building.

Building Code Review

Built under what code: 1992 British Columbia Building Code

Deficiencies observed: It is recommended the interior fire separations between the apparatus bays and the adjacent spaces be reviewed. A minimum 1.5 hour separation is recommended to meet current code requirements.

Accessibility Review

Access into building: None

Access throughout building: None

Access to washrooms: None

Recommendations: The building does not meet the requirements of an accessible building per the British Columbia Building Code. Spatial reconfigurations are needed to create a conforming facility.

We identified recommendations of approximately \$58,000 over the next five years. The following is a summary of the major projects (over \$10,000) we believe will be required the next five years, and elements whose condition is unknown and/or where further investigation is recommended:

- Row 21 - C302009 Other Floor Finishes - \$19,000
- Row 34 - D502002 Lighting Equipment (Indoor Low Voltage Fixtures) - \$25,000

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC**

PROJECT TEAM

The visual reviews were completed on August 1, 2017 by Jordan Bowie of MH. We began with an interview with Orest Smycniuk, Fire Chief. During our review of the building, we were accompanied by Mr. Smycniuk, who provided access to a sampling of representative areas of the facility, as requested.

Chris Raudoy of Morrison Hershfield reviewed the report for technical content and for compliance with the contract requirements.

REFERENCE DOCUMENTS/INFORMATION

We reviewed the following documents and selected drawings for general background and to inform ourselves about the layout and intended construction:

- Custom Services Custom Valuation by RMS, dated June 25, 2013

This report should be reviewed in conjunction with the Objectives, Terms of Reference, Limitations, and Methodology described in the main body of the report.

**Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Youbou Fire Hall, 10704 Youbou Road, Youbou, BC**

We recommend budgeting for the following 1 – Immediate, 2 - Restore Functionality, 2b - Exceeded Service Life and 3 - Future Renewal projects by year as follows:

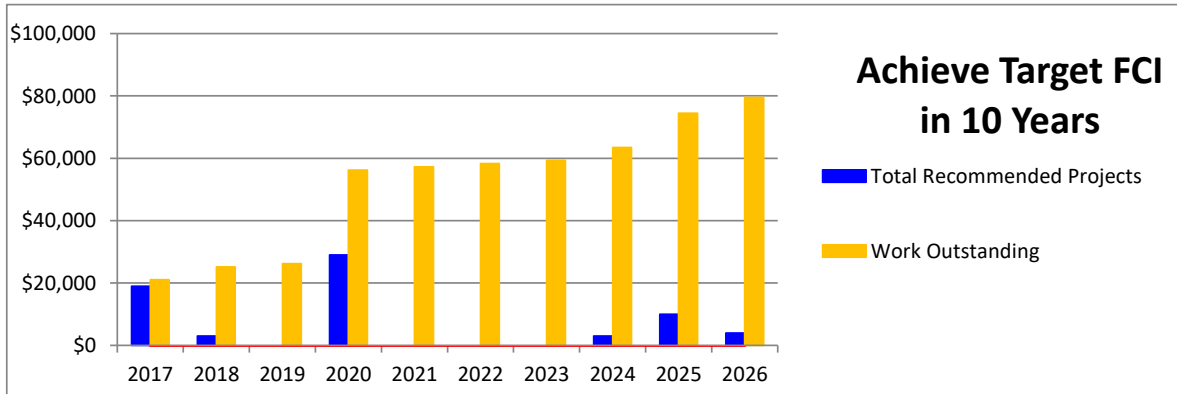
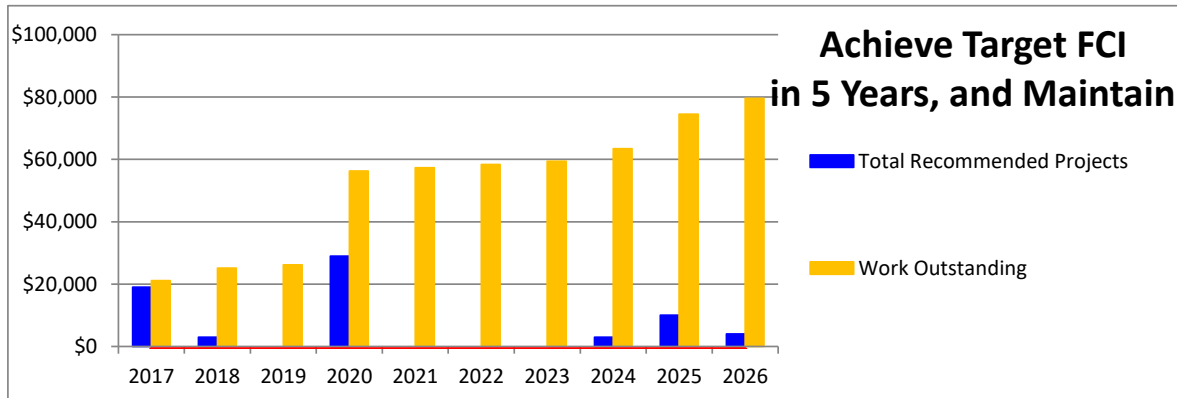
Priority	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1 – Immediate	0	0	0	0	0	0	0	0	0	0
2 - Restore Functionality	19,000	3,000	0	0	0	0	0	0	0	0
2b - Exceeded Service Life	0	0	0	0	0	0	0	0	0	0
3 - Future Renewal	0	0	0	29,000	0	0	0	3,000	10,000	4,000
Total in 2017 dollars	19,000	3,000	0	29,000	0	0	0	3,000	10,000	4,000

Minimum Funding to Achieve and Maintain Target FCI within 5 years: -\$1,050

Work outstanding	21,099	25,149	26,198	56,248	57,297	58,347	59,396	63,446	74,495	79,545
------------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

Minimum Funding to Achieve Target FCI within 10 years: -\$1,050

Work outstanding	21,099	25,149	26,198	56,248	57,297	58,347	59,396	63,446	74,495	79,545
------------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



Start Yr
2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	Bldg Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT							LIFECYCLE DATA				RECOMMENDATION				OPINION OF PROBABLE COST									
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age In 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to OOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Conting.	Contingency	5% Tax	Total in 2017 Dollars	
1	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	A Substructure	A10 Foundations	A1010 Standard Foundations	A101001 Wall Foundations	Underground/ Foundations	x	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of some above-grade foundation wall on some elevations.	4	5	1996	1-Aug-17	MH	21	75	54	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No									
2	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103001 Standard Slab on Grade	Interior of Building At-Grade/ Slab-on-Grade	02	The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	4	5	1996	1-Aug-17	MH	21	75	54	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No									
3	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	4	4	1996	1-Aug-17	MH	21	5	2	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	No	N/A	No	N/A	1	\$2,000	LS	\$2,000	0%	0%	5%	\$3,000	
4	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	4	4	1996	1-Aug-17	MH	21	75	54	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal	N/A	N/A	No	No									
5	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B10 Superstructure	B10 Superstructure	B10 Superstructure	Interior of Building/ General Superstructure	03	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage. Staining observed on the underside of the roof sheathing (plywood) was a result of the previous roof leaking (roof replaced in 2013 - no leaks reported since that time).	4	5	1996	1-Aug-17	MH	21	75	29	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable	Yes	Yes	Yes	No									
6	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	B2010 Exterior Walls	B201001 Exterior Walls - Metal Cladding	Exterior Walls/ Metal Cladding	04	Prefinished corrugated metal cladding on the exterior walls of the building. A small amount of corrosion was observed at the base of the walls where panels are in contact with the concrete foundation wall. Some fasteners were noted to have backed-out of the cladding.	4	5	1996	1-Aug-17	MH	21	50	29	Replace metal siding at end of service life. Aside from touch-up painting where corroded, the panels will likely withstand moisture contact for their intended service life. Replace screws with worn-out washers and re-seat screws where backed-out (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
7	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	B2010 Exterior Walls	B201005 Exterior Soffits	Roof/ Metal Soffit	05	Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves and the entrance canopy.	4	5	1996	1-Aug-17	MH	21	50	29	Replace soffit at end of service life, in conjunction with the metal siding replacement. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No									
8	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	B2020 Exterior Windows	B202001 Windows	Exterior Walls/ Aluminum Windows	06	Windows are aluminum framed with double paned insulated glazing units (IGUs) with slider sashes.	4	5	1996	1-Aug-17	MH	21	35	14	Replace IGUs as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
9	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	E2030 Exterior Doors	B203001 Exterior Metal Doors	Exterior Walls/ Egress Doors	07	Single outswing steel doors are present at points of building egress.	4	5	1996	1-Aug-17	MH	21	40	19	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
10	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	E2030 Exterior Doors	B203001 Exterior Wood Doors	Exterior Walls/ Front and Rear Doors	08	Single outswing metal doors in wood are present at the front and rear entrances to the building. The front door slab was replaced in 2016 and the back door is scheduled for replacement in 2018. Wood decay was observed in the frames of both doors.	3	3	1996	1-Aug-17	MH	21	30	2	Replace doors and decayed wood frames with all metal or composite units (comply with appropriate fire resistance rating per BC Building Code). Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	2 - Restore Functionality	Yes	Yes	No	No	2	\$1,200	EA	\$2,400	0%	15%	5%	\$3,000	
11	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	E2030 Exterior Doors	B203002 Glazed Doors	Exterior Wall/ Sliding Patio Door	09	A vinyl framed sliding glass door with double paned IGU gives access to the lounge's exterior patio.	4	5	2003	1-Aug-17	MH	14	35	21	Replace sliding glass door at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No									
12	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	B20 Enclosure	E2030 Exterior Doors	B203004 Overhead Garage Doors	Exterior Walls/ Apparatus Bay Doors	10-11	Four insulated steel overhead doors with single glazing for natural lighting. The doors have been provided with automatic openers.	4	5	1996	1-Aug-17	MH	21	35	14	Replace overhead garage door on the storage garage at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	No									
13	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	D30 Roofing	B3010 Roof Coverings	B301002 Slope Roof	Roof/ Metal Panels	12	The sloped roof is clad with prefinished, standing seam metal roofing panels.	4	5	2009	1-Aug-17	MH	8	40	32	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No									
14	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	B Shell	D30 Roofing	B3010 Roof Coverings	B301005 Gutters and Downspouts	Roof/ Eaves Troughs	13	Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roofs. It is our understanding that the troughs were replaced in conjunction with the roof.	4	5	2007	1-Aug-17	MH	10	20	10	Replace eaves troughs and downspouts at the end of service life.	Replacement	3 - Future Renewal	Yes	Yes	No	No	140	\$20	LF	\$2,800	0%	15%	5%	\$4,000	
15	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Interior of Building/ Wood Doors	14	Original wood doors in wood frames are present throughout the building at offices, storage rooms and bathrooms.	4	5	1996	1-Aug-17	MH	21	50	29	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
16	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Interior of Building/ Steel Doors	15	Original steel doors in steel frames are present between the apparatus bays and the main administrative section.	4	5	1996	1-Aug-17	MH	21	50	29	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
17	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	16-20	Two washrooms are present in the building. The standard equipment includes stand-up showers, toilets, urinals in the male bathrooms, sinks in residential-type vanities and steel stall dividers. Some plumbing fixtures have been updated since original construction.	4	5	1996	1-Aug-17	MH	21	40	19	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their age, any allowance needed would correspond to the Fire Hall's discretionary renovations.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
18	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Interior of Building/ Paint	21	The majority of the interior walls and ceilings are finished with painted gypsum board (or plywood, in the case of the apparatus bay). The painting was ongoing at the time of the site visit.	4	5	2017	1-Aug-17	MH	0	10	10	Repaint interior common walls and ceilings as-needed. An allowance for periodic painting has been included in the Capital Plan.	Contingency	4b- Discretionary Aesthetic	Yes	Yes	No	No	1	\$14,000	LS	\$14,000	0%	0%	5%	\$15,000	
19	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C3010 Wall Finishes	Lower Interior Walls/ Wood	22	Walls within the lounge and hallways are finished with stained tongue and groove wainscoting. Age of installation approximated.	4	5	2005	1-Aug-17	MH	12	50	38	Replace wood boards at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No									
20	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302004 Resilient Floor Finishes	Admin. Area, Lounge, Kitchen and Bathrooms/ Vinyl Flooring	23	Vinyl sheet flooring is present throughout the building (excluding the apparatus bays).	4	5	1996	1-Aug-17	MH	21	50	29	Replace flooring at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No									
21	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302009 Other Floor Finishes	Apparatus Bay/ Concrete Floor Finish	2	The concrete slab-on-grade was originally finished with a paint coating. The coating has mostly worn away from pedestrian and vehicular traffic.	1	3	1996	1-Aug-17	MH	21	15	1	Reccoat the apparatus bay floor with a resilient coating.	Replacement	2 - Restore Functionality	No	Yes	No	No	2520	\$6	SF	\$15,120	0%	15%	5%	\$19,000	

Start Yr
2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION					OPINION OF PROBABLE COST										
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age In 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to OOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	Contingency	5% Tax	Total In 2017 Dollars
22	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	24	A residential-style kitchen is present. Equipment provided includes laminate counter tops and cabinets, a stainless steel sink, refrigerator, a microwave, an electric range/oven.	4	5	1996	1-Aug-17	MH	21	40	19	Renovate the kitchen millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal	No	No	No	No								
23	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304001 Air Distribution, Heating and Cooling	Exterior of Building/ Heat Pumps	25-27	Two Payne heat pumps (model PH13NA030-B and PH13NA042-B) with central digital thermostats condition the interior spaces (excluding the apparatus bays).	4	5	2011	1-Aug-17	MH	6	20	14	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
24	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304008 Air Handling Units	Corridor Closets/ Air Handlers	28/29	Two Payne air handlers (model PF4MNA031 and PF4MNA043) move air from heat pumps to interior spaces throughout the administrative, kitchen, bathrooms and hallway areas.	4	5	2011	1-Aug-17	MH	6	20	14	Replace or substantially overhaul the air handlers at end of reliable service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
25	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305002 Unit Heaters	Apparatus Bays/ Electric Forced Air Heaters	30/31	Electric fan heaters provide heating in the apparatus bays, controlled by dedicated, bi-metallic thermostats.	3	5	1996	1-Aug-17	MH	21	40	19	Replace heaters as unit failure occurs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
26	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems	Washrooms/ Exhaust Fans	32	Fractional horsepower exhaust fans used to exhaust air from washrooms.	4	5	1996	1-Aug-17	MH	21	30	28	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
27	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems	Apparatus Bay/ Exhaust System	33	The truck exhaust pipes connect to ducting that is exhausted from the building by a high-capacity ventilator. Age of the exhaust system has been approximated.	4	5	2015	1-Aug-17	MH	2	25	23	Replace or overhaul the exhaust fan at end of service life. It is our understanding that the Fire Hall is considering installing a contactless exhaust system to avoid tripping hazards. The estimated cost would be in the order of \$30,000. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	Yes								
28	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D30 HVAC	D3050 Terminal and Package Units	D305006 Package Units	Corridor Closet/ Central Vacuum	34	A Eureka Technical 2000 central vacuum cleaner is provided.	4	5	1996	1-Aug-17	MH	21	30	9	Replace the packaged unit at end of service life. The cost to replace the power unit is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	Yes								
29	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	x	Water for domestic service is provided by the CVRD. Piping is primarily of copper.	4	5	1996	1-Aug-17	MH	21	40	19	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal	Yes	Yes	No	No								
30	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D20 Plumbing	D2030 Sanitary Waste	D203001 Sanitary Waste	Throughout Interior of Building/ Sanitary Piping	35	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field.	4	5	1996	1-Aug-17	MH	21	60	39	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
31	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment - Tanks	Bathroom Closet/ Hot Water Heating Tank	36	A 175 L 4500 W GSW domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	3	3	1997	1-Aug-17	MH	20	10	2	The domestic hot water heating tank has exceeded the expected service life. Consider replacing the tank as soon as practicable to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	2b - Exceeded Service Life	No	Yes	No	No								
32	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5010 Electrical Service and Distribution	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	37-40	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 400A circuit breaker panel. A 125 subpanel manages loads outside of the apparatus bay.	3	5	1996	1-Aug-17	MH	21	50	29	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	Yes								
33	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	x	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets.	4	5	1996	1-Aug-17	MH	21	60	29	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	Yes								
34	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures	41	The lighting throughout the facility is comprised of fluorescent light fixtures.	3	4	1996	1-Aug-17	MH	21	25	4	Replace fixtures at end of service life. Upgrade to higher efficient lighting at the time of replacement.	Replacement	3 - Future Renewal	Yes	No	No	No	50	\$400	EA	\$20,000	0%	15%	5%	\$25,000
35	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	42	The exterior lighting is comprised of high-intensity discharge (HID) fixtures.	3	4	1996	1-Aug-17	MH	21	25	4	Replace the exterior fixtures as failure occurs.	Replacement	3 - Future Renewal	Yes	No	No	No	8	\$400	EA	\$3,200	0%	15%	5%	\$4,000
36	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 LAN, TV, Telephone	Throughout Interior of Building/ Infrastructure Cabling	43	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	4	5	2005	1-Aug-17	MH	12	25	13	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	Partial	No								
37	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5030 Communications and Security	D503008 Security Systems	Building Entrances/ Building Alarm	44	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	4	5	2005	1-Aug-17	MH	12	20	8	Replace security system at end of service life.	Replacement	3 - Future Renewal	No	No	No	Yes	1	\$2,500	LS	\$2,500	0%	0%	5%	\$3,000
38	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5030 Communications and Security	D503001 Fire Alarm Systems	Apparatus Bay/ Fire Alarm Panel	45-48	The building is equipped with an EST fire alarm panel, connected to the heat detectors, pull stations and fire bells in the building.	4	5	1996	1-Aug-17	MH	21	30	9	Replace the fire alarm panel at the end of its lifespan, including an allowance to replace some wiring and devices.	Replacement	3 - Future Renewal	No	No	No	Yes	1	\$7,000	EA	\$7,000	10%	15%	5%	\$10,000
39	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	49	A 30kW Generac propane emergency generator (Model QT03016ANSN) is located on a concrete pad outside of the building footprint. The generator is tested internally on a regular basis.	4	5	2009	1-Aug-17	MH	8	30	22	Replace the emergency generator at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	Yes	No								
40	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Apparatus Bay/ Generator Transfer Switch	50-52	There is one automatic transfer switch in the apparatus bay connected to the emergency generator. A separate 200 A circuit breaker panel distributes power to certain fixtures and equipment in the event of a power outage.	4	5	1996	1-Aug-17	MH	21	40	19	Replace the automatic transfer switch at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	Yes	No								
41	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	G Building Site Work	G30 Site Civil and Mechanical Utilities	G3060 Fuel Distribution	G306004 Liquid Fuel Storage Tanks	Exterior of Building/ Propane Tank	53	The emergency generator is fueled by propane, which is stored in a pressurized cylinder.	4	5	2009	1-Aug-17	MH	8	30	22	Replace propane storage tank at the end of service life. Re-paint the cylinder to refresh appearance and to mitigate wear from corrosion. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	Yes	Yes								

Start Yr
2017 Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT			CONDITION ASSESSMENT				LIFECYCLE DATA			RECOMMENDATION			OPINION OF PROBABLE COST															
						ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age In 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to OOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Conting.	Contingency	% Tax	Total In 2017 Dollars		
42	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	D Services	D50 Electrical	D5090 Other Electrical Services	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting	54/55	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	4	5	2015	1-Aug-17	MH	2	25	23	Replace emergency lights and battery packs as they fail, or as directed by the annual fire inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No										
43	Youbou Fire Hall	10704 Youbou Road, Youbou, BC	P Professional Services	P100001 Seismic Review	P100001 Seismic Review	P100001 Seismic Review	Further Study	x	For conducting a seismic screening of the building. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).		3	1996	1-Aug-17	MH	21	99	1	Despite the facility having been constructed in 1996 and likely to seismic codes of the day, the Fire Hall may not comply with Post-Disaster Facility requirement. Conduct seismic screening to confirm.	Study	Not Applicable	No	No	Yes	No	1	\$3,500	LS	\$3,500	0%	0%	5%	\$4,000		

Start Yr
2017
Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total In 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$23,000	\$6,000	\$0	\$29,000	\$0	\$0	\$0	\$3,000	\$10,000	\$19,000
1	Youbou Fire Hall	A101001 Wall Foundations	Underground/ Foundations	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of some above-grade foundation wall on some elevations.	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
2	Youbou Fire Hall	A103001 Standard Slab on Grade	Interior of Building At-Grade/ Slab-on-Grade	The floor is concrete slab-on-grade. No evidence of major settlement or heaving was reported or observed.	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable											
3	Youbou Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	\$3,000		\$3,000								
4	Youbou Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal											
5	Youbou Fire Hall	B10 Superstructure	Interior of Building/ General Superstructure	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage. Staining observed on the underside of the roof sheathing (plywood) was a result of the previous roof leaking (roof replaced in 2013 - no leaks reported since that time).	Interior protected structural components are expected to last the life of the building. No major capital expenditures are expected to be required.	Not Applicable	Not Applicable											
6	Youbou Fire Hall	B201001 Exterior Walls - Metal Cladding	Exterior Walls/ Metal Cladding	Prefinished corrugated metal cladding on the exterior walls of the building. A small amount of corrosion was observed at the base of the walls where panels are in contact with the concrete foundation wall. Some fasteners were noted to have backed-out of the cladding.	Replace metal siding at end of service life. Aside from touch-up painting where corroded, the panels will likely withstand moisture contact for their intended service life. Replace screws with worn-out washers and re-seat screws where backed-out (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
7	Youbou Fire Hall	B201008 Exterior Soffits	Roof/ Metal Soffit	Prefinished, continuously perforated metal soffit is installed on the underside of roof eaves and the entrance canopy.	Replace soffit at end of service life, in conjunction with the metal siding replacement. Replace or re-fasten isolated sections of dislodged soffit as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
8	Youbou Fire Hall	B202001 Windows	Exterior Walls/ Aluminum Windows	Windows are aluminum framed with double paned insulated glazing units (IGUs) with slider sashes.	Replace IGUs as-needed (maintenance). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
9	Youbou Fire Hall	B203001 Exterior Metal Doors	Exterior Walls/ Egress Doors	Single outswing steel doors are present at points of building egress.	Replace doors at end of service life. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	3 - Future Renewal											
10	Youbou Fire Hall	B203001 Exterior Wood Doors	Exterior Walls/ Front and Rear Doors	Single outswing metal doors in wood are present at the front and rear entrances to the building. The front door slab was replaced in 2016 and the back door is scheduled for replacement in 2018. Wood decay was observed in the frames of both doors.	Replace doors and decayed wood frames with all metal or composite units (comply with appropriate fire resistance rating per BC Building Code). Replace weatherstripping and complete minor repairs and adjustment as part of maintenance.	Replacement	2 - Restore Functionality	\$3,000		\$3,000								
11	Youbou Fire Hall	B203002 Glazed Doors	Exterior Wall/ Sliding Patio Door	A vinyl framed sliding glass door with double paned IGU gives access to the lounge's exterior patio.	Replace sliding glass door at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total In 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$23,000	\$6,000	\$0	\$29,000	\$0	\$0	\$0	\$3,000	\$10,000	\$19,000
12	Youbou Fire Hall	B203004 Overhead Garage Doors	Exterior Walls/ Apparatus Bay Doors	Four insulated steel overhead doors with single glazing for natural lighting. The doors have been provided with automatic openers.	Replace overhead garage door on the storage garage at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
13	Youbou Fire Hall	B301002 Slope Roof	Roof/ Metal Panels	The sloped roof is clad with prefinished, standing seam metal roofing panels.	Replace metal roofing panels and accessories at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
14	Youbou Fire Hall	B301005 Gutters and Downspouts	Roof/ Eaves Troughs	Prefinished metal eaves troughs and downspouts are present at the eaves of the pitched roofs. It is our understanding that the troughs were replaced in conjunction with the roof.	Replace eaves troughs and downspouts at the end of service life.	Replacement	3 - Future Renewal	\$4,000										\$4,000
15	Youbou Fire Hall	C102001 Standard Interior Doors	Interior of Building/ Wood Doors	Original wood doors in wood frames are present throughout the building at offices, storage rooms and bathrooms.	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
16	Youbou Fire Hall	C102001 Standard Interior Doors	Interior of Building/ Steel Doors	Original steel doors in steel frames are present between the apparatus bays and the main administrative section.	Doors are expected to last the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
17	Youbou Fire Hall	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	Two washrooms are present in the building. The standard equipment includes stand-up showers, toilets, urinals in the male bathrooms, sinks in residential-type vanities and steel stall dividers. Some plumbing fixtures have been updated since original construction.	General refurbishment of washrooms at the end of service life. As washrooms are performing adequately for their age, any allowance needed would correspond to the Fire Hall's discretionary renovations.	Replacement	3 - Future Renewal											
18	Youbou Fire Hall	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Interior of Building/ Paint	The majority of the interior walls and ceilings are finished with painted gypsum board (or plywood, in the case of the apparatus bay). The painting was ongoing at the time of the site visit.	Repaint interior common walls and ceilings as-needed. An allowance for periodic painting has been included in the Capital Plan.	Contingency	4b - Discretionary Aesthetic	\$15,000										\$15,000
19	Youbou Fire Hall	C3010 Wall Finishes	Lower Interior Walls/ Wood	Walls within the lounge and hallways are finished with stained tongue and groove wainscoting. Age of installation approximated.	Replace wood boards at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
20	Youbou Fire Hall	C302004 Resilient Floor Finishes	Admin. Area, Lounge, Kitchen and Bathrooms/ Vinyl Flooring	Vinyl sheet flooring is present throughout the building (excluding the apparatus bays).	Replace flooring at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
21	Youbou Fire Hall	C302009 Other Floor Finishes	Apparatus Bay/ Concrete Floor Finish	The concrete slab-on-grade was originally finished with a paint coating. The coating has mostly worn away from pedestrian and vehicular traffic.	Recoat the apparatus bay floor with a resilient coating.	Replacement	2 - Restore Functionality	\$19,000	\$19,000									
22	Youbou Fire Hall	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	A residential-style kitchen is present. Equipment provided includes laminate counter tops and cabinets, a stainless steel sink, refrigerator, a microwave, an electric range/oven.	Renovate the kitchen millwork at end of service life. Note that appliances are not considered as base building equipment. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal											
23	Youbou Fire Hall	D304001 Air Distribution, Heating and Cooling	Exterior of Building/ Heat Pumps	Two Payne heat pumps (model PH13NA030-B and PH13NA042-B) with central digital thermostats condition the interior spaces (excluding the apparatus bays).	Replace compressors as they fail. Replace the heat pumps once it is no longer economical to maintain the units. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total In 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$23,000	\$6,000	\$0	\$29,000	\$0	\$0	\$0	\$3,000	\$10,000	\$19,000
24	Youbou Fire Hall	D304008 Air Handling Units	Corridor Closets/ Air Handlers	Two Payne air handlers (model PF4MNA031 and PF4MNA043) move air from heat pumps to interior spaces throughout the administrative, kitchen, bathrooms and hallway areas.	Replace or substantially overhaul the air handlers at end of reliable service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
25	Youbou Fire Hall	D305002 Unit Heaters	Apparatus Bays/ Electric Forced Air Heaters	Electric fan heaters provide heating in the apparatus bays, controlled by dedicated, bi-metallic thermostats.	Replace heaters as unit failure occurs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
26	Youbou Fire Hall	D304007 Exhaust Systems	Washrooms/ Exhaust Fans	Fractional horsepower exhaust fans used to exhaust air from washrooms.	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
27	Youbou Fire Hall	D304007 Exhaust Systems	Apparatus Bay/ Exhaust System	The truck exhaust pipes connect to ducting that is exhausted from the building by a high-capacity ventilator. Age of the exhaust system has been approximated.	Replace or overhaul the exhaust fan at end of service life. It is our understanding that the Fire Hall is considering installing a contactless exhaust system to avoid tripping hazards. The estimated cost would be in the order of \$30,000. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
28	Youbou Fire Hall	D305006 Package Units	Corridor Closet/ Central Vacuum	A Eureka Technical 2000 central vacuum cleaner is provided.	Replace the packaged unit at end of service life. The cost to replace the power unit is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
29	Youbou Fire Hall	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	Water for domestic service is provided by the CVRD. Piping is primarily of copper.	Complete localized repairs as may be necessary as the building ages. A contingency has been provided for piping repairs. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal											
30	Youbou Fire Hall	D2030 Sanitary Waste	Throughout Interior of Building/ Sanitary Piping	Sanitary piping is comprised of ABS, where visible. Piping discharges waste to an on-site septic field.	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
31	Youbou Fire Hall	D202003 Domestic Water Equipment - Tanks	Bathroom Closet/ Hot Water Heating Tank	A 175 L, 4500 W GSW domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	The domestic hot water heating tank has exceeded the expected service life. Consider replacing the tank as soon as practicable to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	2b - Exceeded Service Life											
32	Youbou Fire Hall	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 400A circuit breaker panel. A 125 subpanel manages loads outside of the apparatus bay.	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
33	Youbou Fire Hall	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	Wiring throughout the facility is copper. Devices include all house voltage switches and outlets.	Replace or upgrade wiring as required. Add GFCI protection to all exterior outlets or receptacles adjacent to sinks. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Youbou Fire Hall, 10704 Youbou Road, Youbou, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			10-YEAR CAPITAL PLAN										
		ID	Location / Type	Description & History	Recommendation	Type	Priority	Total In 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$23,000	\$6,000	\$0	\$29,000	\$0	\$0	\$0	\$3,000	\$10,000	\$19,000
34	Youbou Fire Hall	D502002 Lighting Equipment	Throughout Interior of Building/ Indoor Low-Voltage Fixtures	The lighting throughout the facility is comprised of fluorescent light fixtures.	Replace fixtures at end of service life. Upgrade to higher efficient lighting at the time of replacement.	Replacement	3 - Future Renewal	\$25,000				\$25,000						
35	Youbou Fire Hall	D502002 Lighting Equipment	Exterior Walls/ Outdoor Fixtures	The exterior lighting is comprised of high-intensity discharge (HID) fixtures.	Replace the exterior fixtures as failure occurs.	Replacement	3 - Future Renewal	\$4,000				\$4,000						
36	Youbou Fire Hall	D503008 LAN, TV, Telephone	Throughout Interior of Building/ Infrastructure Cabling	The facility is served by LAN, telephone, and TV cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
37	Youbou Fire Hall	D503008 Security Systems	Building Entrances/ Building Alarm	A security system is present to detect break and enter incidents. The age of the equipment has been approximated.	Replace security system at end of service life.	Replacement	3 - Future Renewal	\$3,000								\$3,000		
38	Youbou Fire Hall	D503001 Fire Alarm Systems	Apparatus Bay/ Fire Alarm Panel	The building is equipped with an EST fire alarm panel, connected to the heat detectors, pull stations and fire bells in the building.	Replace the fire alarm panel at the end of its lifespan, including an allowance to replace some wiring and devices.	Replacement	3 - Future Renewal	\$10,000									\$10,000	
39	Youbou Fire Hall	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	A 30kW Generac propane emergency generator (Model QT03016ANSN) is located on a concrete pad outside of the building footprint. The generator is tested internally on a regular basis.	Replace the emergency generator at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
40	Youbou Fire Hall	D509002 Emergency Lighting and Power	Apparatus Bay/ Generator Transfer Switch	There is one automatic transfer switch in the apparatus bay connected to the emergency generator. A separate 200 A circuit breaker panel distributes power to certain fixtures and equipment in the event of a power outage.	Replace the automatic transfer switch at the end of its lifespan. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
41	Youbou Fire Hall	G306004 Liquid Fuel Storage Tanks	Exterior of Building/ Propane Tank	The emergency generator is fueled by propane, which is stored in a pressurized cylinder.	Replace propane storage tank at the end of service life. Re-paint the cylinder to refresh appearance and to mitigate wear from corrosion. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
42	Youbou Fire Hall	D509002 Emergency Lighting and Power	Throughout Interior of Building/ Emergency Lighting	Emergency lighting and exit signage located in some rooms throughout the facility. Age of equipment has been approximated.	Replace emergency lights and battery packs as they fail, or as directed by the annual fire inspection report. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
43	Youbou Fire Hall	P100001 Seismic Review	Further Study	For conducting a seismic screening of the building. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).	Despite the facility having been constructed in 1996 and likely to seismic codes of the day, the Fire Hall may not comply with Post-Disaster Facility requirement. Conduct seismic screening to confirm.	Study	Not Applicable	\$4,000	\$4,000									

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 01



Photo 02

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 03



Photo 04

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 05



Photo 06

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 07



Photo 08

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 09



Photo 10

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 11



Photo 12

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 13



Photo 14

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 15



Photo 16

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 17



Photo 18

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 19



Photo 20

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 21



Photo 22

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 23



Photo 24

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 25



Photo 26

Cowichan Valley Regional District Youbou Fire Hall - Report Photos



Photo 27



Photo 28

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 29



Photo 30

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 31

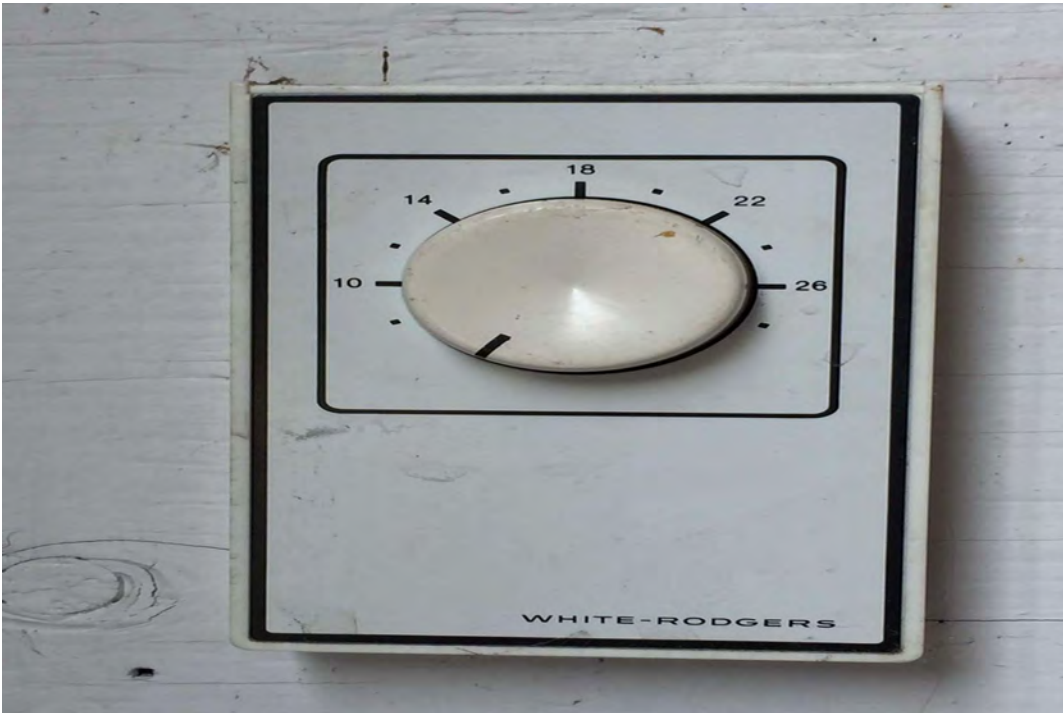


Photo 32

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 33



Photo 34

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 35



Photo 36

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 37



Photo 38

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 39



Photo 40

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 41



Photo 42

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 43



Photo 44

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 47



Photo 48

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 49



Photo 50

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 51



Photo 52

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 53



Photo 54

**Cowichan Valley Regional District
Youbou Fire Hall - Report Photos**



Photo 55



Photo 56

Appendix A

A – 16 Mesachie Lake Fire Hall

Mesachie Lake Fire Hall



Cowichan Valley Regional District

MH Project No. 5170700.00

November 2017



Cowichan Valley
Regional District
175 Ingram Street
Duncan, BC V9L 1N8



MORRISON HERSHFIELD

Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

PROPERTY DESCRIPTION

Mesachie Lake Fire Hall was initially constructed in 1940. Additions were constructed over the next few decades, with the construction of the office approximately 15 years ago.

Refer to Photo 01 for an overview of the building.

PROPERTY STATISTICS

Gross Floor Area: 3,000 sf.

Replacement Value: \$1,023,000

Target FCI: 0.050

Current FCI: 0.041

REPORT OVERVIEW

We identified Priority 1 - Immediate expenditures totalling \$30,000 as follows:

- Row 35 - D503001 Fire Alarm Systems - \$30,000

The following provides an overview of the visual seismic, building code, accessibility and energy efficiency reviews completed.

Seismic Review

Seismic work completed to date: No
 Recommendations: If the CVRD deems this fire hall to be a post-disaster facility, a seismic and feasibility study would be needed.

Building Code Review

Built under what code: Unknown
 Deficiencies observed: N/A

Accessibility Review

Access into building: Pedestrian access only
 Access throughout building: None
 Access to washrooms: None
 Recommendations: The building does not meet the requirements of an accessible building per the British Columbia Building Code. Major spatial reconfigurations are needed to create a conforming facility.

We identified recommendations of approximately \$59,000 over the next five years. The following is a summary of the major projects (over \$10,000) we believe will be required the next five years, and elements whose condition is unknown and/or where further investigation is recommended:

- Row 21 - C302007 Painting and Staining Floors - \$10,000
- Row 35 - D503001 Fire Alarm Systems - \$30,000

**Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC**

PROJECT TEAM

The visual reviews were completed on July 21, 2017 by Jordan Bowie of MH. We began with an interview with Gary Eve, Fire Chief. During our review of the building, we were accompanied by Mr. Eve, who provided access to a sampling of representative areas of the facility, as requested.

Chris Raudoy of Morrison Hershfield reviewed the report for technical content and for compliance with the contract requirements.

REFERENCE DOCUMENTS/INFORMATION

We reviewed the following documents and selected drawings for general background and to inform ourselves about the layout and intended construction:

- no documents provided

This report should be reviewed in conjunction with the Objectives, Terms of Reference, Limitations, and Methodology described in the main body of the report.

**Cowichan Valley Regional District
 Facility Condition Assessment and Capital Plan
 Mesachie Lake Fire Hall, 9295 Carlton Rd, Lake Cowichan, BC**

We recommend budgeting for the following 1 – Immediate, 2 - Restore Functionality, 2b - Exceeded Service Life and 3 - Future Renewal projects by year as follows:

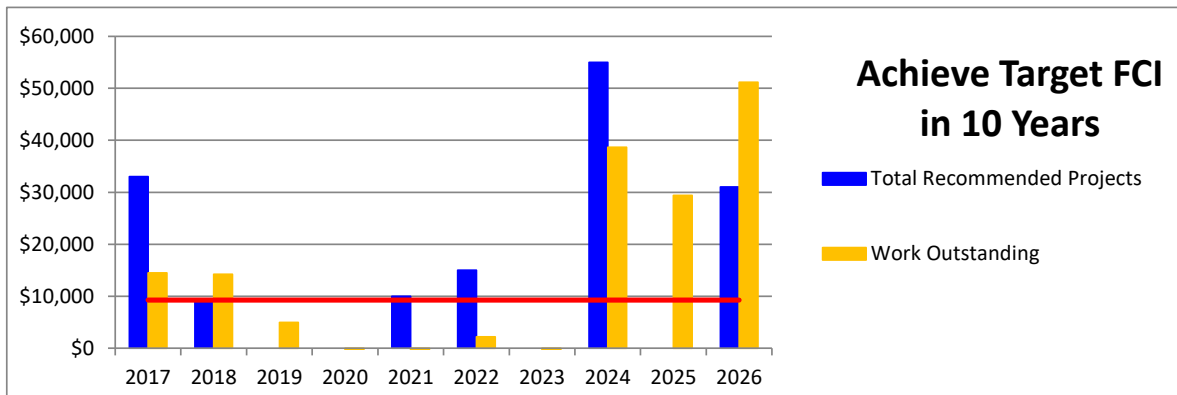
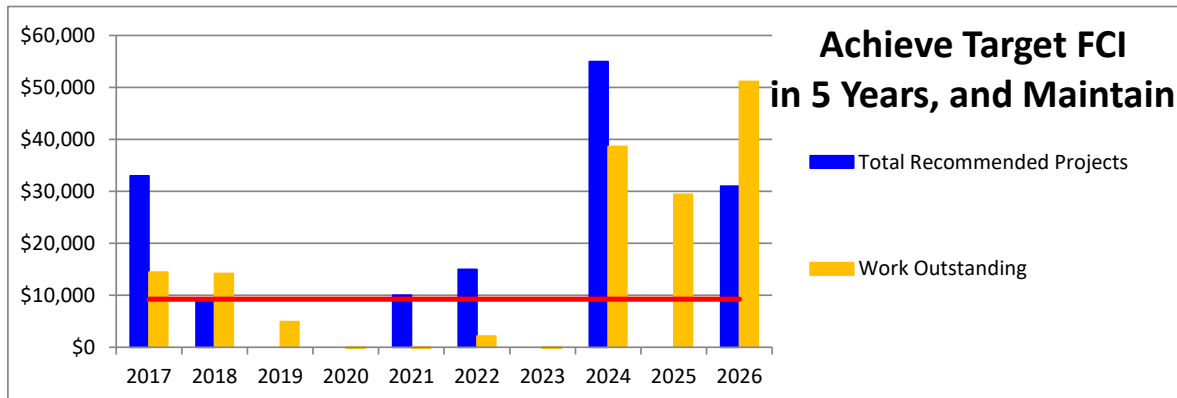
Priority	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1 – Immediate	30,000	0	0	0	0	0	0	0	0	0
2 - Restore Functionality	3,000	0	0	0	0	0	0	0	0	0
2b - Exceeded Service Life	0	0	0	0	0	0	0	0	0	0
3 - Future Renewal	0	9,000	0	0	10,000	15,000	0	55,000	0	31,000
Total in 2017 dollars	33,000	9,000	0	0	10,000	15,000	0	55,000	0	31,000

Minimum Funding to Achieve and Maintain Target FCI within 5 years: \$9,259

Work outstanding	14,482	14,223	4,964	-4,295	-3,555	2,186	-7,073	38,668	29,409	51,150
------------------	--------	--------	-------	--------	--------	-------	--------	--------	--------	--------

Minimum Funding to Achieve Target FCI within 10 years: \$9,259

Work outstanding	14,482	14,223	4,964	-4,295	-3,555	2,186	-7,073	38,668	29,409	51,150
------------------	--------	--------	-------	--------	--------	-------	--------	--------	--------	--------



Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	BLDG Type	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT		Photo	Description & History	CONDITION ASSESSMENT				LIFECYCLE DATA			RECOMMENDATION				OPINION OF PROBABLE COST											
							ID	Location / Type			Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars	
1	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	A Substructure	A10 Foundations	A1010 Standard Foundations	A101001 Wall Foundations	Underground/ Foundation	02	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of above-grade foundation wall on some elevations. As the facility was construction in three phases, the average year of construction is assumed to be 1975.	4	5	1975	21-Jul-17	MH	42	75	33	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
2	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103001 Standard Slab on Grade	Throughout Interior of Building At-Grade/ Slab-on-Grade	03	The floor is concrete slab-on-grade, with the lounge section of the building wood framed over crawspace. No evidence of major settlement or heaving was reported or observed. There was no access to the crawspace.	4	5	1975	21-Jul-17	MH	42	75	33	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. Maintain crawspace ventilation at the grilles through the foundation walls. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable	Yes	Yes	Yes	No								
3	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.		4	1975	21-Jul-17	MH	42	5	2	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	No	N/A	No	N/A	1	\$2,000	LS	\$2,000	0%	0%	5%	\$3,000
4	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	A Substructure	A10 Foundations	A1030 Slab on Grade	A103006 Foundation Drainage	Underground/ Perimeter Drains	x	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.		4	1975	21-Jul-17	MH	42	75	33	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal	N/A	N/A	No	No								
5	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B10 Superstructure	B10 Superstructure	B10 Superstructure	Throughout Interior of Building/ General Superstructure	04	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	4	5	1975	21-Jul-17	MH	42	75	33	Interior protected structural components are expected to last the life of the building.	Contingency	3 - Future Renewal	No	Yes	Yes	No								
6	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B10 Superstructure	B1010 Floor Construction	B101099 Other Floor Construction	Rear of Building/ Wood Balconies and Sheds	05-07	A painted wood frame covered balcony and wood frame shed are located on the exterior of the building. The framing is supported on floating concrete pedestals. Metal roof panels, which are corroding, shelter the structures. The age of the structures have been approximated.	4	4	1990	21-Jul-17	MH	27	30	10	The wood frame exterior structures appear in satisfactory condition; however, the condition of the balcony floor framing could not be verified (nor could the design of the framing members). Monitor the structures on a regular basis for deterioration. These items have been categorized as discretionary as they are outside the footprint of the base building. It would be prudent to maintain the roofs as long as possible to replace in conjunction with the balcony / shed.	Replacement	3 - Future Renewal	Yes	Yes	No	No	1	\$10,000	LS	\$10,000	0%	0%	0%	\$10,000
7	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201001 Exterior Enclosure	Front & Side Elevation/ Wood Siding, Soffit & Fascia	08/09	Wood lap siding, soffits and fascia is present on the exterior walls of the building. Approximately half of the wood siding is in fair-to-poor condition. Age of siding has been approximated.	3	4	1975	21-Jul-17	MH	42	50	8	Replace wood lap siding at end of service life. Paint siding and trim in year 1 of the capital plan to maintain the appearance of the exterior (maintenance).	Replacement	3 - Future Renewal	Yes	Yes	No	No	1200	\$20	LF	\$24,000	0%	15%	5%	\$29,000
8	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B20 Exterior Enclosure	B2010 Exterior Walls	B201001 Exterior Enclosure	Rear & Side Elevation/ Wood Siding, Soffit & Fascia	10	Painted wood vertical channel siding, soffits and fascia are present on the exterior walls of the building. Approximately half of the wood siding is in good condition. Age of siding has been approximated.	4	5	1990	21-Jul-17	MH	27	50	23	Replace vertical channel wood siding at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
9	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203001 Exterior Doors	Exterior Walls/ Egress Doors	11/12	Single outswing metal clad and wood doors are present at points of building egress. The front door (metal clad) is a newer unit and the rear door appears to have been installed during the construction of an addition. The age of the doors has been approximated and averaged.	4	5	1990	21-Jul-17	MH	27	40	13	Replace doors at end of service life, as-needed. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. The cost to replace doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
10	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203004 Garage Doors	Front Elevation/ Apparatus Bay Doors	13	Two painted wood sliding doors at the entrance to the apparatus bays. The doors are on steel tracks and are manually operated in the lateral direction. The age of the doors has been approximated.	3	5	1990	21-Jul-17	MH	27	30	10	Replace apparatus bay doors at end of service life, or until the automatic overhead doors are desired. Full replacement with modernized doors has been included in year 10 (optional expenditure).	Replacement	3 - Future Renewal	Yes	Yes	Yes	No	2	\$10,000	EA	\$20,000	0%	0%	5%	\$21,000
11	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B20 Exterior Enclosure	B2030 Exterior Doors	B203004 Garage Doors	Front Elevation/ Apparatus Bay Beam	14	Two painted wood sliding doors at the entrance to the apparatus bays. The doors are on steel tracks and are manually operated in the lateral direction. Rot on the exposed beam on the right-hand door was observed. The age of the doors has been approximated.	2	3	1990	21-Jul-17	MH	27	30	1	Beam replacement with metal cap flashing cost has been included in the Capital Plan in year 1.	Replacement	2 - Restore Functionality	No	Yes	Yes	Yes	1	\$3,000	LS	\$3,000	0%	0%	0%	\$3,000
12	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301002 Roofing - Low Sloped Roof	Roof/ SBS Membrane	15/16	The roof is an exposed 2-ply SBS modified membrane with internal drains. No leaks were reported or observed through the roof assembly itself; however, an open chimney was observed. Install a metal cap over the chimney to mitigate water ingress into the chimney chase. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	4	5	2007	21-Jul-17	MH	10	25	15	Replace roofing system including flashings, sealants, etc. at the end of service life. Consider overlaying roof with liquid-applied membrane to extend the life of the roof. Review this option during the next roof assessment.	Replacement	3 - Future Renewal	No	Yes	No	No								
13	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	B Shell	B30 Roofing	B3010 Roof Coverings	B301001 Slope Roof	Canopy Roof/ Cedar Shakes	17/18	The sloped canopy roof at the building front entrance is finished with cedar shakes. Age of the shakes has been approximated.	1	2	1990	21-Jul-17	MH	27	25	1	The cedar shakes will be replaced in 2017. The cost to replace the shakes is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	2 - Restore Functionality	No	Yes	Yes	No								
14	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C10 Interior Construction	C1020 Interior Doors	C102001 Standard Interior Doors	Throughout Interior of Building/ Doors	19	Wood veneer and painted wood doors are present the office, entrance to apparatus bays and bathrooms. The age of the doors have been approximated and averaged.	4	5	1990	21-Jul-17	MH	27	40	13	Replace doors at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
15	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	20-22	Two washrooms are present in the building. The standard equipment includes toilets and sinks in residential-type vanities. A urinal with custom flush tank has been installed in the men's room. Some plumbing fixtures have been updated since original construction.	4	5	2000	21-Jul-17	MH	17	30	13	General refurbishment of washrooms at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
16	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3030 Ceiling Finishes	C301005 Gypsum Board Wall and Ceiling Finishes	Interior Walls/ Paint	23	The interior walls in the washrooms, office and apparatus bays are finished with painted gypsum board. The age of the paint has been approximated and varies throughout the building.	3	5	2010	21-Jul-17	MH	7	15	8	Repaint interior common walls as needed. The painting has been considered as one bulk allowance for the entire building.	Contingency	4b - Discretionary Aesthetic	Yes	Yes	No	No	1	\$8,000	LS	\$8,000	0%	0%	0%	\$8,000

Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BUDG Name	BUDG Type	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT		CONDITION ASSESSMENT					LIFECYCLE DATA				RECOMMENDATION				OPINION OF PROBABLE COST													
							ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars			
17	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3030 Ceiling Finishes	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Lounge and Kitchen/ Ceiling Tile	24			The ceilings are a mix of painted gypsum board, painted plywood and acoustic tile in suspended T-bar. The age of the acoustic tile has been approximated.	3	5	1975	21-Jul-17	MH	42	50	8	Replace the ceiling tile and suspended T-bar at end of service life or during major interior renovations.	Contingency	3 - Future Renewal	Yes	Yes	No	No	1900	\$10	SF	\$19,000	0%	5%	15%	\$23,000
18	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3010 Wall Finishes	C301099 Other Wall Finishes	Interior Walls/ Wood Paneling	25			Wood paneling covers the interior walls in the lounge and service area. The age of the paneling has been approximated and averaged.	4	5	1990	21-Jul-17	MH	27	50	23	Replace paneling on the interior walls as needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal	Yes	Yes	No	No								
19	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302004 Resilient Floor Finishes	Floors/ Vinyl Tile	26/27			Vinyl composite tile installed in the lounge, and sheet vinyl flooring in the washrooms, was in good condition. The age of flooring has been approximated.	4	5	2000	21-Jul-17	MH	17	40	23	Replace vinyl flooring at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
20	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302005 Carpeting	Office/ Carpet	28			Commercial grade carpet installed in the office.	4	5	2002	21-Jul-17	MH	15	25	10	Replace carpet at end of service life. The cost to replace the carpet is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
21	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C30 Interior Finishes	C3020 Floor Finishes	C302007 Painting and Staining Floors	Apparatus Bays/ Concrete Floor Finish	29			The concrete slab-on-grade was originally finished with a paint coating. The coating has partially worn from pedestrian and vehicular traffic. Age of paint approximated.	3	4	2007	21-Jul-17	MH	10	15	5	Recoat the apparatus bay floor with a resilient coating.	Replacement	3 - Future Renewal	Yes	Yes	No	No	1344	\$6	SF	\$8,064	0%	15%	5%	\$10,000
22	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	C Interiors	C10 Interior Construction	C1030 Fittings	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	30			A residential-style kitchen is present and includes laminate counter tops and painted wood cabinets, a stainless steel sink and various appliances. The kitchen is original to the 1970's addition (age approximated). Painted wood cabinets are present in the work shop.	3	4	1975	21-Jul-17	MH	42	30	8	The kitchen and work shop fits the purpose of the facility and is in serviceable condition. Renovate the millwork as required by the occupants of the building (or in conjunction with the ceiling tile replacement). Note that appliances are not considered as base building equipment.	Replacement	3 - Future Renewal	Yes	Yes	No	No	1	\$3,000	LS	\$3,000	0%	0%	0%	\$3,000
23	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems	Washrooms, Hose Tower & Kitchen/ Exhaust Fans	x			Fractional horsepower exhaust fans used to exhaust air in washrooms. The age of the exhaust fans has been approximated.	3	5	1990	21-Jul-17	MH	27	25	5	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
24	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D30 HVAC	D3040 Distribution Systems	D304007 Exhaust Systems	Apparatus Bay/ Exhaust System	31			The truck exhaust pipes connect to ducting that is exhausted from the building by an exhaust fan. The fan type and CFM ratings were unknown. Age of the exhaust system has been approximated.	4	5	2005	21-Jul-17	MH	12	30	18	Replace or overhaul the exhaust fan at end of service life. It is our understanding that this system has been approved for use by WorkSafe BC. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	No	No	No								
25	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	32			Water for domestic service is provided by the Regional District. Piping is primarily of copper. Age of the piping has been approximated.	4	5	1975	21-Jul-17	MH	42	40	5	Complete localized repairs as may be necessary as the building ages. Based on the limited plumbing fixtures (two washrooms and a kitchen sink), the repairs would be completed as needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal	Yes	Yes	No	No								
26	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D20 Plumbing	D2030 Sanitary Waste	D203001 Waste Pipe and Fittings	Throughout Interior of Building/ Sanitary Piping	33			Sanitary piping is comprised of ABS, where visible, and is likely cast-iron in concealed locations. Piping discharges waste to the municipal sewer system. The age of the piping has been approximated.	4	5	1990	21-Jul-17	MH	27	60	23	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
27	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D20 Plumbing	D2020 Domestic Water Distribution	D202003 Domestic Water Equipment - Tanks	Workshop/ Hot Water Heating Tank	34			A 184 L, John Wood, 3000 W domestic hot water heating tank supplies tempered water to the building's plumbing fixtures.	3	3	2009	21-Jul-17	MH	8	10	2	Consider replacing the domestic hot water heating tank prior to the end of service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	No	Yes	No	No								
28	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D30 HVAC	D3020 Heat Generating Systems	D302003 Furnaces	Service Room/ Furnace	35/36			A 125 MBTU/hr Airco oil-fired furnace with digital thermostat provides heating for the facility. A note on the unit identified the installation date as 1983. The oil tank was not reviewed.	3	3	1983	21-Jul-17	MH	34	40	6	Consider replacing the oil furnace with a higher-efficiency unit. This recommendation may not suit the needs of the facility due to the reported number of power outages. The cost to install a heat pump system, commensurate with the other fire halls in the CVRD, has been included in the capital plan as a placeholder value.	Replacement	3 - Future Renewal	No	Yes	No	No	1	\$15,000	EA	\$15,000	0%	0%	0%	\$15,000
29	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D5010 Electrical Services and Distribution	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	37-40			The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 100A circuit breaker panel (original) and a 200A sub-panel. The main / secondary switches and sub panel have been upgraded since original construction. The age of equipment has been approximated.	4	5	2010	21-Jul-17	MH	7	60	53	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	Yes	No								
30	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	x			Wiring throughout the facility is assumed to be copper. Devices include all house voltage switches and outlets. Some of the wiring has been replaced / upgraded during renovations. The wiring has been taken as primarily 1975 vintage.	4	5	1975	21-Jul-17	MH	42	60	18	Replace or upgrade wiring as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
31	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Throughout Interior of Building/ Low-Voltage Fixtures	41			The lighting within the building is primarily fluorescent tube fixtures with some low-voltage incandescent fixtures. The age of the lighting fixtures has been approximated.	3	5	1990	21-Jul-17	MH	27	25	2	Replace older T-12 fluorescent fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures. This work could be undertaken as bulbs / ballasts fail or as a wholesale project for energy efficiency purposes.	Replacement	3 - Future Renewal	Yes	No	No	No	35	\$200	EA	\$7,000	0%	15%	5%	\$9,000
32	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D5020 Lighting and Branch Wiring	D502002 Lighting Equipment	Exterior Walls/ Light Fixtures	42			The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the LED fixtures has been approximated.	4	5	2010	21-Jul-17	MH	7	25	18	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	Yes	No	No								
33	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D50230 Communications and Security	D503008 LAN, TV, Telephone	Interior of Building/ Infrastructure Cabling	x			The facility is served by LAN and telephone cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	4	5	2005	21-Jul-17	MH	12	25	13	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	Partial	No								

Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	BLDG Type	Location / Address	Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	COMPONENT		CONDITION ASSESSMENT					LIFECYCLE DATA			RECOMMENDATION				OPINION OF PROBABLE COST														
							ID	Location / Type	Photo	Description & History	Condition	Performance	Yr. New or Last Major Action	Assessment Date	Assessed By	Age in 2017	Typical Life Cycle or Action Interval	Est. Time Remaining to EOL or Major Action	Recommendation	Type	Priority	Can this work be phased over multiple years?	If recommended work not complete can the rate of deterioration be expected to increase?	Will a failure in this system lead to a loss of use of the facility?	Can the current condition adversely affect the buildings security of safety?	Quantity	Unit Rate	Unit	Subtotal Repair or Replacement Cost	Contingency	5% Tax	Total in 2017 Dollars			
34	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D3050 Terminal and Package Units	D305005 Electric Heating	Office/ Electric Baseboard Heaters	43			Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating in the office. Age of equipment approximated.	4	5	2002	21-Jul-17	MH	15	40	25	Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal	Yes	No	No	No								
35	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D50230 Communications and Security	D503001 Fire Alarm Systems	N/A/ Fire Alarm System	44			There is no fire alarm system at the facility. A partial smoke detector is present in the work shop area.		2	N/A	21-Jul-17	MH	N/A	20	1	Install monitored fire alarm system with pull stations, bells and heat / smoke detectors.	New	1 - Immediate	No	No	No	Yes	1	\$30,000	LS	\$30,000	0%	0%	0%	\$30,000
36	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	D Services	D50 Electrical	D50230 Communications and Security	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	45			A Yanmar diesel emergency generator is located on a concrete pad outside of the building footprint. Dedicated receptacles have been installed and require manual switchover during power outages. Age of equipment approximated.	4	4	2002	21-Jul-17	MH	15	40	25	Although the generator was reported functional and is tested regularly, the system is limited in capability. This item falls outside the ten year plan and costs associated with this item have not been carried into the cash flow tables. CVRD to determine whether the system meets the needs of the facility.	Replacement	3 - Future Renewal	No	Yes	No	No								
37	Mesachie Lake Fire Hall		9295 Carlton Rd, Mesachie Lake, BC	P Professional Services	P Professional Services	P Professional Services	P100001 Seismic Review	Further Study	x			For conducting a seismic screening of the building, including review the concrete slab in the fuel storage shed. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).		3		21-Jul-17	MH	0	10	1	Conduct seismic screening.	Study	Not Applicable	No	No	Yes	No	1	\$3,500	LS	\$3,500	0%	0%	5%	\$4,000

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION			DN OF PROBABL Total In 2017 Dollars	10-YEAR CAPITAL PLAN										
		ID	Location / Type		Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
									\$37,000	\$12,000	\$0	\$0	\$10,000	\$15,000	\$0	\$63,000	\$0	\$31,000	
1	Mesachie Lake Fire Hall	A101001 Wall Foundations	Underground/ Foundation	The foundation is comprised of cast-in-place concrete footings with concrete foundation walls. The foundation is concealed from review, with the exception of above-grade foundation wall on some elevations. As the facility was construction in three phases, the average year of construction is assumed to be 1975.	The foundations are expected to remain serviceable for the life of the building. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable												
2	Mesachie Lake Fire Hall	A103001 Standard Slab on Grade	Throughout Interior of Building/ At-Grade/ Slab-on-Grade	The floor is concrete slab-on-grade, with the lounge section of the building wood framed over crawlspace. No evidence of major settlement or heaving was reported or observed. There was no access to the crawlspace.	The concrete slab-on-grade is expected to remain serviceable for the life of the building, with isolated repairs, if needed. Maintain crawlspace ventilation at the grilles through the foundation walls. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Not Applicable	Not Applicable												
3	Mesachie Lake Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	Periodic camera inspection and isolated repairs as required.	Study	Not Applicable	\$3,000		\$3,000									
4	Mesachie Lake Fire Hall	A103006 Foundation Drainage	Underground/ Perimeter Drains	Perimeter drain pipes are assumed to be installed at the footing level. No issues related to foundation drainage were noted by facility staff. No information was available regarding the scoping of the system to review for continuity.	The foundation drainage is expected to last the life of the building. No major capital expenditures are expected to be required. This should be updated with the results of the foundation drainage review recommended in A103006 Foundation Drainage (above).	Contingency	3 - Future Renewal												
5	Mesachie Lake Fire Hall	B10 Superstructure	Throughout Interior of Building/ General Superstructure	The superstructure is comprised of wood framing on all four walls and roof trusses, supported on a cast-in-place concrete foundation. No settlement or other evidence of structural distress was observed or reported. There was no evidence or reports of long-term leakage that would allude to concealed structural damage.	Interior protected structural components are expected to last the life of the building.	Contingency	3 - Future Renewal												
6	Mesachie Lake Fire Hall	B101099 Other Floor Construction	Rear of Building/ Wood Balconies and Sheds	A painted wood frame covered balcony and wood frame shed are located on the exterior of the building. The framing is supported on floating concrete pedestals. Metal roof panels, which are corroding, shelter the structures. The age of the structures have been approximated.	The wood frame exterior structures appear in satisfactory condition; however, the condition of the balcony floor framing could not be verified (nor could the design of the framing members). Monitor the structures on a regular basis for deterioration. These items have been categorized as discretionary as they are outside the footprint of the base building. It would be prudent to maintain the roofs as long as possible to replace in conjunction with the balcony / shed.	Replacement	3 - Future Renewal	\$10,000											\$10,000
7	Mesachie Lake Fire Hall	B201001 Exterior Enclosure	Front & Side Elevation/ Wood Siding, Soffit & Fascia	Wood lap siding, soffits and fascia is present on the exterior walls of the building. Approximately half of the wood siding is in fair-to-poor condition. Age of siding has been approximated.	Replace wood lap siding at end of service life. Paint siding and trim in year 1 of the capital plan to maintain the appearance of the exterior (maintenance).	Replacement	3 - Future Renewal	\$29,000								\$29,000			
8	Mesachie Lake Fire Hall	B201001 Exterior Enclosure	Rear & Side Elevation/ Wood Siding, Soffit & Fascia	Painted wood vertical channel siding, soffits and fascia are present on the exterior walls of the building. Approximately half of the wood siding is in good condition. Age of siding has been approximated.	Replace vertical channel wood siding at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
9	Mesachie Lake Fire Hall	B203001 Exterior Doors	Exterior Walls/ Egress Doors	Single outswing metal clad and wood doors are present at points of building egress. The front door (metal clad) is a newer unit and the rear door appears to have been installed during the construction of an addition. The age of the doors has been approximated and averaged.	Replace doors at end of service life, as-needed. Replace weatherstripping and complete minor repairs and adjustment as part of maintenance. The cost to replace doors is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal												
10	Mesachie Lake Fire Hall	B203004 Garage Doors	Front Elevation/ Apparatus Bay Doors	Two painted wood sliding doors at the entrance to the apparatus bays. The doors are on steel tracks and are manually operated in the lateral direction. The age of the doors has been approximated.	Replace apparatus bay doors at end of service life, or until the automatic overhead doors are desired. Full replacement with modernized doors has been included in year 10 (optional expenditure).	Replacement	3 - Future Renewal	\$21,000											\$21,000

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT Description & History	RECOMMENDATION Recommendation	Type	Priority	ON OF PROBABL Total in 2017 Dollars	10-YEAR CAPITAL PLAN											
		ID	Location / Type						2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		
									\$37,000	\$12,000	\$0	\$0	\$10,000	\$15,000	\$0	\$63,000	\$0	\$31,000		
11	Mesachie Lake Fire Hall	B203004 Garage Doors	Front Elevation/ Apparatus Bay Beam	Two painted wood sliding doors at the entrance to the apparatus bays. The doors are on steel tracks and are manually operated in the lateral direction. Rot on the exposed beam on the right-hand door was observed. The age of the doors has been approximated.	Beam replacement with metal cap flashing cost has been included in the Capital Plan in year 1.	Replacement	2 - Restore Functionality	\$3,000	\$3,000											
12	Mesachie Lake Fire Hall	B301002 Roofing - Low Sloped Roof	Roof/ SBS Membrane	The roof is an exposed 2-ply SBS modified membrane with internal drains. No leaks were reported or observed through the roof assembly itself; however, an open chimney was observed.	Replace roofing system including flashings, sealants, etc. at the end of service life. Consider overlaying roof with liquid-applied membrane to extend the life of the roof. Review this option during the next roof assessment. Install a metal cap over the chimney to mitigate water ingress into the chimney chase. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
13	Mesachie Lake Fire Hall	B301001 Slope Roof	Canopy Roof/ Cedar Shakes	The sloped canopy roof at the building front entrance is finished with cedar shakes. Age of the shakes has been approximated.	The cedar shakes will be replaced in 2017. The cost to replace the shakes is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	2 - Restore Functionality													
14	Mesachie Lake Fire Hall	C102001 Standard Interior Doors	Throughout Interior of Building/ Doors	Wood veneer and painted wood doors are present the office, entrance to apparatus bays and bathrooms. The age of the doors have been approximated and averaged.	Replace doors at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
15	Mesachie Lake Fire Hall	C103002 Toilet and Bath Accessories, Rehab	Washrooms/ Fixtures and Millwork	Two washrooms are present in the building. The standard equipment includes toilets and sinks in residential-type vanities. A urinal with custom flush tank has been installed in the men's room. Some plumbing fixtures have been updated since original construction.	General refurbishment of washrooms at the end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
16	Mesachie Lake Fire Hall	C301005 Gypsum Board Wall and Ceiling Finishes	Interior Walls/ Paint	The interior walls in the washrooms, office and apparatus bays are finished with painted gypsum board. The age of the paint has been approximated and varies throughout the building.	Repaint interior common walls as needed. The painting has been considered as one bulk allowance for the entire building.	Contingency	4b - Discretionary Aesthetic	\$8,000										\$8,000		
17	Mesachie Lake Fire Hall	C301005 Gypsum Board Wall and Ceiling Finishes	Throughout Lounge and Kitchen/ Ceiling Tile	The ceilings are a mix of painted gypsum board, painted plywood and acoustic tile in suspended T-bar. The age of the acoustic tile has been approximated.	Replace the ceiling tile and suspended T-bar at end of service life or during major interior renovations.	Contingency	3 - Future Renewal	\$23,000										\$23,000		
18	Mesachie Lake Fire Hall	C301099 Other Wall Finishes	Interior Walls/ Wood Paneling	Wood paneling covers the interior walls in the lounge and service area. The age of the paneling has been approximated and averaged.	Replace paneling on the interior walls as needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal													
19	Mesachie Lake Fire Hall	C302004 Resilient Floor Finishes	Floors/ Vinyl Tile	Vinyl composite tile installed in the lounge, and sheet vinyl flooring in the washrooms, was in good condition. The age of flooring has been approximated.	Replace vinyl flooring at end of service life. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
20	Mesachie Lake Fire Hall	C302005 Carpeting	Office/ Carpet	Commercial grade carpet installed in the office.	Replace carpet at end of service life. The cost to replace the carpet is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
21	Mesachie Lake Fire Hall	C302007 Painting and Staining Floors	Apparatus Bays/ Concrete Floor Finish	The concrete slab-on-grade was originally finished with a paint coating. The coating has partially worn from pedestrian and vehicular traffic. Age of paint approximated.	Recoat the apparatus bay floor with a resilient coating.	Replacement	3 - Future Renewal	\$10,000					\$10,000							

Start Yr
2017 Cowichan Valley Regional District
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			DN OF PROBABLI	10-YEAR CAPITAL PLAN											
		ID	Location / Type		Description & History	Recommendation	Type		Priority	Total In 2017 Dollars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
											\$37,000	\$12,000	\$0	\$0	\$10,000	\$15,000	\$0	\$63,000	\$0	\$31,000
22	Mesachie Lake Fire Hall	C103008 Counters and C103009 Cabinets	Kitchen/ Millwork and Cabinetry	A residential-style kitchen is present and includes laminate counter tops and painted wood cabinets, a stainless steel sink and various appliances. The kitchen is original to the 1970's addition (age approximated). Painted wood cabinets are present in the work shop.	The kitchen and work shop fits the purpose of the facility and is in serviceable condition. Renovate the millwork as required by the occupants of the building (or in conjunction with the ceiling tile replacement). Note that appliances are not considered as base building equipment.	Replacement	3 - Future Renewal	\$3,000									\$3,000			
23	Mesachie Lake Fire Hall	D304007 Exhaust Systems	Washrooms, Hose Tower & Kitchen/ Exhaust Fans	Fractional horsepower exhaust fans used to exhaust air in washrooms. The age of the exhaust fans has been approximated.	Replace fans as they fail. The cost to replace the exhaust fans is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
24	Mesachie Lake Fire Hall	D304007 Exhaust Systems	Apparatus Bay/ Exhaust System	The truck exhaust pipes connect to ducting that is exhausted from the building by an exhaust fan. The fan type and CFM ratings were unknown. Age of the exhaust system has been approximated.	Replace or overhaul the exhaust fan at end of service life. It is our understanding that this system has been approved for use by WorkSafe BC. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
25	Mesachie Lake Fire Hall	D202001 Pipes and Fittings	Throughout Interior of Building/ Water Piping	Water for domestic service is provided by the Regional District. Piping is primarily of copper. Age of the piping has been approximated.	Complete localized repairs as may be necessary as the building ages. Based on the limited plumbing fixtures (two washrooms and a kitchen sink), the repairs would be completed as needed. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Contingency	3 - Future Renewal													
26	Mesachie Lake Fire Hall	D023001 Waste Pipe and Fittings	Throughout Interior of Building/ Sanitary Piping	Sanitary piping is comprised of ABS, where visible, and is likely cast-iron in concealed locations. Piping discharges waste to the municipal sewer system. The age of the piping has been approximated.	Complete localized repairs as may be necessary as the building ages. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
27	Mesachie Lake Fire Hall	D202003 Domestic Water Heating Tanks	Workshop/ Hot Water Heating Tank	A 184 L, John Wood, 3000 W domestic hot water heating tank supplies tempered water to the building's plumbing fixtures. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Consider replacing the domestic hot water heating tank prior to the end of service life to reduce the risk of water damage. The cost to replace the domestic hot water heating tank is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
28	Mesachie Lake Fire Hall	D302003 Furnaces	Service Room/ Furnace	A 125 MBTU/hr Airco oil-fired furnace with digital thermostat provides heating for the facility. A note on the unit identified the installation date as 1983. The oil tank was not reviewed.	Consider replacing the oil furnace with a higher-efficiency unit. This recommendation may not suit the needs of the facility due to the reported number of power outages. The cost to install a heat pump system, commensurate with the other fire halls in the CVRD, has been included in the capital plan as a placeholder value.	Replacement	3 - Future Renewal	\$15,000						\$15,000						
29	Mesachie Lake Fire Hall	D501003 Main & Secondary Switchgear	Apparatus Bay/ Main Circuit Breaker	The electrical service enters the building via overhead wiring and is distributed to branch wiring through a 100A circuit breaker panel (original) and a 200A sub-panel. The main / secondary switches and sub panel have been upgraded since original construction. The age of equipment has been approximated.	Replace circuit breaker panels at end of service life. Perform infra-red thermography (IR scan) on the electrical equipment to monitor the condition and to further predict the renewal requirements (operational / maintenance expenditure). This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													
30	Mesachie Lake Fire Hall	D502002 Branch Wiring & Devices	Throughout Interior of Building/ Wiring	Wiring throughout the facility is assumed to be copper. Devices include all house voltage switches and outlets. Some of the wiring has been replaced / upgraded during renovations. The wiring has been taken as primarily 1975 vintage.	Replace or upgrade wiring as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal													

Start Yr
2017 **Cowichan Valley Regional District**
Facility Condition Assessment and Capital Plan
Mesachie Lake Fire Hall, 9295 Carlton Rd, Mesachie Lake, BC

Row	BLDG Name	COMPONENT		CONDITION ASSESSMENT	RECOMMENDATION			DN OF PROBABLI Total In 2017 Dollars	10-YEAR CAPITAL PLAN									
		ID	Location / Type	Description & History	Recommendation	Type	Priority		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
									\$37,000	\$12,000	\$0	\$0	\$10,000	\$15,000	\$0	\$63,000	\$0	\$31,000
31	Mesachie Lake Fire Hall	D502002 Lighting Equipment	Throughout Interior of Building/ Low-Voltage Fixtures	The lighting within the building is primarily fluorescent tube fixtures with some low-voltage incandescent fixtures. The age of the lighting fixtures has been approximated.	Replace older T-12 fluorescent fixtures at end of service life. Upgrade to higher efficient lighting such as T8 and/or LED fixtures. This work could be undertaken as bulbs / ballasts fail or as a wholesale project for energy efficiency purposes.	Replacement	3 - Future Renewal	\$9,000		\$9,000								
32	Mesachie Lake Fire Hall	D502002 Lighting Equipment	Exterior Walls/ Light Fixtures	The exterior lighting is a combination of high-intensity discharge and LED replacement fixtures. The age of the LED fixtures has been approximated.	Replace the HID fixtures with LED as ballasts fail. The cost to replace the remaining HID lights is expected to arrive at less than the threshold value of the report and has not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
33	Mesachie Lake Fire Hall	D503008 LAN, TV, Telephone	Interior of Building/ Infrastructure Cabling	The facility is served by LAN and telephone cabling. Upgrades have been performed over the years as technology has advanced. The age of the cabling infrastructure varies and the year of installation has been taken as 2005.	Upgrade low-voltage cable infrastructure as required. This item falls outside the ten year plan, costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
34	Mesachie Lake Fire Hall	D305005 Electric Heating	Office/ Electric Baseboard Heaters	Electrical baseboard heaters with dedicated bi-metallic thermostats provide supplemental heating in the office. Age of equipment approximated.	Replace thermostats and baseboard heaters as-needed. This item falls outside the ten year plan (and less than the threshold value of the report), costs associated with this item have not been carried into the cash flow tables.	Replacement	3 - Future Renewal											
35	Mesachie Lake Fire Hall	D503001 Fire Alarm Systems	N/A/ Fire Alarm System	There is no fire alarm system at the facility. A partial smoke detector is present in the work shop area.	Install monitored fire alarm system with pull stations, bells and heat / smoke detectors.	New	1 - Immediate	\$30,000	\$30,000									
36	Mesachie Lake Fire Hall	D509002 Emergency Lighting and Power	Exterior of Building/ Emergency Generator	A Yanmar diesel emergency generator is located on a concrete pad outside of the building footprint. Dedicated receptacles have been installed and require manual switchover during power outages. Age of equipment approximated.	Although the generator was reported functional and is tested regularly, the system is limited in capability. This item falls outside the ten year plan and costs associated with this item have not been carried into the cash flow tables. CVRD to determine whether the system meets the needs of the facility.	Replacement	3 - Future Renewal											
37	Mesachie Lake Fire Hall	P100001 Seismic Review	Further Study	For conducting a seismic screening of the building, including review the concrete slab in the fuel storage shed. The screening will be done according to the "Manual for Screening of Buildings for Seismic Investigation", published by the National Research Council of Canada (1992).	Conduct seismic screening.	Study	Not Applicable	\$4,000	\$4,000									

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 01



Photo 02

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 03



Photo 04

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 05



Photo 06

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 07



Photo 08

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 09



Photo 10

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 11



Photo 12

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 13



Photo 14

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 15



Photo 16

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 17



Photo 18

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 19



Photo 20

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 21



Photo 22

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 23



Photo 24

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 25



Photo 26

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 27



Photo 28

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 29



Photo 30

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 31



Photo 32

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 33



Photo 34

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 35



Photo 36

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 37



Photo 38

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 39



Photo 40

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 41



Photo 42

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 43



Photo 44

**Cowichan Valley Regional District
Mesachie Lake Fire Hall - Report Photos**



Photo 45