



District of Central Saanich

# Facility Long-term Asset Management Plan (F-LAMP)

Report No.0 – Master Report

Submitted by:  
**LEVELTON CONSULTANTS LTD.**

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**EXECUTIVE SUMMARY**

In September of 2014 the District of Central Saanich ("The District") retained Levelton Consultants Ltd. ("Levelton") to develop a facility long-term asset management (F-LAMP) plan for 46 District-owned buildings. This report presents a higher integrated view of four Sub-Reports, each with its own group of buildings.

District-owned buildings support several critical functions of local government, public works/services, community development and emergency operations. They serve as storage for records, historic documents, and specialized vehicles/equipment. Furthermore, they provide recreation, community-based activities and programmes, and a regional cultural identity. Collectively they represent a substantial portion of District capital assets. For these reasons, the District has commissioned a facility long-term asset management plan (F-LAMP) spanning the next twenty years (2015-2035) to measure and monitor anticipated upcoming maintenance and renewal expenses. The Master Report is intended to highlight overall expenses and therefore funding needs, while the four Sub-Reports allow for categorical review of each building and its key components.

The management of all the District's facility assets over the next twenty years are summarized in Table i, where the costs are combined into five-year increments.

*Table i: Summary of Group Costs every 5 years*

Report	Value	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs	% Total
1 – Municipal Buildings	Present	\$834,095	\$409,820	\$508,140	\$537,760	\$2,289,815	63%
	Future	\$887,094	\$484,220	\$664,697	\$773,944	\$2,809,955	
2 – Parks and Recreation	Present	\$166,482	\$53,755	\$61,360	\$147,870	\$429,467	12%
	Future	\$174,061	\$63,897	\$80,652	\$212,741	\$531,351	
3 – Heritage	Present	\$156,495	\$120,730	\$33,270	\$111,900	\$422,395	12%
	Future	\$165,070	\$142,568	\$42,620	\$160,387	\$510,645	
4 – External Users	Present	\$154,420	\$154,418	\$100,926	\$74,604	\$484,368	13%
	Future	\$163,275	\$179,774	\$132,544	\$105,500	\$581,094	
<b>Total</b>	Present	\$1,311,492	\$738,723	\$703,696	\$872,134	\$3,626,045	<b>100%</b>
	Future	\$1,389,499	\$870,459	\$920,514	\$1,252,573	\$4,433,045	



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# 1. INTRODUCTION

## 1.1. TERMS OF REFERENCE

In September of 2014 the District of Central Saanich (“The District”) retained Levelton Consultants Ltd. (“Levelton”) to develop a facility long-term asset management plan for 46 District-owned buildings.

Levelton has prepared this report solely for the use of the client and their lessees. Levelton accepts no responsibility for damages suffered by third parties as a result of decisions or actions based on this report. Levelton does not claim to have uncovered or identified all building system deficiencies during the course of this work.

## 1.2. SCOPE OF SERVICES

Levelton conducted the scope of work provided as per the Levelton Consultants Ltd. proposal dated August 5, 2014. This scope of work included:

- A start-up meeting with Levelton staff and the District to confirm intentions, priorities, methodology, and district contacts for each building group.
- Site visits to each building, chaperoned by District staff or external users, gathering information on each building system condition (interior finishes, building envelope, electrical, mechanical, and miscellaneous where appropriate), apparent deficiencies, restorative maintenance, and further investigation.
- A progress meeting with Levelton staff and the District to discuss findings and garner feedback
- Development of a prioritized 20-year plan for each facility asset from estimated remaining service life, last renewal date and period of renewal.

In all cases, an asset pertaining to a particular building was included if it was a part of the building’s construction secured to the structure of building. Some exceptions were made: for example, kitchen equipment at ball-diamond concessions were excluded. A more detailed list of exclusions can be found in Section 0. Levelton sub-contracted electrical and mechanical services to Houle Electric Ltd. and West Bay Mechanical, respectively. Levelton coordinated the sub-contractors and incorporated their efforts into the reporting.

## 1.3. REPORT ORGANIZATION

This Master Report provides an overview of the four Sub-Reports (Municipal, Parks & Recreation, Heritage, and External Users) to provide a complete and contextual view of the maintenance and replacement costs for all of the Districts buildings. For specific information regarding the Sub-Reports or any particular building please refer to one of the Sub-Reports or their related appendices.

Section 1 of this report provides general information regarding the scope of work, objectives, preferences and assumptions made in the reporting.



Sections 2 and 3 provide the overall asset summary and Group reporting, respectively. The overall asset summary provides a high-level overview of the four Sub-Reports, highlighting anticipated maintenance and replacement expenses at five year increments over the next 20 years. The Group reporting gives a more specific breakdown by presenting the 20-year anticipated maintenance and replacement expenses at five year increments for each building contained within a group. Appendix I contains forecasting for the overall summary at the group level. Each of the Sub-Reports then contains further detail and forecasting for each building at a component level (cladding, roofing, etc.) and forecasting for the group of buildings at a system level (building envelope, interior finishes, etc.). We have chosen to describe the buildings by organizing the components into these categories where applicable: Interior Finishes, Building Envelope, Electrical, Mechanical, and Miscellaneous. We further list building specific components or groups of components within each system.

*Table 1: Distribution Outline of Reports.*

Master Report				
	Report 1	Report 2	Report 3	Report 4
	Municipal	Parks and Recreation	Heritage	External Users
Buildings	1(a,b,c) – Municipal Hall 5-9, and 45-49	10 – Rom Knott and 11-19, 39 and 44	20 – Butterfield Barn and Coop  and 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, and 38	4 – Fire Museum  and 40, 41, 42, and 43
Total (46)	11	12	18	5

Notes: Excluded: boat building storage (No. 33)

Refer to Appended 'Building Reference Table' for the complete list of buildings and their numbering

Although every effort has been made to ensure that the report is appropriate for a non-technical audience, some readers may not be familiar with the terminology used in building science. Therefore, Appendix IV contains a glossary of technical terms.

#### 1.4. DISTRICT OBJECTIVES

District-owned buildings support several critical functions of local government, public works/services, community development and emergency operations. They serve as storage for records, historic documents, and specialized vehicles/equipment. Furthermore, they provide recreation, community-based activities and programmes, and regional cultural identity. Collectively, they represent a substantial portion of District capital assets. For these reasons, the District has commissioned a long-term asset management plan span the next twenty years (2015-2035) to measure and monitor anticipated upcoming expenses in maintenance and renewal. Expenses included in this report represent F-LAMP expenses. As a brief aside, F-LAMP expenses differ from operating expenses (janitorial, annual servicing/inspection) in that they occur less frequently (upwards of 80-year renewal periods), are financially great enough to require advance planning and funding, and their condition is fundamental to the operation, performance, health and safety of the building.



The District has outlined the following objectives for the plan:

- Maximize useful life of each facility
- Protection of assets
- Cost savings over the long term
- Enhanced public safety and health
- Reduced disruption of services and greater efficiencies

By performing the long-term asset management plan, the following benefits are also anticipated:

- Improved health and safety of all building inhabitants
- Efficient building operation and performance
- A productive environment for employees
- Preserved integrity and character of heritage facilities

Creating a 20-year plan for District building infrastructure engages a proactive roadmap to campaign and allocate funds with resultant purpose and intent. These reports are intended to assist decision makers with planning of capital and operational budgets toward future investment in District-owned buildings.

### 1.5. DISTRICT PREFERENCES

Within the request for proposal, and at start-up and progress meetings, the District described some preferences that were addressed within Levelton's reporting. The general intention with the building components is maintenance in perpetuity without renewal, a common example being diligent maintenance of wood board siding (cleaning, substrate prep, and painting) instead of replacing the siding. When required, renewal is prioritized by building function and operation. Health-and-safety services such as fire, police, and government are given greatest priority.

Preference towards heritage buildings is to maintain indefinitely at steady state, and to prevent deterioration while preserving heritage appeal. The District generally adheres to the Government of Canada's *"Standards & Guidelines for the Conservation of Historic Places in Canada – Second Edition"* in their approach to managing the maintenance of heritage buildings. These guidelines primarily deal with preserving the original form and character of heritage sites, advocating repair and stabilization more than replacement of components.

Phasing maintenance and renewal by elevation (varying exposures) was deemed too detailed for the District's intentions. Similarly, buildings with multiple roofs renewed at different times of different sizes would instead be modelled as being renewed for, say 5 years, an equal amount each year. Statistically the sensitivity of the overall model to this inaccuracy and approximation is expected to be low, and lower than the sensitivity to, say, available funding or differences between bids at tender. In all cases, the intended future use(s) of the building was considered when determining the level of renewal required to serve out the building's remaining service life.

### 1.6. ASSUMPTIONS

A number of reasonable assumptions were necessary to simplify the reporting process. Where architectural drawings were not available to perform quantity takeoffs, a measuring-wheel, measuring-tape and photographs



were used to estimate building dimensions. Where specific ages or previous maintenance of building components were unavailable, assumptions were made based on our visual review.

Assumptions regarding the age of mechanical and electrical equipment were made by sub-contractors where applicable. Where installation dates were not available from The District, the sub-contractor assigned an age to each respective component from assessment of physical condition, generation of technology, and technical knowledge. Estimates provided by Levelton, Houle Electric, and West Bay Mechanical are of class 4/5 nature (screening to feasibility). At the time of replacement it is expected that The District will seek a quotation from specific contractors or tendering proponents.

For newer buildings or renewal events further away from the present, there is a need to acknowledge the inability to be accurate to say, the nearest year such that a 15 20, 25 year service life approximation is applied. This creates a 'binning' effect at these years (see for example Building No.5-Fire Station #1). In actuality, renewal can and would occur around these dates. We separately applied a normal distribution curve to these dates where the likelihood changed randomly, and found that lower-funded scenarios were less able to weather unexpected earlier expenses.

## 2. OVERALL ASSET SUMMARY

### 2.1. OVERALL REPORTING

The management of assets over the next twenty years for The District is summarized in Table 2, where the costs are combined into five-year increments.

The groups of buildings from reports 2, 3 and 4 represent similar group expenses. All three of these reports are forecasted to be between \$400,000 and \$500,000 (present value) over the 20 year report period. The group of buildings associated with Report 1, the municipal buildings, represent the majority of the forecasted expenses, totalling more than the other three report groups combined and representing close to two-thirds (63%) of total projected maintenance and replacement costs.

Table 2: Summary of Group Costs every 5 years

Report	Value	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs	% Total
1 – Municipal Buildings	Present	\$834,095	\$409,820	\$508,140	\$537,760	\$2,289,815	63%
	Future	\$887,094	\$484,220	\$664,697	\$773,944	\$2,809,955	
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	Future	\$163,275	\$179,774	\$132,544	\$105,500	\$581,094	
<b>Total</b>	Present	\$1,311,492	\$738,723	\$703,696	\$872,134	\$3,626,045	<b>100%</b>
	Future	\$1,389,499	\$870,459	\$920,514	\$1,252,573	\$4,433,045	



Figure 1 displays the combined expenses (maintenance, replacement and restorative maintenance) from all four groups of buildings over the next 20 years. The first five years signify the greatest expense years with the peak year occurring in 2020 at almost \$450,000 (future value). The majority of these expenses are replacement costs originating from the Municipal Buildings Group, most notably the aging Municipal Hall. Years 6-15 show a decrease in expenses before ramping up again for the final five years where the combination of aging systems and 10-20 year renewals from the first five years are once again up for replacement. Maintenance costs vary over the 20 years from \$10,000 (2019) to \$70,000 (2021). As previously mentioned expenses were tabulated for F-LAMP expenses only, annual operating expenses such as cleaning roofs, small building envelope repairs and janitorial work were assumed to occur internally through District staff and were not included.

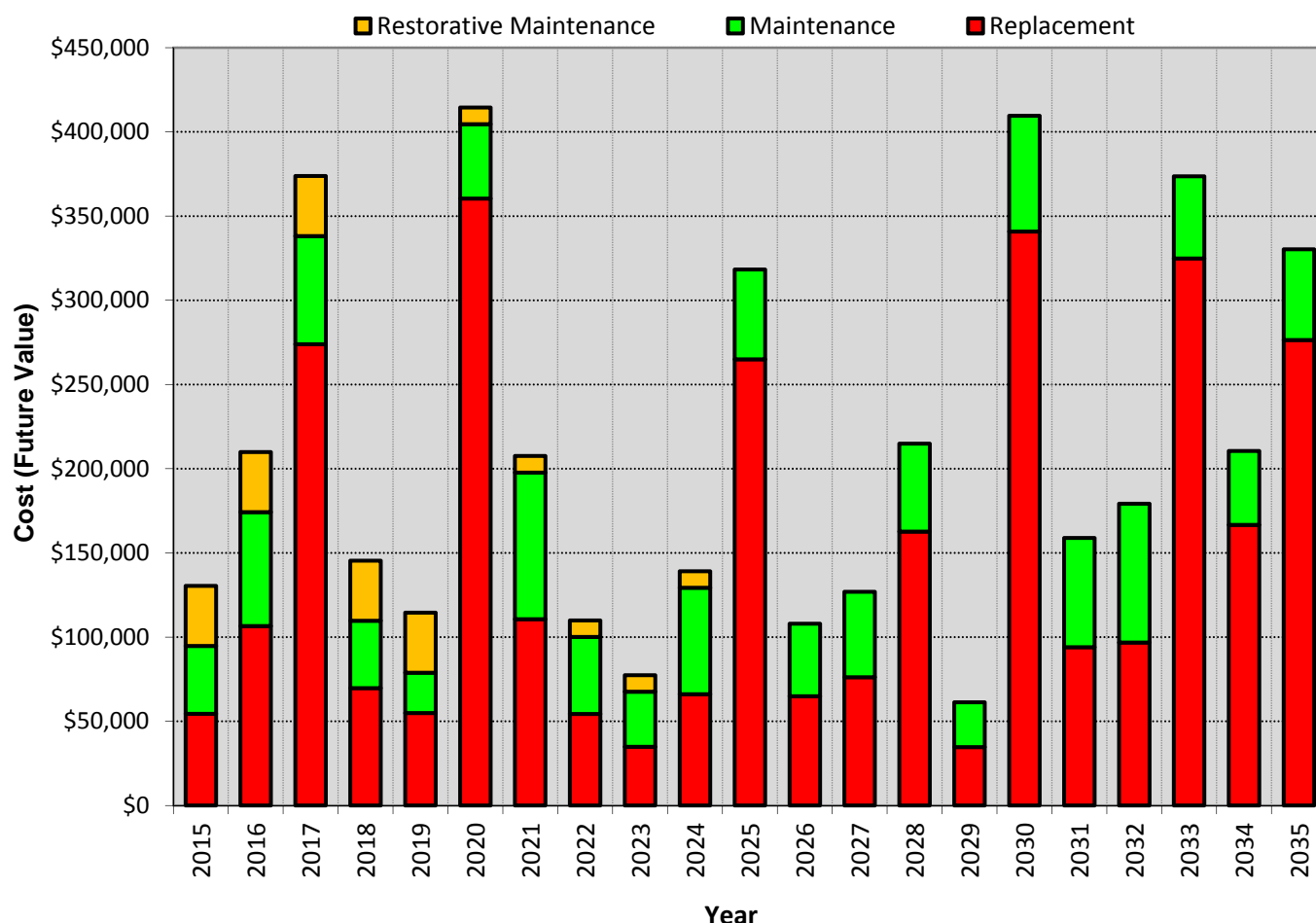


Figure 1: Projected Maintenance, Replacement and Restorative Maintenance Expenses (Future Value) For All Buildings.

The five largest monetary years for both maintenance and replacement across all groups are drawn from the forecasting tables in the appendices and are summarized chronologically in Table 3. Please view the individual group reports and appendices for detail on origin of these expenses.



*Table 3: Chronological List of Top-5 Monetary years for Maintenance and Replacement in All Buildings*

	Report	Highlighted Building(s)	Cost	Year
Maintenance	R4-External Users	No.41 Centre For Active Living	\$36,285	2021
	R1-Municipal Services	No.1 Municipal Hall	\$26,600	2032
	R4-External Users	No.40 Lions Hall	\$17,196	2030
	R3-Heritage	No.22 Butterfield Residence	\$11,670	2028
	R1-Municipal Services	No.5 Fire Station 1	\$11,850	2034
Replacement	R1-Municipal Services	No.1 Municipal Hall	\$101,600	2017
	R1-Municipal Services	No.6 Public Service Complex	\$89,560	2020
	R1-Municipal Services	No.1 Municipal Hall	\$102,770	2020
	R1-Municipal Services	No.1 Municipal Hall	\$115,940	2030
	R1-Municipal Services	No.5 Fire Station 1	\$107,450	2033

‘Restorative maintenance (RM)’ as outlined in each Sub-Report refers to a ‘one-time’ non-typical investment needed to repair a defect or reinstate basic performance to a part of a building, so that regular maintenance can be effective (e.g., decayed siding must be replaced before it can be cleaned or painted). During our cursory visual review we identified areas that were in need of repair for select buildings within, we suggest, the next five to ten years. For each building group, we collectively assigned a cost for the list of RM tasks, then distributed the expenses equally over the five to ten year period. Table 4 describes the total restorative maintenance costs recommended for each report. For greater detail and to view the recommended restorative maintenance as it relates to each building please refer to section 2.3 of each respective Sub-Report and related appendices.

*Table 4: Restorative Maintenance Costs per Report Group.*

Report	Total Expected Costs
R1-Municipal Services	\$105,000
R2-Parks and Recreation	\$16,500
R3-Heritage*	\$98,000
R4-External Users	\$7,700
<b>Total</b>	<b>\$227,200</b>

Note: RM expenses for Heritage buildings was distributed over 10 years as opposed to 5 years for all other groups. The greater period for Heritage buildings was reasoned as the repairs are less urgent and the future use of most of the buildings is under review by The District.

This total of \$227,200 includes a 10% contingency, 20% overhead and 10% profit to the Contractor (consulting fees are not included). These estimates are typical for Contractors, although this work may be achieved through gifts in kind or at discounted rates given the building leases are local not-for-profit groups. However, savings may be offset by potential consulting fees on a project-specific basis, so maintaining a 40% surcharge is not unreasonable. Therefore, \$35,600 per year can anticipated for the first five years of the forecasting period to address RM items with a further \$9,800 for five additional years with the Heritage group as noted above.

## 2.2. EXCLUSIONS

During the reporting process, Levelton and The District confirmed on a number of areas that would be excluded from the funding model. Exclusions were either due to their age, durability, user priority, renewal date beyond 20 years, low cost, or likelihood that they would be replaced promptly from an operating budget as they must remain functional and safe. As time passes, components can be added or deleted from this list based on changing conditions or rising repair costs; some of items excluded are listed below:



- Kitchen assets such as cooking equipment (grill, fryer, exhaust).
- Assets forming part of the ground-works or site infrastructure beyond the building footprint such as perimeter fencing, roadways, parking areas, picnic tables
- Low-voltage wiring
- Washroom/change-room fixtures
- Supplemental space heaters
- IT equipment
- Interior doors
- Ceiling tile
- Counters, cabinets, tables
- Wall fixtures
- Fixtures or components not attached to the buildings

Additionally, other physical assets owned, maintained and replaced by the District that are not building related include, but are not limited to, sidewalks, roads, drive aisles, subsurface infrastructure and similar. Such items are beyond the scope of this report.

### 3. GROUP REPORTING

This section addresses each group report at the building level. Further breakdown of each building to the building system and component level is provided in respective Sub-Reports. Appendix III – Building Reference Table, provides information on each of the 46 buildings along with thumbnail perspective and aerial images.

#### 3.1. OVERALL VISUAL CONDITION SUMMARY

A visual-only review was performed for this report and study. A general condition of good, average, fair, poor or concealed was used to describe the condition of each item as observed during the visual review. Please refer to each buildings visual review, within their respective Sub-Report, for reported condition of building systems. Many items observed were beyond the expected service life for the same or similar components, but they continue to function and operate effectively. For such items we have modeled the next maintenance and/or replacement to take place within the first 5 year period of the report (typically this coming fiscal year). However, items with a visual condition of average or better may not require immediate attention and may wish to be deferred.

#### 3.2. REPORT 1 – MUNICIPAL BUILDINGS

##### 3.2.1. Description

Municipal buildings owned and managed by The District date from 1965-present. The buildings can be split into three use/service types: public works/services, government and emergency operations, and community services. Government and emergency services include the municipal hall in Saanichton (Admin, Police and Fire Station #2) and the recently constructed Fire Station #1 near the intersection of Keating Cross Road and West Saanich Road. The municipal hall includes buildings 1a, 1b, and 1c to collectively be termed 'Building 1'. The public works and service yard houses buildings No. 6-8 and supplemental infrastructure (buildings 45-48). Environmental compliance items at the public works have been assigned building No. 49 however they were included for reference only to The District and not included within financial modelling. The final municipal building is the Cultural Centre at Brentwood Bay Village. It is a multi-purpose building for community services



and programs with the primary service being the Districts library.

### 3.2.2. Financial Forecast of Report 1

The management of assets over the next 20 years for Report No.1, Municipal Buildings, is summarized in Table 5 where anticipated expenses are combined in five-year increments. The costs vary with differences in age, construction, extent of utilities, size and occupancy. The aging Municipal Hall represents close to 40% of the group twenty year total costs. Fire Station #1 is a substantial building with extensive electrical and mechanical equipment, however its robust design and recent construction defer a significant portion of anticipated expenses beyond the twenty year timeframe of this report. A large portion of the identified costs for the Public Works buildings are attributed to upgrading utility services (sewer and water) at the Main Complex within the first five years.

*Table 5: Summary of Present-Value Report 1 Building Costs every 5 years*

Building	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs
No.1 Municipal Hall	\$348,455	\$238,350	\$272,515	\$167,820	\$1,027,140
No.5 Fire Station # 1	\$29,200	\$33,100	\$64,745	\$157,150	\$284,195
No.6 PW Main Complex	\$228,470	\$62,000	\$83,630	\$80,100	\$454,200
No.7 PW East Bays / Roads & Parks Shop	\$21,070	\$5,400	\$2,700	\$56,600	\$85,770
No.8 PW Wood Shop	\$5,460	\$450	\$-	\$1,450	\$7,360
No. 45 PW Equipment Shed	\$2,150	\$-	\$-	\$-	\$2,150
No. 46 PW Equipment & Supplies Shed	\$1,650	\$-	\$-	\$2,280	\$3,930
No. 47 PW Water/Sewer Equipment Shed	\$-	\$10,800	\$-	\$-	\$10,800
No. 48 PW Salt Shed	\$-	\$-	\$18,100	\$-	\$18,100
No.9 Cultural Centre	\$92,640	\$59,720	\$66,450	\$72,360	\$291,170
Group Restorative Maintenance	\$105,000	\$-	\$-	\$-	\$105,000
<b>Total</b>	\$834,000	\$409,800	\$508,100	\$537,800	\$2,289,800
	\$139,000/yr	\$82,000/yr	101,630/yr	\$107,600/yr	\$109,000/yr

Figure 2 displays the maintenance and replacement expenses over the next 20 years. The largest expense years are projected within the first five years (2017 & 2020) and final five years (2030 & 2033). Within the first five years, large costs are occurring from improving the Public Works infrastructure, and replacing remaining aluminum windows, interior finishes (linoleum & paint), electrical and mechanical equipment at the Municipal Hall. The large years near the end of the twenty years (2030 and 2033) can be attributed to roofing replacement at the Municipal Hall and the beginning of electrical and mechanical equipment replacements at the highly automated Fire Station #1. Replacement expenses are more varied, while maintenance expenses are distributed fairly evenly over the twenty years.



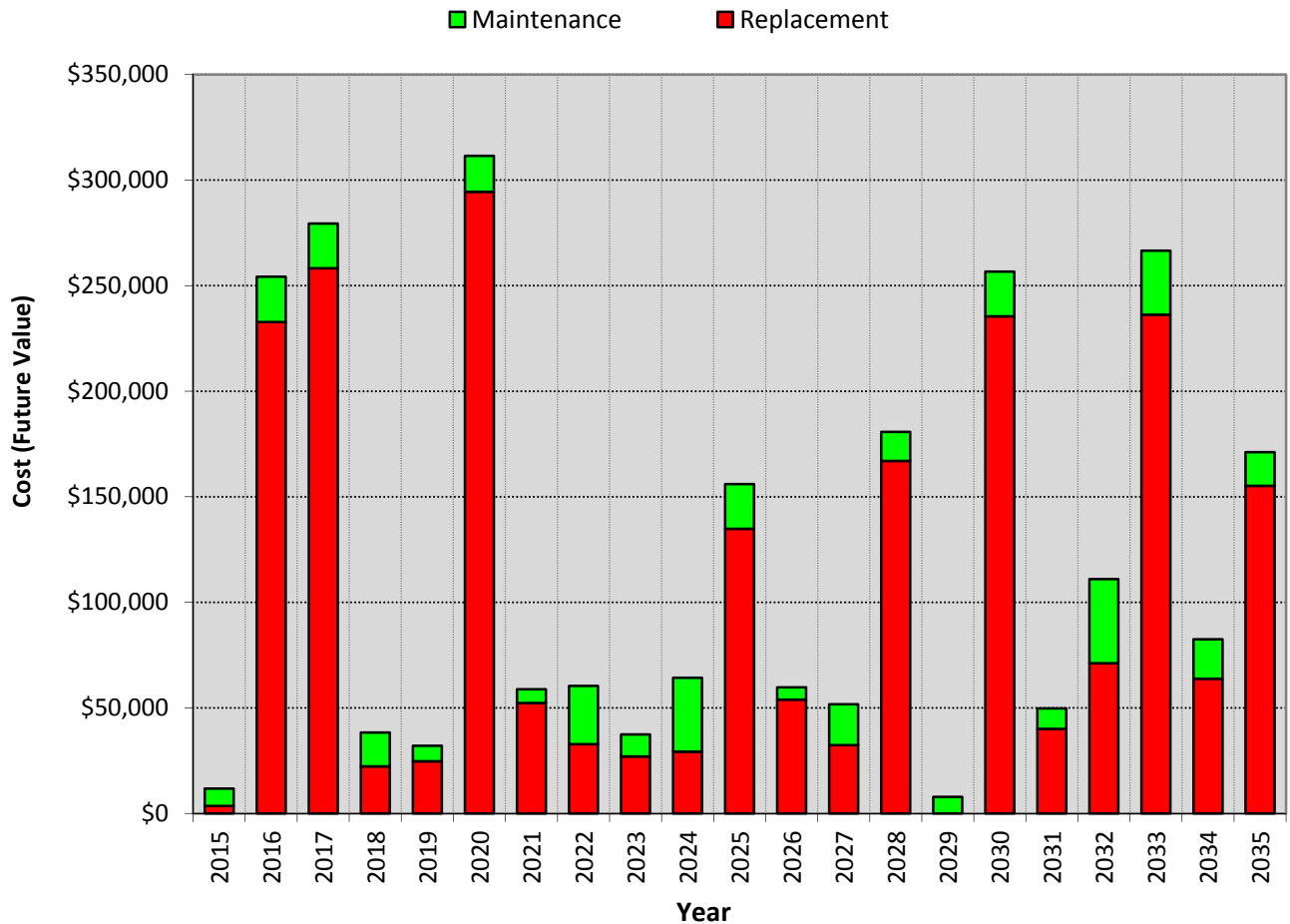


Figure 2: Projected Maintenance and Replacement Expenses (Future Value) for Municipal Group

### 3.3. REPORT 2 – PARKS AND RECREATION BUILDINGS

#### 3.3.1. Description

Parks and Recreation buildings owned and managed by The District date from c.1967-2012. The group's buildings are located in three municipal parks: Rom Knott, Verdier and Centennial. Rom Knott and Centennial Park are used extensively as sporting facilities for various District clubs and leagues. Verdier Park offers walking paths, marine views and boating access. Centennial Park includes ten of the twelve buildings for this group and is by far the largest area with playing fields and walking trails totaling 18.42 hectares.



### 3.3.2. Financial Forecast of Report 2

The management of assets over the next 20 years for Report No.2: Parks and Recreation Buildings is summarized in Table 6, where anticipated expenses are combined into five-year increments. The largest expense years are found in the first and final five year increments, resulting heavily from roof renewals of the larger buildings and replacement of primary electrical/mechanical equipment. The large variation in expenses across buildings for this group are primarily attributed to differences in construction, extent of utilities, size and occupancy. The Fieldhouse represents more than one-third of the total cost, and Buildings No.17, 19 and 39 represent another third. The greater expense buildings have more extensive electrical and mechanical equipment, interior finishes and exterior paint to maintain, and larger roofing areas to replace. Greater occupancy in Buildings 11, 12 and 19 also contributes to inflated expenses by placing greater diligence on maintaining the interior and building envelope.

Table 6: Summary of Present-Value Report 2 Building Costs every 5 years

Building	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs
No.10 Rom Knott Park Concession	\$ 16,985	\$ 8,260	\$ 1,000	\$ 18,215	\$ 44,460
No.11 Verdier Park Washrooms	\$ 1,600	\$ 2,700	\$ 2,000	\$ 4,140	\$ 10,440
No.12 CP Fieldhouse	\$ 59,100	\$ 19,410	\$ 6,500	\$ 80,515	\$ 165,525
No.13 CP Diamond #1 Utility	\$ 1,700	\$ 200	\$ 500	\$ 200	\$ 2,600
No.14 CP Diamond #1	\$ 700	\$ 600	\$ 800	\$ 600	\$ 2,700
No.15 CP Diamond #2	\$ 2,280	\$ -	\$ 1,500	\$ -	\$ 3,780
No.16 CP Diamond #5	\$ 16,930	\$ 4,100	\$ 2,440	\$ 6,860	\$ 30,330
No.17 CP Diamond #6	\$ 21,080	\$ 1,400	\$ 18,105	\$ 5,330	\$ 45,915
No.18 CP Lacrosse Storage	\$ 1,100	\$ 7,100	\$ -	\$ 1,100	\$ 9,300
No.19 CP Residence	\$ 13,315	\$ 6,985	\$ 21,980	\$ 9,460	\$ 51,740
No.44 CP Garage	\$ 5,500	\$ 1,000	\$ 2,850	\$ 8,500	\$ 17,850
No.39 CP Shelter#2 & Storage	\$ 9,700	\$ 2,000	\$ 7,450	\$ 12,950	\$ 32,100
Group Restorative Maintenance	\$16,500	\$-	\$-	\$-	\$16,500
<b>Total</b>	\$166,500 \$27,750/yr	\$ 53,755 \$10,750/yr	\$ 65,125 13,000/yr	\$147,870 \$29,600/yr	\$ 433,200 \$20,600/yr

Figure 3 displays maintenance and replacement expenses over the next 20 years for Parks and Recreation buildings. The largest years of expense are projected in 2017, 2033 and 2035 where CP Fieldhouse electrical equipment and roofing membrane are respectively due for replacement. Years 2032 and 2033 represent back to back \$50,000 expense years that The District should take into consideration for long-term planning. The first and final five-year periods each represent about a third of the total 20-year costs while the middle ten years combine for the remaining third. Replacement costs are more scattered, while maintenance expenses are distributed more evenly over the twenty years



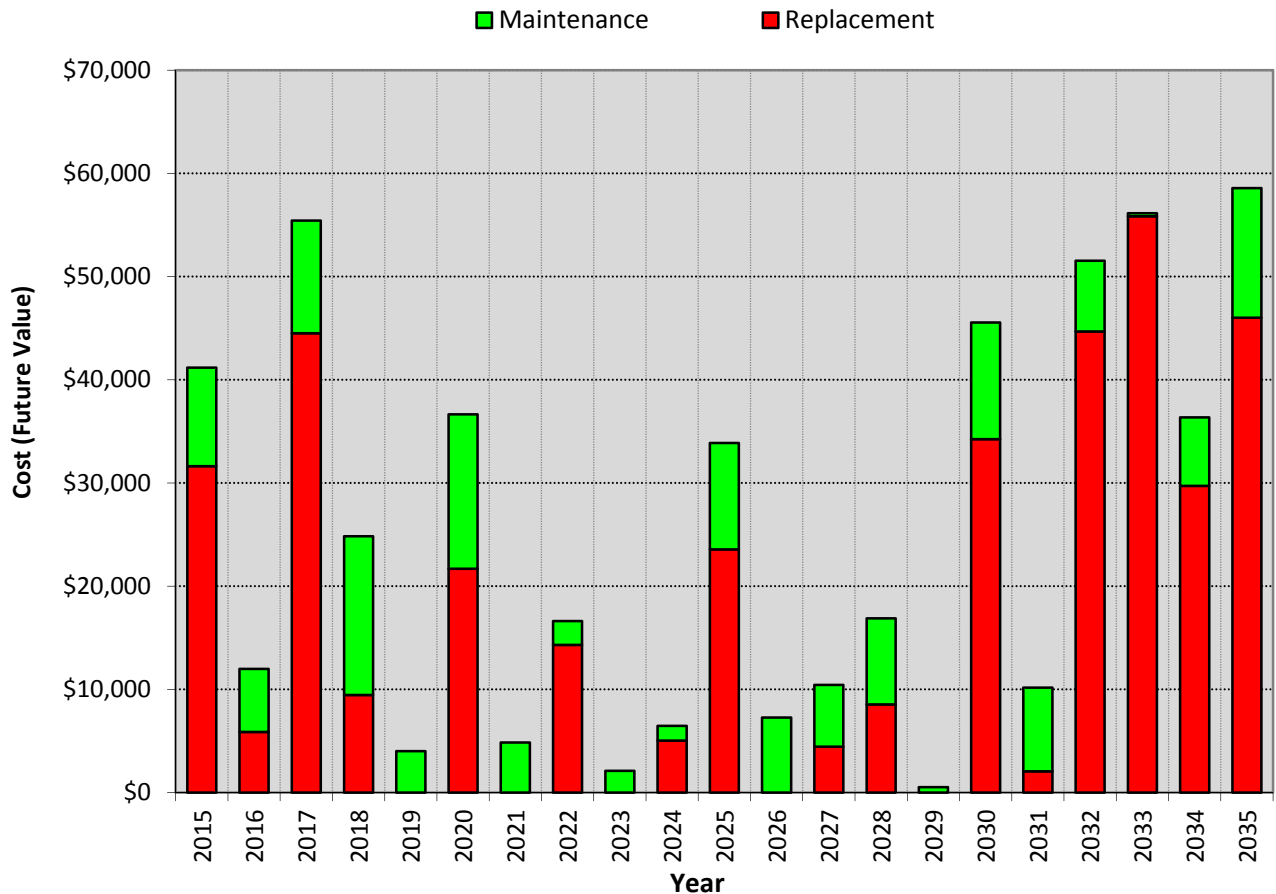


Figure 3: Projected Maintenance and Replacement Expenses (Future Value) for Parks & Recreation Group

### 3.4. REPORT 3 – HERITAGE BUILDINGS

#### 3.4.1. Description

Eighteen heritage buildings owned by The District date back to the nineteenth century and are located in three areas of the municipality: Newman Farm, Butterfield Park and Pioneer Park. Newman Farm is a 6.6-hectare municipally owned park that stretches west from the coast of the Eastern Saanich peninsula, near the Cordova Channel, to the Old V & S Road in a manner similar to the New France seigneurial system along the St. Lawrence River. The farm is divided into three areas: homestead, central farm and shoreline. Newman Farm contains fourteen heritage buildings ranging from the nineteenth-century original cabin to livestock barns and workshops. The farm was officially transferred to The District in July 2003 for use as public parkland, and two of the three land areas are located in the Agricultural Land Reserve. Butterfield Park was previously owned by Jack Butterfield who, at the time, captained the Mill Bay ferry. The 13-acre site was gifted to The District in 1989 and received heritage status and the Hallmark Society's Louis Award in 1993. A park caretaker lives in the residence providing on-site security. Brentwood Bay Village houses the final heritage building in The District inventory, West Saanich School. The school is located in Pioneer Park on West Saanich Road and is used by community clubs and groups, most notably Scouts and Girl Guides Canada. Designated in 2004, the c.1908/1916 school is currently being restored to vintage character.



### 3.4.2. Financial Forecast of Report 3

The management of assets over the next twenty years for the Heritage Buildings is summarized in Table 7, where the costs are combined into five-year increments. Buildings that are not energized and unoccupied are generally within the \$5,000-\$10,000 range over the 20-year period, except for the larger Newman Farm buildings (23, 24, 28, 35 and 37). The Butterfield Residence and West Saanich School represent the high-expense buildings for the group, at a combined 52% of the 20-year total cost. Their greater expenses result from having the most extensive electrical and mechanical equipment, interior finishes and exterior paint to maintain, and the two largest roofing areas to replace. As the Newman Farm buildings are not occupied and their future use has yet to be fully determined, much of their expected costs will depend on the level of emphasis The District places on them. For example, building 24 (NF Workshop) may have its roof replacement deferred if by year 2034 the farm is not an interactive heritage attraction. The occupied buildings (22 and 38) have a tighter tolerance to these projected expenses, as they are utilized publicly and must maintain a healthy and safe environment.

Table 7: Summary of Present-Value Report 3 Building Costs every 5 years

Building	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs
20 – Butterfield Barn/Coop	\$3,700	\$1,200	\$1,200	\$1,200	\$7,300
21 – Butterfield Garage	\$1,950	\$2,700	\$-	\$6,020	\$10,670
22 – Butterfield Residence*	\$20,650	\$2,800	\$17,370	\$37,280	\$78,100
23 – NF Main Farmhouse	\$7,350	\$3,400	\$2,800	\$16,800	\$30,350
24 – NF Workshop	\$11,900	\$1,300	\$1,300	\$12,300	\$26,800
25 – NF Chicken Coop	\$450	\$450	\$450	\$2,550	\$3,900
26 – NF West Shed	\$2,650	\$650	\$650	\$650	\$4,600
27 – NF Creamery	\$800	\$500	\$400	\$1,700	\$3,400
28 – NF Main Barn	\$7,400	\$1,700	\$1,700	\$1,700	\$12,500
29 – NF Original Cabin	\$3,000	\$700	\$700	\$5,200	\$9,600
30 – NF Outhouse	\$425	\$200	\$200	\$200	\$1,025
31 – NF Guest Cabin	\$4,900	\$500	\$500	\$500	\$6,400
32 – NF Milking Shed	\$3,350	\$1,100	\$1,100	\$1,100	\$6,650
34 – NF East Shed	\$3,700	\$400	\$400	\$400	\$4,900
35 – NF North Boat House	\$900	\$900	\$900	\$7,700	\$10,400
36 – NF South Boat House	\$600	\$600	\$600	\$5,100	\$6,900
37 – NF Steam Shed	\$8,550	\$500	\$500	\$500	\$10,050
38 – West Saanich School	\$27,500	\$52,060	\$2,850	\$11,000	\$93,410
Group Restorative Maintenance	\$49,000	\$49,000			\$98,000
<b>Total</b>	<b>\$158,800</b>	<b>\$120,700</b>	<b>\$33,620</b>	<b>\$111,900</b>	<b>\$425,000</b>
	<b>\$26,500/yr</b>	<b>\$24,100/yr</b>	<b>\$6,700/yr</b>	<b>\$22,400/yr</b>	<b>\$20,200/yr</b>

\*Notes: Revenue property of \$14,400 in 2015 (estimated \$288,000 over next 20 years).

Figure 4 displays the maintenance and replacement expenses over the next 20 years. Years 2016, 2024 and 2034 are the largest expense years for the group. Year 2034 is the largest replacement expense year, with roofing renewals for several larger buildings due. Years 2016 and 2031 represent the largest maintenance expense years from the need to rehydrate cladding on Newman Farm buildings as well as repaint the West Saanich School exterior (15-year renewal period). Rehydrating cladding on Newman Farm was scheduled together for multiple buildings to take advantage of economies of scale. Relative to the other groups, heritage building expenses have a greater contribution occurring from maintenance. This coincides with District preferences towards maintaining these buildings indefinitely at steady state and advocating repair and stabilization over replacement of components.



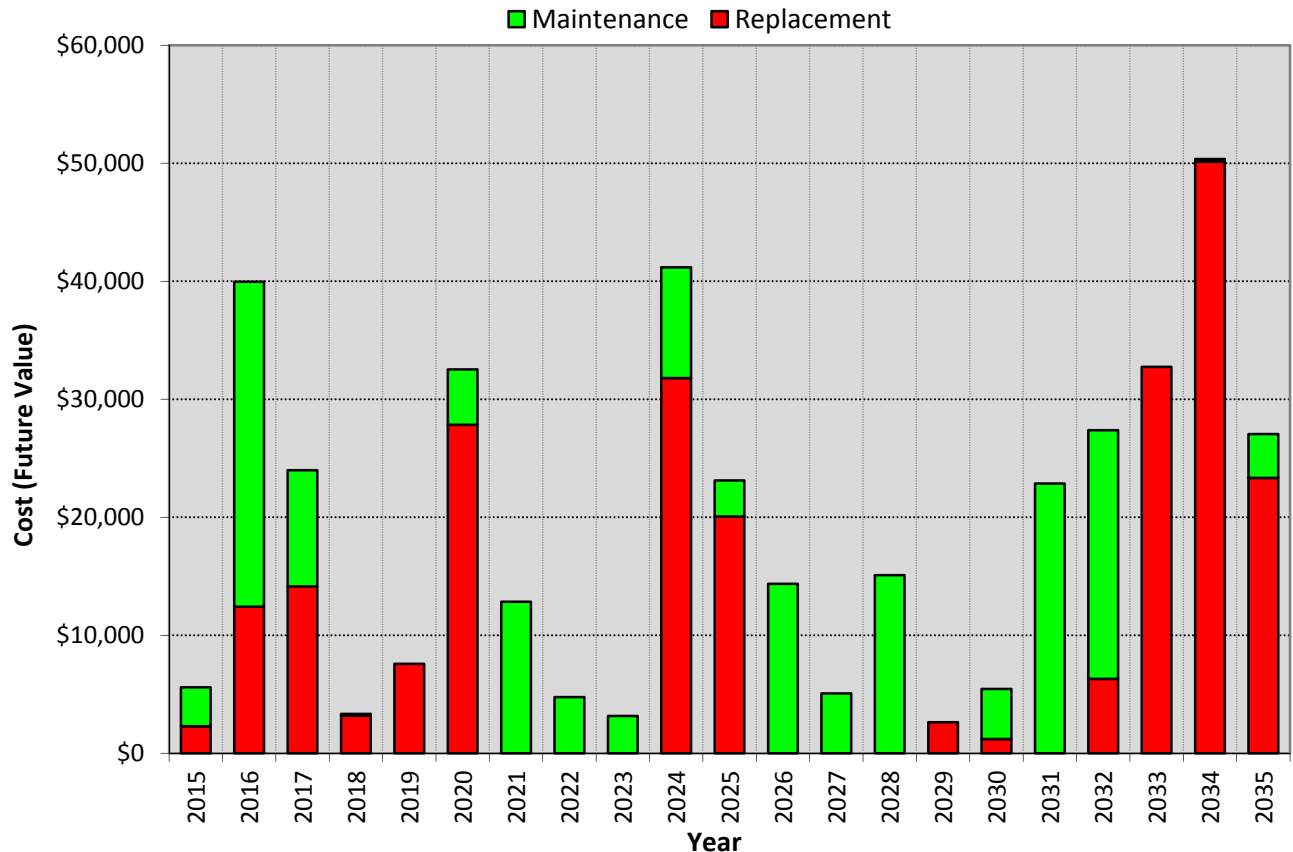


Figure 4: Projected Maintenance and Replacement Expenses (Future Value) for Heritage Group

### 3.5. REPORT 4 – EXTERNAL USER BUILDINGS

#### 3.5.1. Description

External user buildings are leased by The District to clubs and associations running recreation, education and social activities. The group consists of five buildings dating from c.1894-2001. Access and building maintenance history was kindly provided by the Fire Chief, Central Saanich Lions Club, Central Saanich Lawnbowling Club and The Centre for Active Living for each of their respective buildings.

#### 3.5.2. Financial Forecast of Report 4

The management of assets over the next twenty years for the External User group is summarized in Table 8, where the costs are combined into five-year increments. Buildings 4, 40 and 42 represent similar expenses, while buildings 41 and 43 represent the distinct high and low expenses for the group. Building 41, Centre for Active Living, represents the largest and most-trafficked building in the group. Public experience of the District's buildings is also notable which translates to a larger priority for maintenance and renewal activities for visitors more than for employees. As a result, associated maintenance and replacement costs for the Centre for Active Living represent 45% of the total group expenses over the next twenty years.



Table 8: Summary of Present-Value Report 4 Building Costs every 5 years

Building	0-5yrs	6-10yrs	11-15yrs	16-20yrs	0-20yrs
4 – Fire Museum	\$2,960	\$34,880	\$5,800	\$24,320	\$67,960
40 – Lions Hall	\$33,969	\$17,962	\$41,054	\$2,000	\$94,985
41 – Centre For Active Living	\$71,394	\$68,327	\$48,221	\$29,599	\$217,541
42 – Lawnbowling Clubhouse	\$35,387	\$33,250	\$3,150	\$18,685	\$90,472
43 – Lawnbowling Storage	\$3,010	\$-	\$2,700	\$-	\$5,710
Group Restorative Maintenance	\$7,700	\$-	\$-	\$-	\$7,700
<b>Total</b>	\$154,420 \$25,700/yr	\$154,420 \$30,900/yr	\$100,900 \$20,200/yr	\$74,600 \$14,900/yr	\$484,400 \$23,000/yr

Figure 5 displays the expenses for Building Group 4, maintenance and replacement, over the next 20 years. Years 2021 and 2025 represent the largest years for replacement expenses primarily resulting from respective renewal of several system components at the Fire Museum, and electrical equipment at the Lawnbowling Club buildings. Year 2021 also represents the largest maintenance expense of any year which arises from maintenance of wood and parquet floor finishes at the Centre for Active Living.

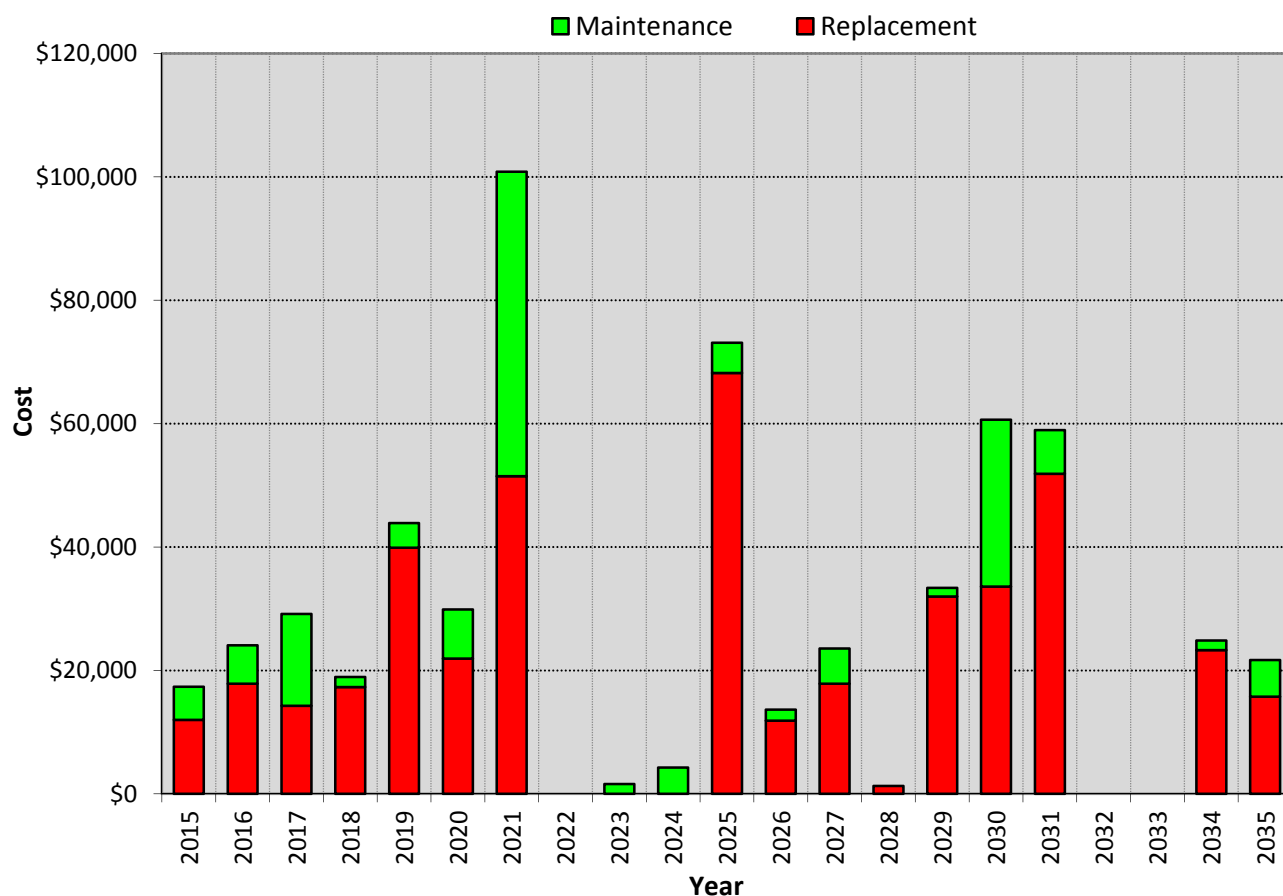


Figure 5: Projected Maintenance and Replacement Expenses (Future Value) for External User Group



## **APPENDIX I**

### **20-YEAR OVERALL PLAN**



Levelton File # R514-1802-00  
June 11, 2015

District of Central Saanich  
Long-term Asset Management Plan  
Report No.0 – Master Report



Central Saanich Summary



Component Name	Task	Cost																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
R1-Municipal Services																						
No.1 Municipal Hall	Maintenance	9,700	23,300	12,700	9,900	9,400	10,200	9,700	19,350	10,000	23,600	9,400	9,000	13,000	9,600	9,400	9,300	9,400	26,600	10,300	9,000	10,600
	Replacement		65,185	101,600	300	3,400	102,770	52,480	28,300	11,000	2,500	72,020	42,155	25,500	38,620		115,940	9,900	7,500	3,500	3,400	77,620
No.5 Fire Station #1	Maintenance	3,950	5,450	3,950	6,450	5,950	3,450	3,950	6,250	6,950	9,850	5,950	3,450	3,950	8,450	5,150	4,250	5,950	3,450	6,950	11,850	3,950
	Replacement									150					39,495					107,450	17,550	
No.6 PW Main Complex	Maintenance	7,000	2,500	3,400	2,500	3,400	4,500	3,400	2,500	3,400	6,000	5,400	2,500	3,400	2,500	3,400	4,500	3,400	2,500	3,400	2,500	5,400
	Replacement	5,000	3,880	85,000	21,730		89,560		6,600	18,600		16,100	500		19,750		47,080	19,300		19,300		24,300
No.7 PW E. Bays, Roads & Parks	Maintenance	600		2,000	5,800		600		2,000			600		2,000			600		2,000	5,800		600
	Replacement			3,110	3,460	2,500	3,000					2,800					100				22,600	25,600
No.8 PW Wood Shop	Maintenance								250												250	
	Replacement			2,940			2,520					200										1,200
No.45 PW Equipment Shed	Maintenance						350															
	Replacement						1,800															
No.46 PW Equip. & Supplies Shed	Maintenance			1,100															1,100			
	Replacement			550															1,180			
No.47 PW Water-Sewer Equip Shed	Maintenance											800										
	Replacement											10,000										
No.48 PW Salt Shed	Maintenance													1,100								
	Replacement													17,000								
No.9 Cultural Centre	Maintenance	800	800	9,120	1,700	800	800	800	3,300	1,700	800	6,620	800	3,300	1,700	800	800	800	3,300	7,520	800	800
	Replacement	3,570			12,000	1,000	62,050				22,000	24,500			20,250		38,800		24,000	35,140		
Restorative Maintenance			21,000	21,000	21,000	21,000	21,000															
Report Summary Present Value	Maintenance	22,050	32,050	32,270	26,350	19,550	19,900	17,850	33,650	22,050	40,250	28,770	15,750	26,750	22,250	18,750	19,450	19,550	38,950	33,970	24,400	21,350
	Replacement	8,570	69,065	193,200	37,490	6,900	261,700	52,480	34,900	29,750	24,500	125,620	42,655	42,500	118,115		201,920	29,200	32,680	165,390	43,550	128,720
	Yearly Totals	30,620	122,115	246,470	84,840	47,450	302,600	70,330	68,550	51,800	64,750	154,390	58,405	69,250	140,365	18,750	221,370	48,750	71,630	199,360	67,950	150,070
R1-Reference Only																						
No.49 PW Enviro Compliance	Maintenance																					
	Replacement	120,000	50,000	190,000	50,000	60,000																
R2-Parks and Recreation																						
No.10 Rom Knott Park Concession	Maintenance	1,000					1,000		1,000		600	1,000					1,000		1,000			1,000
	Replacement	14,985									4,210	1,450								1,600		14,615
No.11 Verdier Park Washrooms	Maintenance			1,000					1,000	500				1,400				500	1,000			
	Replacement			600					1,200					600					2,640			
No.12 CP Fieldhouse	Maintenance	2,650		2,875	3,000		1,000					2,650	3,000				1,000		1,200		3,000	2,650
	Replacement	6,295		41,180			2,100		10,260			6,500		400			2,100		28,270	39,100		6,295
No.13 CP Diamond #1 Utility	Maintenance					200	300				200					200	300				200	
	Replacement	1,200																				
No.14 CP Diamond #1	Maintenance	600					100					600					100					600
	Replacement																700					
No.15 CP Diamond #2	Maintenance						600										600					
	Replacement						1,680										900					
No.16 CP Diamond #5	Maintenance	1,000					1,880	3,100				1,000					1,000	3,100				1,000
	Replacement	1,260	2,700	1,000	5,200		3,890							1,000			440	1,500				1,260
No.17 CP Diamond #6	Maintenance	1,000		3,120			1,000					1,000		3,120			2,400					1,000
	Replacement	4,330			3,700		7,930					400		1,500	1,000		6,320					4,330
No.18 CP Lacrosse Storage	Maintenance	1,100								1,100								1,100				
	Replacement											6,000										
No.19 CP Residence	Maintenance	1,200	1,690	200		200	3,375	200		200	400	1,200		200		200	1,000	200	1,690	200		1,200
	Replacement		3,060				3,590		1,000			3,985			5,600		14,980		1,000		2,400	2,770
No.44 CP Garage	Maintenance		1,000		1,750			1,000					2,850					1,000			1,350	
	Replacement	2,300					450													5,700	450	
No.39 CP Shelter#2 & Storage	Maintenance	1,000			6,450		1,000					1,000			6,450		1,000					1,000
	Replacement	1,250										1,000								10,700	1,250	
Restorative Maintenance			3,298	3,298	3,298	3,298	3,298															
Report Summary Present Value	Maintenance	9,550	2,690	7,195	11,200	400	10,255	4,300	2,000	1,800	1,200	8,450	5,850	4,720	6,450	400	8,400	5,900	4,890	200	4,550	8,450
	Replacement	31,620	5,760	42,780	8,900		19,640		12,460		4,210	19,335		3,500	6,600		25,440	1,500	31,910	39,100	20,400	30,970
	Yearly Totals	41,170	11,748	53,273	23,398	3,698	33,193	4,300	14,460	1,800	5,410	27,785	5,850	8,220	13,050	400	33,840	7,400	36,800	39,300	24,950	39,420



Central Saanich Summary



Component Name	Task	Cost																				
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
R3-Heritage																						
No.20 Butterfield Barn-Coop	Maintenance		1,200					1,200					1,200					1,200				
	Replacement						2,500															
No.21 Butterfield Garage	Maintenance						1,100			2,700												
	Replacement						850														6,020	
No.22 Butterfield Residence	Maintenance	2,500	150	3,300	150		2,650		150		150	2,500	150		11,670		2,650	3,250	3,450		150	2,500
	Replacement					7,000	4,900									2,000	900			22,930	2,000	3,000
No.23 NF Main Farmhouse	Maintenance		5,550					2,800					2,800					4,800				
	Replacement		1,800							600											12,000	
No.24 NF Workshop	Maintenance		2,900					1,300					1,300					1,300				
	Replacement		2,500	5,000			1,500														11,000	
No.25 NF Chicken Coop	Maintenance		450					450					450					450				
	Replacement																				2,100	
No.26 NF West Shed	Maintenance		650					650					650					650				
	Replacement																					
No.27 NF Creamery	Maintenance		400					400			100		400					400				
	Replacement		400																		1,300	
No.28 NF Main Barn	Maintenance		1,700					1,700					1,700					1,700				
	Replacement		4,500		1,200																	
No.29 NF Original Cabin	Maintenance		700					700					700					700				
	Replacement		500		1,800														4,500			
No.30 NF Outhouse	Maintenance		200					200					200					200				
	Replacement		225																			
No.31 NF Guest Cabin	Maintenance			900					500					500					500			
	Replacement			4,000																		
No.32 NF Milking Shed	Maintenance			2,850					1,100					1,100					1,100			
	Replacement			500																		
No.34 NF Boatbuilding Storage	Maintenance			400					400					400					400			
	Replacement			1,800			1,500															
No.35 NF North Boat House	Maintenance			900					900					900					900			
	Replacement																				6,800	
No.36 NF South Boat House	Maintenance			600					600					600					600			
	Replacement																				4,500	
No.37 NF Steam Shed	Maintenance		3,500	500					500					500					500			
	Replacement		2,250	2,300																		
No.38 West Saanich School	Maintenance	800	9,600				500	2,000			7,600		2,000				500	2,000	7,600			
	Replacement	2,290					13,960				26,000	16,460										1,400
Restorative Maintenance			9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814										
Report Summary	Maintenance	3,300	27,000	9,450	150		4,250	11,400	4,150	2,700	7,850	2,500	11,550	4,000	11,670		3,150	16,650	15,050		150	2,500
Present Value	Replacement	2,290	12,175	13,600	3,000	7,000	25,210				26,600	16,460				2,000	900		4,500	22,930	34,420	15,700
	Yearly Totals	5,590	48,989	32,864	12,964	16,814	39,274	21,214	13,964	12,514	44,264	28,774	11,550	4,000	11,670	2,000	4,050	16,650	19,550	22,930	34,570	18,200
R4-External Users																						
No.4 Fire Museum	Maintenance	1,360	1,600					7,520		1,360			1,300					2,660				
	Replacement							26,000					4,500					21,660				
No.40 Lions Hall	Maintenance	2,000		4,328		1,085	2,000					2,000		4,499			17,196					2,000
	Replacement			9,500	1,000	8,000	6,055					15,962			1,000		18,360					
No.41 Centre For Active Living	Maintenance			8,428		1,060	900	36,285			3,564					1,060	900	2,504			1,060	
	Replacement	2,000	5,035	4,225	15,300	27,447	7,000	3,563				24,915	5,035	14,080		24,247	2,900	3,035			16,000	7,000
No.42 Lawnbowling Clubhouse	Maintenance	2,000	2,949				2,000					2,000	150				2,000					2,000
	Replacement	10,000	12,471			1,418	4,550	16,160				15,090					1,000	13,085				3,600
No.43 Lawnbowling Storage	Maintenance						770															
	Replacement						2,240										2,700					
Restorative Maintenance			1,540	1,540	1,540	1,540	1,540															
Report Summary	Maintenance	5,360	4,549	12,756		2,145	5,670	43,805		1,360	3,564	4,000	1,450	4,499		1,060	20,096	5,164			1,060	4,000
Present Value	Replacement	12,000	17,505	13,725	16,300	36,864	19,845	45,723				55,967	9,535	14,080	1,000	24,247	24,960	37,780			16,000	10,600
	Yearly Totals	17,360	23,594	28,021	17,840	40,550	27,055	89,527		1,360	3,564	59,967	10,985	18,579	1,000	25,307	45,056	42,944			17,060	14,600
Total Present Value Expenses	Maintenance	40,260	66,289	61,671	37,700	22,095	40,075	77,355	39,800	27,910	52,864	43,720	34,600	39,969	40,370	20,210	51,096	47,264	58,890	34,170	30,160	36,300
	Replacement	54,480	104,505	263,305	65,690	50,764	326,395	98,203	47,360	29,750	55,310	217,382	52,190	60,080	125,715	26,247	253,220	68,480	69,090	227,420	114,370	185,990
Total Future Value Expenses	Maintenance	40,260	67,615	64,163	40,008	23,917	44,246	87,114	45,718	32,701	63,177	53,294	43,021	50,690	52,223	26,667	68,768	64,883	82,460	48,803	43,937	53,940
	Replacement	54,480	106,595	273,943	69,711	54,949	360,366	110,592	54,402	34,857	66,101	264,987	64,891	76,196	162,626	34,632	340,801	94,008	96,743	324,812	166,615	276,371
Yearly Totals		\$94,740	\$206,447	\$360,629	\$139,042	\$108,512	\$402,122	\$185,371	\$96,974	\$67,474	\$117,988	\$270,916	\$86,790	\$100,049	\$166,085	\$46,457	\$304,316	\$115,744	\$127,980	\$261,590	\$144,530	\$222,290
Totals Inflated at 2% per Year		\$94,740	\$210,576	\$375,198	\$147,553	\$117,457	\$443,976	\$208,758	\$111,393	\$79,057	\$141,007	\$330,245	\$107,912	\$126,886	\$214,849	\$61,299	\$409,569	\$158,891	\$179,203	\$373,615	\$210,553	\$330,311



## **APPENDIX II**

### **20-YEAR GROUP PLANS**





# R1-Municipal Services

## Report 1 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
No.1 Municipal Hall																							
Interior Finishes Summary	Maintenance																						
	Replacement			48,100			37,300		20,800														
Building Envelope Summary	Maintenance	1,100	15,400	1,100	1,100	1,100	2,300	1,100	8,150	1,100	15,400	1,100	1,100	1,100	1,100	1,100	1,100	1,100	15,400	1,100	1,100	2,300	
	Replacement			46,000		3,400						64,120		2,000			64,120			3,400	64,120		
Mechanical Summary	Maintenance	8,100	7,400	11,100	8,300	7,800	7,400	8,100	10,700	8,400	7,700	7,800	7,400	11,400	8,000	7,800	7,700	7,800	10,700	8,700	7,400	7,800	
	Replacement			7,500			31,000	6,000	7,500	11,000	2,500	7,900		7,500			42,000	6,500	7,500	3,500			
Electrical Summary	Maintenance	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	
	Replacement		65,185		300		34,470	46,480					42,155	16,000	38,620		9,820	3,400				13,500	
Miscellaneous Summary	Maintenance																						
	Replacement																						
Building Summary	Maintenance	9,700	23,300	12,700	9,900	9,400	10,200	9,700	19,350	10,000	23,600	9,400	9,000	13,000	9,600	9,400	9,300	9,400	26,600	10,300	9,000	10,600	
	Replacement		65,185	101,600	300	3,400	102,770	52,480	28,300	11,000	2,500	72,020	42,155	25,500	38,620		115,940	9,900	7,500	3,500	3,400	77,620	
No.5 Fire Station #1																							
Interior Finishes Summary	Maintenance																						
	Replacement																			17,550			
Building Envelope Summary	Maintenance	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,800	2,000	8,400	2,000	2,000	2,000	2,000	3,200	2,800	2,000	2,000	2,000	8,400	2,000	
	Replacement																						
Mechanical Summary	Maintenance	1,700	3,200	1,700	4,200	3,700	1,200	1,700	3,200	4,700	1,200	3,700	1,200	1,700	6,200	1,700	1,200	3,700	1,200	4,700	3,200	1,700	
	Replacement														20,400				21,650				
Electrical Summary	Maintenance	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
	Replacement									150					19,095				85,800				
Miscellaneous Summary	Maintenance																						
	Replacement																						
Building Summary	Maintenance	3,950	5,450	3,950	6,450	5,950	3,450	3,950	6,250	6,950	9,850	5,950	3,450	3,950	8,450	5,150	4,250	5,950	3,450	6,950	11,850	3,950	
	Replacement									150					39,495				107,450	17,550			
No.6 PW Main Complex																							
Interior Finishes Summary	Maintenance																						
	Replacement	5,000			1,980							5,000										5,000	
Building Envelope Summary	Maintenance	5,100	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	5,000	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	
	Replacement						6,600		6,600								13,900	19,300		19,300		19,300	
Mechanical Summary	Maintenance	900		900		900	2,000	900		900		2,900		900		900	2,000	900		900		2,900	
	Replacement		500				8,800			9,000		11,100	500				9,200						
Electrical Summary	Maintenance	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	
	Replacement		3,380		19,750		9,160			9,600					19,750		23,980						
Miscellaneous Summary	Maintenance																						
	Replacement			85,000			65,000																
Building Summary	Maintenance	7,000	2,500	3,400	2,500	3,400	4,500	3,400	2,500	3,400	6,000	5,400	2,500	3,400	2,500	3,400	4,500	3,400	2,500	3,400	2,500	5,400	
	Replacement	5,000	3,880	85,000	21,730		89,560		6,600	18,600		16,100	500		19,750		47,080	19,300		19,300		24,300	
No.7 PW E. Bays, Roads & Parks																							
Interior Finishes Summary	Maintenance					2,500																	
	Replacement																						
Building Envelope Summary	Maintenance	600			5,800		600					600					600			5,800		600	
	Replacement											2,200								22,600	22,600		
Mechanical Summary	Maintenance			2,000					2,000					2,000					2,000				
	Replacement											600											
Electrical Summary	Maintenance																						
	Replacement			3,110	3,460		3,000										100					3,000	
Building Summary	Maintenance	600		2,000	5,800		600		2,000			600		2,000			600		2,000	5,800		600	
	Replacement			3,110	3,460	2,500	3,000					2,800					100				22,600	25,600	



## R1-Municipal Services Report 1 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
No.8 PW Wood Shop																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance								250												250		
	Replacement																						
Mechanical Summary	Maintenance																						
	Replacement						1,200					200										1,200	
Electrical Summary	Maintenance																						
	Replacement			2,940			1,320																
Building Summary	Maintenance								250												250		
	Replacement			2,940			2,520					200										1,200	
No.45 PW Equipment Shed																							
Building Envelope Summary	Maintenance						350																
	Replacement						1,800																
Building Summary	Maintenance						350																
	Replacement						1,800																
No.46 PW Equip. & Supplies Shed																							
Building Envelope Summary	Maintenance			1,100																1,100			
	Replacement																						
Electrical Summary	Maintenance																						
	Replacement			550																1,180			
Building Summary	Maintenance			1,100																1,100			
	Replacement			550																1,180			
No.47 PW Water-Sewer Equip Shed																							
Building Envelope Summary	Maintenance											800											
	Replacement											10,000											
Building Summary	Maintenance											800											
	Replacement											10,000											
No.48 PW Salt Shed																							
Building Envelope Summary	Maintenance													1,100									
	Replacement													17,000									
Building Summary	Maintenance													1,100									
	Replacement													17,000									
No.9 Cultural Centre																							
Interior Finishes Summary	Maintenance																						
	Replacement				12,000		11,880								20,250		11,880						
Building Envelope Summary	Maintenance	550	550	6,370	550	550	550	550	550	550	550	6,370	550	550	550	550	550	550	550	6,370	550	550	
	Replacement	3,570									22,000									35,140			
Mechanical Summary	Maintenance			2,500	900				2,500	900				2,500	900				2,500	900			
	Replacement					1,000						9,650					4,450		24,000				
Electrical Summary	Maintenance	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	250	
	Replacement						50,170					14,850					22,470						
Building Summary	Maintenance	800	800	9,120	1,700	800	800	800	3,300	1,700	800	6,620	800	3,300	1,700	800	800	800	3,300	7,520	800	800	
	Replacement	3,570			12,000	1,000	62,050				22,000	24,500			20,250		38,800		24,000	35,140			
Restorative Maintenance			21,000	21,000	21,000	21,000	21,000																
Report Summary Present	Maintenance	22,050	32,050	32,270	26,350	19,550	19,900	17,850	33,650	22,050	40,250	28,770	15,750	26,750	22,250	18,750	19,450	19,550	38,950	33,970	24,400	21,350	
	Replacement	8,570	69,065	193,200	37,490	6,900	261,700	52,480	34,900	29,750	24,500	125,620	42,655	42,500	118,115		201,920	29,200	32,680	165,390	43,550	128,720	
Report Summary Inflated	Maintenance	22,050	32,691	33,574	27,963	21,162	21,971	20,102	38,653	25,835	48,102	35,070	19,583	33,925	28,783	24,740	26,177	26,838	54,539	48,518	35,546	31,725	
	Replacement	8,570	70,446	201,005	39,785	7,469	288,938	59,101	40,089	34,857	29,280	153,130	53,036	53,900	152,794		271,758	40,085	45,760	236,218	63,444	191,271	
Yearly Totals		\$30,620	\$122,115	\$246,470	\$84,840	\$47,450	\$302,600	\$70,330	\$68,550	\$51,800	\$64,750	\$154,390	\$58,405	\$69,250	\$140,365	\$18,750	\$221,370	\$48,750	\$71,630	\$199,360	\$67,950	\$150,070	
Totals Inflated at 2% per Year		\$30,620	\$124,557	\$256,427	\$90,033	\$51,361	\$334,095	\$79,203	\$78,742	\$60,692	\$77,382	\$188,201	\$72,619	\$87,826	\$181,577	\$24,740	\$297,935	\$66,923	\$100,299	\$284,735	\$98,990	\$222,996	
REFERENCE ONLY																							
No.49 PW Enviro Compliance																							
Miscellaneous Summary	Maintenance																						
	Replacement	120,000	50,000	190,000	50,000	60,000																	



## R2-Parks and Recreation Report 2 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.10 Rom Knott Park Concession																						
Interior Finishes	Maintenance																					
Summary	Replacement																				1,600	
Building Envelope	Maintenance								1,000		600								1,000			
Summary	Replacement	8,220									1,100											8,220
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement	2,200										1,450										2,200
Electrical Summary	Maintenance																					
	Replacement	4,565									3,110											4,195
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	1,000					1,000		1,000		600	1,000					1,000		1,000			1,000
Present Value	Replacement	14,985									4,210	1,450									1,600	14,615
No.11 Verdier Park Washrooms																						
Interior Finishes	Maintenance																					
Summary	Replacement			600					600					600					600			
Building Envelope	Maintenance									500				400				500				
Summary	Replacement																					
Mechanical Summary	Maintenance			1,000					1,000					1,000					1,000			
	Replacement								450										450			
Electrical Summary	Maintenance																					
	Replacement								150										1,590			
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance			1,000					1,000	500				1,400				500	1,000			
Present Value	Replacement			600					1,200					600					2,640			
No.12 CP Fieldhouse																						
Interior Finishes	Maintenance																					
Summary	Replacement						2,100		3,460								2,100					
Building Envelope	Maintenance	1,500		2,875	3,000							1,500	3,000								3,000	1,500
Summary	Replacement																		5,200	39,100		
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement			18,400								6,500		400					450			
Electrical Summary	Maintenance	150										150							1,200			150
	Replacement	6,295		22,780					6,800										22,620			6,295
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	2,650		2,875	3,000		1,000					2,650	3,000				1,000		1,200		3,000	2,650
Present Value	Replacement	6,295		41,180			2,100		10,260			6,500		400			2,100		28,270	39,100		6,295
No.13 CP Diamond #1 Utility																						
Interior Finishes	Maintenance																					
Summary	Replacement																					
Building Envelope	Maintenance					200	300				200					200	300				200	
Summary	Replacement	1,200																				
Mechanical Summary	Maintenance																					
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement																					
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance					200	300				200					200	300				200	
Present Value	Replacement	1,200																				



R2-Parks and Recreation  
Report 2 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.14 CP Diamond #1																						
Interior Finishes	Maintenance																					
Summary	Replacement																					
Building Envelope	Maintenance	600					100					600					100					600
Summary	Replacement																700					
Mechanical Summary	Maintenance																					
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement																					
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	600					100					600					100					600
	Replacement																700					
No.15 CP Diamond #2																						
Interior Finishes	Maintenance																					
Summary	Replacement																					
Building Envelope	Maintenance						600										600					
Summary	Replacement																900					
Mechanical Summary	Maintenance																					
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement						1,680															
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance						600										600					
Present Value	Replacement						1,680										900					
No.16 CP Diamond #5																						
Interior Finishes	Maintenance																					
Summary	Replacement				5,200													1,500				
Building Envelope	Maintenance						880	3,100										3,100				
Summary	Replacement		2,700																			
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement			1,000			1,750							1,000								
Electrical Summary	Maintenance																					
	Replacement	1,260					2,140										440					1,260
Miscellaneous Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	1,000					1,880	3,100				1,000					1,000	3,100				1,000
	Replacement	1,260	2,700	1,000	5,200		3,890							1,000			440	1,500				1,260
No.17 CP Diamond #6																						
Interior Finishes	Maintenance																					
Summary	Replacement						4,800							1,500								
Building Envelope	Maintenance			3,120										3,120			1,400					
Summary	Replacement				2,700												6,100					
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement	1,000			1,000		450								1,000							1,000
Electrical Summary	Maintenance																					
	Replacement	3,330					2,680					400					220					3,330
Building Summary	Maintenance	1,000		3,120			1,000					1,000		3,120			2,400					1,000
Present Value	Replacement	4,330			3,700		7,930					400		1,500	1,000		6,320					4,330



# R2-Parks and Recreation

## Report 2 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.18 CP Lacrosse Storage																						
Interior Finishes Summary	Maintenance																					
	Replacement																					
Building Envelope Summary	Maintenance	1,100								1,100								1,100				
	Replacement											6,000										
Mechanical Summary	Maintenance																					
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	1,100								1,100								1,100				
Present Value	Replacement											6,000										
No.19 CP Residence																						
Interior Finishes Summary	Maintenance																					
	Replacement		3,060														2,000				2,400	
Building Envelope Summary	Maintenance	200	1,690	200		200	2,375	200		200	400	200		200		200		200	1,690	200		200
	Replacement											300			5,600							
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement						450		1,000								10,000		1,000			
Electrical Summary	Maintenance																					
	Replacement						3,140					3,685					2,980					2,770
Building Summary	Maintenance	1,200	1,690	200		200	3,375	200		200	400	1,200		200		200	1,000	200	1,690	200		1,200
Present Value	Replacement		3,060				3,590		1,000			3,985			5,600		14,980		1,000		2,400	2,770
No.44 CP Garage																						
Interior Finishes Summary	Maintenance																					
	Replacement																					
Building Envelope Summary	Maintenance				1,750								1,850								1,350	
	Replacement	2,300																			5,700	
Mechanical Summary	Maintenance		1,000					1,000					1,000					1,000				
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement						450															450
Building Summary	Maintenance		1,000		1,750			1,000					2,850					1,000				1,350
Present Value	Replacement	2,300					450														5,700	450
No.39 CP Shelter#2 & Storage																						
Interior Finishes Summary	Maintenance																					
	Replacement																					
Building Envelope Summary	Maintenance				6,450										6,450							
	Replacement																				10,700	
Mechanical Summary	Maintenance	1,000					1,000					1,000					1,000					1,000
	Replacement	1,250										1,000										1,250
Electrical Summary	Maintenance																					
	Replacement																					
Building Summary	Maintenance	1,000			6,450		1,000					1,000			6,450		1,000					1,000
Present Value	Replacement	1,250										1,000									10,700	1,250
Restorative Maintenance																						
			3,298	3,298	3,298	3,298	3,298															
Report Summary																						
Present Value	Maintenance	9,550	2,690	7,195	11,200	400	10,255	4,300	2,000	1,800	1,200	8,450	5,850	4,720	6,450	400	8,400	5,900	4,890	200	4,550	8,450
	Replacement	31,620	5,760	42,780	8,900		19,640		12,460		4,210	19,335		3,500	6,600		25,440	1,500	31,910	39,100	20,400	30,970
Report Summary	Maintenance	9,550	2,744	7,486	11,886	433	11,322	4,842	2,297	2,109	1,434	10,301	7,274	5,986	8,344	528	11,305	8,099	6,847	286	6,628	12,556
Future Value	Replacement	31,620	5,875	44,508	9,445		21,684		14,313		5,031	23,569		4,439	8,538		34,239	2,059	44,682	55,844	29,719	46,020
Yearly Totals		\$41,170	\$11,748	\$53,273	\$23,398	\$3,698	\$33,193	\$4,300	\$14,460	\$1,800	\$5,410	\$27,785	\$5,850	\$8,220	\$13,050	\$400	\$33,840	\$7,400	\$36,800	\$39,300	\$24,950	\$39,420
Totals Inflated at 2% per Year		\$41,170	\$11,983	\$55,426	\$24,831	\$4,003	\$36,648	\$4,842	\$16,610	\$2,109	\$6,465	\$33,870	\$7,274	\$10,425	\$16,882	\$528	\$45,544	\$10,159	\$51,529	\$56,130	\$36,347	\$58,576



## R3-Heritage

### Report 3 Forecasting Table

[illegible]



## R3-Heritage

### Report 3 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
No.27 NF Creamery																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance		400					400			100		400					400					
	Replacement		400																		1,300		
Building Summary	Maintenance		400					400			100		400					400					
	Replacement		400																		1,300		
No.28 NF Main Barn																							
Interior Finishes Summary	Maintenance																						
	Replacement				1,200																		
Building Envelope Summary	Maintenance		1,700					1,700					1,700					1,700					
	Replacement		4,500																				
Building Summary	Maintenance		1,700					1,700					1,700					1,700					
	Replacement		4,500		1,200																		
No.29 NF Original Cabin																							
Interior Finishes Summary	Maintenance																						
	Replacement				1,800																		
Building Envelope Summary	Maintenance		700					700					700					700					
	Replacement		500																4,500				
Building Summary	Maintenance		700					700					700					700					
	Replacement		500		1,800														4,500				
No.30 NF Outhouse																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance		200					200					200					200					
	Replacement		225																				
Building Summary	Maintenance		200					200					200					200					
	Replacement		225																				
No.31 NF Guest Cabin																							
Interior Finishes Summary	Maintenance																						
	Replacement			1,500																			
Building Envelope Summary	Maintenance			900					500					500					500				
	Replacement			2,500																			
Building Summary	Maintenance			900					500					500					500				
	Replacement			4,000																			
No.32 NF Milking Shed																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance			2,850					1,100					1,100					1,100				
	Replacement			500																			
Building Summary	Maintenance			2,850					1,100					1,100					1,100				
	Replacement			500																			
No.34 NF Boatbuilding Storage																							
Interior Finishes Summary	Maintenance																						
	Replacement						1,500																
Building Envelope Summary	Maintenance			400					400					400					400				
	Replacement			1,800																			
Building Summary	Maintenance			400					400					400					400				
	Replacement			1,800			1,500																
No.35 NF North Boat House																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance			900					900					900					900				
	Replacement																				6,800		
Building Summary	Maintenance			900					900					900					900				
	Replacement																				6,800		
No.36 NF South Boat House																							
Interior Finishes Summary	Maintenance																						
	Replacement																						
Building Envelope Summary	Maintenance			600					600					600					600				
	Replacement																				4,500		
Building Summary	Maintenance			600					600					600					600				
	Replacement																				4,500		



# R3-Heritage

## Report 3 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.37 NF Steam Shed																						
Interior Finishes Summary	Maintenance		1,500																			
Building Envelope Summary	Replacement																					
	Maintenance		2,000	500					500					500					500			
Building Summary	Replacement			2,300																		
	Maintenance		3,500	500					500					500					500			
	Replacement		2,250	2,300																		
No.38 West Saanich School																						
Interior Finishes Summary	Maintenance	800																				
Building Envelope Summary	Replacement						4,200					12,800										
	Maintenance		7,600				500				7,600						500		7,600			
Mechanical Summary	Replacement									26,000												
	Maintenance		2,000					2,000					2,000					2,000				
Electrical Summary	Replacement						6,000															
	Maintenance																					
Building Summary	Replacement	2,290					3,760					3,660									1,400	
	Maintenance	800	9,600				500	2,000			7,600		2,000				500	2,000	7,600			
	Replacement	2,290					13,960				26,000	16,460									1,400	
Restorative Maintenance	Maintenance		9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814	9,814										
Report Summary Present	Maintenance	3,300	27,000	9,450	150		4,250	11,400	4,150	2,700	7,850	2,500	11,550	4,000	11,670		3,150	16,650	15,050		150	2,500
	Replacement	2,290	12,175	13,600	3,000	7,000	25,210				26,600	16,460				2,000	900		4,500	22,930	34,420	15,700
Report Summary Inflated	Maintenance	3,300	27,540	9,832	159		4,692	12,838	4,767	3,163	9,381	3,047	14,361	5,073	15,096		4,239	22,857	21,074		219	3,715
	Replacement	2,290	12,419	14,149	3,184	7,577	27,834				31,789	20,065				2,639	1,211		6,301	32,750	50,143	23,329
Yearly Totals		\$5,590	\$48,989	\$32,864	\$12,964	\$16,814	\$39,274	\$21,214	\$13,964	\$12,514	\$44,264	\$28,774	\$11,550	\$4,000	\$11,670	\$2,000	\$4,050	\$16,650	\$19,550	\$22,930	\$34,570	\$18,200
Totals Inflated at 2% per Year		\$5,590	\$49,969	\$34,192	\$13,758	\$18,200	\$43,362	\$23,890	\$16,040	\$14,662	\$52,900	\$35,075	\$14,361	\$5,073	\$15,096	\$2,639	\$5,451	\$22,857	\$27,375	\$32,750	\$50,362	\$27,044



R4-External Users

Report 4 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.4 Fire Museum																						
Interior Finishes Summary	Maintenance																					
	Replacement							7,560										3,040				
Building Envelope Summary	Maintenance	1,360	300					6,520		1,360								1,660				
	Replacement							5,350														
Mechanical Summary	Maintenance		1,000					1,000					1,000					1,000				
	Replacement							1,000					4,500					1,000				
Electrical Summary	Maintenance		300										300									
	Replacement							12,090										17,620				
Building Summary Present Value	Maintenance	1,360	1,600					7,520		1,360			1,300					2,660				
	Replacement							26,000					4,500					21,660				
No.40 Lions Hall																						
Interior Finishes Summary	Maintenance					1,085											15,196					
	Replacement					8,000											9,750					
Building Envelope Summary	Maintenance			4,328										4,499								
	Replacement			9,500								9,832					8,460					
Mechanical Summary	Maintenance	2,000					2,000					2,000					2,000				2,000	
	Replacement				1,000										1,000							
Electrical Summary	Maintenance																					
	Replacement						6,055					6,130					150					
Building Summary Present Value	Maintenance	2,000		4,328		1,085	2,000					2,000		4,499			17,196				2,000	
	Replacement			9,500	1,000	8,000	6,055					15,962			1,000		18,360					
No.41 Centre For Active Living																						
Interior Finishes Summary	Maintenance							32,325														
	Replacement		3,035			1,147		3,563					3,035	14,080		1,147		3,035				
Building Envelope Summary	Maintenance			8,428		1,060		3,960			3,564					1,060		2,504			1,060	
	Replacement				15,300																	
Mechanical Summary	Maintenance						600										600					
	Replacement	2,000	2,000				2,000					2,450	2,000				2,000			16,000	2,000	
Electrical Summary	Maintenance						300										300					
	Replacement			4,225		26,300	5,000					22,465				23,100	900				5,000	
Building Summary Present Value	Maintenance			8,428		1,060	900	36,285			3,564					1,060	900	2,504			1,060	
	Replacement	2,000	5,035	4,225	15,300	27,447	7,000	3,563				24,915	5,035	14,080		24,247	2,900	3,035			16,000	
No.42 Lawnbowling Clubhouse																						
Interior Finishes Summary	Maintenance																					
	Replacement					1,418		11,643										13,085				
Building Envelope Summary	Maintenance		2,799																			
	Replacement	10,000	12,471					4,517														
Mechanical Summary	Maintenance	2,000					2,000					2,000					2,000				2,000	
	Replacement						1,000					950					1,000					
Electrical Summary	Maintenance		150										150									
	Replacement						3,550					14,140									3,600	
Building Summary Present Value	Maintenance	2,000	2,949				2,000					2,000	150				2,000				2,000	
	Replacement	10,000	12,471			1,418	4,550	16,160				15,090					1,000	13,085			3,600	



## R4-External Users

## Report 4 Forecasting Table



Component Name	Task	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
No.43 Lawnbowling Storage																						
Interior Finishes Summary	Maintenance																					
	Replacement																					
Building Envelope Summary	Maintenance						770															
	Replacement						2,240										2,700					
Mechanical Summary	Maintenance																					
	Replacement																					
Electrical Summary	Maintenance																					
	Replacement																					
Building Summary Present Value	Maintenance						770															
	Replacement						2,240										2,700					
Restorative Maintenance	Maintenance		1,540	1,540	1,540	1,540	1,540															
Report Summary Present Value	Maintenance	5,360	4,549	12,756		2,145	5,670	43,805		1,360	3,564	4,000	1,450	4,499		1,060	20,096	5,164			1,060	4,000
	Replacement	12,000	17,505	13,725	16,300	36,864	19,845	45,723				55,967	9,535	14,080	1,000	24,247	24,960	37,780			16,000	10,600
Report Summary Future Value	Maintenance	5,360	4,640	13,272		2,322	6,260	49,331		1,593	4,259	4,876	1,803	5,706		1,399	27,046	7,089			1,544	5,944
	Replacement	12,000	17,855	14,279	17,298	39,903	21,910	51,491				68,223	11,855	17,857	1,294	31,993	33,593	51,863			23,309	15,751
Yearly Totals		\$17,360	\$23,594	\$28,021	\$17,840	\$40,550	\$27,055	\$89,527		\$1,360	\$3,564	\$59,967	\$10,985	\$18,579	\$1,000	\$25,307	\$45,056	\$42,944			\$17,060	\$14,600
Totals Inflated at 2% per Year		\$17,360	\$24,066	\$29,153	\$18,932	\$43,892	\$29,871	\$100,822		\$1,593	\$4,259	\$73,099	\$13,658	\$23,563	\$1,294	\$33,392	\$60,639	\$58,952			\$24,853	\$21,695



## **APPENDIX III**




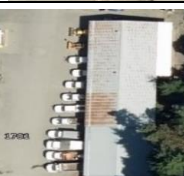



### **BUILDING DISCOVERY SHEET**



Levelton File # R514-1802-00  
June 11, 2015

District of Central Saanich  
Long-term Asset Management Plan  
Report No.0 – Master Report




		(*1) = "N/N" etc.(and for example) Refers to NO past report/interest / NO future report, interest, for that specialization																		
		(*2) = Seismic relates to building, Mech./Elect/ lighting etc. subconsults would include seismic restraint commentary in their scope where relevant												Landlord standards and Leasee responsibilities may require further clarification in this report.						
		(*3) = 'Hazmat, Soils, Seismic, Building Enclosure, Energy Studies' are currently excluded from our scope.																		
LEVELTON																				
Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Soils)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
1	1	Municipal Hall (Admin/Police/Fire Stn#2)	1903 Mt Newton Road	1965,'77,'79 Rem in '89&2000	2,828 Combined	E/G/D			N/N	N/N	Y/N	Y/N *go to FS# 1	N/?	Y/N	Y/?	50 staff +10 visitors/ daytime workdays	100%	Same	All	BECA 2009, Energy 2013, Health&Safety 2014, IAQ 2012, HazMat 2013, HVAC?? Post Disaster=holding cells, firearms etc. Hose fire tower noted.
1	5	Fire Station #1	1512 Keating Cross Rd	2013	2,183	E			n/a	N/N	n/a	Y/Y	Y/Y	N/N	N/N	6 F/T staff 24/7  25-30 pers 5 reg.hr.days	100%	Same, AND Emergency Operations Centre/ Alternate City Hall/ Police Facility	All	
1	6	Public Works Main Complex	1703 Keating Cross Rd	1973	772	E/P/D			N/N	N/Y	Y/N	N/Y	N/Y	Y/N	N/?	40-50 pers / day 5 reg.hr.days	65% winter  50% /24hrs.	Same	Site Plan	Energy 2004 Below grade fuel tanks small leak monitored. Asbestos Confirmed. After disaster=maintain facilities vehicle access e.g., doors only?
1	7	Public Works East Bays/Roads & Parks Shop	1703 Keating Cross Rd	1974	726	E			N/N	N/N	N/?	N/Y	N/Y	Y/N	N/?	Owner input required.	75%	Same	Site Plan	Energy 2004 More of a shell. New Roof. After disaster=maintain facilities vehicle access e.g., doors only?
1	8	Public Works Wood Shop	1703 Keating Cross Rd	1979	41	E			N/N	N/N	N/?	N/N	N/N	Y/N	N/?	None, Storage.	50%		Site Plan	
1	9	Cultural Centre (Library, Meeting rooms)	1209 Clarke Rd	1988	880	E			N/N	N/N	Y/N	N/?	N/?	Y/N	N/?	Varies, 60-120 pers., 5-7 days, reg. hours some evenings	85%	Same	All	Lighting 2009 Paint 2009 Roof 2005-2008??
1	45	Public Works Equipment Shed	1703 Keating Cross Rd	1995	12	E			N/N	N/N	N/N	N/N	N/N	N/N	N/N	None, Storage.		Same	None	



Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Solis)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
1	46	Public Works Equipment & Supplies Shed	1703 Keating Cross Rd	1997	42	E			N/N	N/N	N/N	N/N	N/N	N/N	N/N	None, Storage.		Same	None	
1	47	Public Works Water/Sewer Equipment Shed	1703 Keating Cross Rd	1989/2010	155	N/A			N/N	N/N	N/N	N/N	N/N	N/N	N/N	None, Storage.		Same	None	
1	48	Public Works Salt Shed	1703 Keating Cross Rd	2012	280	N/A			N/N	N/N	N/N	N/N	N/N	N/N	N/N	None, Storage.		Same	None	
1	49	Public Works Environmental Compliance	1703 Keating Cross Rd	N/A	N/A	N/A			N/N	Y/Y?	Y/Y?	N/N	N/N	N/N	N/N	N/A	N/A	N/A	N/A	Not a building but associated infrastructure that is included for reference only.
2	10	Rom Knott Park Concession	1200 Sluggett Rd	c.1984	95	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Weekends, Evenings, Seasonal	30%	Same	A	
2	11	Verdier Park Washrooms	819 Verdier Ave	2012	22	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	2 -4 pers.	15%	Same	A	
2	12	CP Fieldhouse	1809 Hovey Rd	1992	219	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Open Year 'Round, washrooms open daily, Meeting room	80%	Same	All	New Roof-2013 Lighting 2009
2	13	CP Diamond #1 Utility	7450 Wallace Dr	1985	"=168* 0.0929 =15	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Seasonal, Low	15%	Same	No	



Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Soils)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
2	14	CP Diamond #1 Building (Peter Parsons)	7450 Wallace Dr	1980	7.8	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Seasonal, Low	15%	Same	No	
2	15	CP Diamond #2 Building	7526 Wallace Dr	1980	8.0	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Seasonal, Low	15%	Same	No	
2	16	CP Diamond #5 Building (Edith Cooke)	1836 Hovey Rd	c.1980	107	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Seasonal, Low 10 pers?	15%	Same	A	
2	17	CP Diamond #6 building	7576 Wallace Dr	1990	112				N/N	N/N	N/N	N/N	N/N	N/N	N/?	Seasonal, Low 10 pers?	15%	Same	No	
2	18	CP Lacrosse Storage	1787 Hovey Rd	1985	27	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Unoccupied	75%	Same	A	
2	19	CP Residence	1785 Hovey Rd	2000	113	E/O/P			N/N	N/N	N/?	N/N	N/?	N/?	N/?	Family?	100%	Same	A	Roof'09 Garage Rem + Paint'14
2	44	CP Garage	1785 Hovey Rd	c.1967	113	E/O/P			N/N	N/N	N/?	N/N	N/?	N/?	N/?	Family?	100%	Same	A	Roof'09 Garage Rem + Paint'14
2	39	CP Shelter #2 & Storage	1809 Hovey Rd	1990	302	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	Unoccupied, Storage of Cooking Equip/ Trailers, Tanks.	75%	Same	No	
3	20	Butterfield Barn/Chicken Coup	8000 Thompson Plc	1910	115	-			Y/Y	N/?	N/?	N/N	N/N	N/N	N/N	Unoccupied, Restricted (View ext. only)	0%	Same	No	Roof 2010



Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Soils)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
3	21	Butterfield Garage	8000 Thompson Plc	1930	61	E			Y/Y	N/N	N/?	N/N	N/N	N/N	N/?	Unoccupied	50%	Same	No	
3	22	Butterfield Residence	8000 Thompson Plc	1910	170	E			Y/Y	N/N	N/?	N/N	N/N	N/N	N/?	Family?	100%	Same	No	Roof+Chimney 2009
3	23	NF Main Farmhouse	8073 Old Veyaness Ave	1905	77	N/A			Y/Y	Y/N	N/?	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Masselink Study 2007 for All
3	24	NF Garage / Workshop	8073 Old Veyaness Ave	c.1900	56	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Main Farmhouse and outbuildings on first Acre from 1905, remaining 15 acres likely erected at a later date (year in italics, TBC, currently as listed in Masselink Stucy).
3	25	NF Chicken Coop	8073 Old Veyaness Ave	c.1900	9	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Main Farmhouse and outbuildings OF INTEREST to the Farmland's Trust as a park = Future use.
3	26	NF West Shed	8073 Old Veyaness Ave	c.1900	16	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	
3	27	NF Creamery	8073 Old Veyaness Ave	c.1900	7	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	
3	28	NF Main Barn	8073 Old Veyaness Ave	c.1900	79	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	
3	29	NF Original Cabin	8073 Old Veyaness Ave	1896	20	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	



Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Soils)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
3	30	NF Outhouse	8073 Old Veyaness Ave	c.1897	1.7	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	
3	31	NF Guest Cabin	8073 Old Veyaness Ave	c.1930	12	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Sheep on site. Keep gates closed
3	32	NF Milking Shed	8073 Old Veyaness Ave	c.1900/1970	36	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Sheep on site. Keep gates closed
3	33	Boatbuilding Shed	8073 Old Veyaness Ave	?	20	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	Building removed from inventory. Beyond state of repairs.
3	34	NF East Shed	8073 Old Veyaness Ave	c.1930	6	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	
3	35	NF North Boat House	8073 Old Veyaness Ave	1931	32	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied, Used by Paddling Club for Storage	100%	Same	No	
3	36	NF South Boat House	8073 Old Veyaness Ave	1931	20	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied, Used by Paddling Club for Storage	100%	Same	No	
3	37	NF Steam Shed	8073 Old Veyaness Ave	1931	7	N/A			Y/Y	Y/N	N/N	N/N	N/N	N/N	N/N	Unoccupied	0%	Same	No	



Report #	Ref#	Building	Address	Year Built	Floor Area (m <sup>2</sup> )	Energy Sources	Perspective Thumb	CRD Aerial	Heritage?	Environmental (Soils)?	HazMat?	After Disaster?	Seismic? (*2)	Energy?	Enclosure?	Approx. Current Usage? Occupant Load?	% Used	Intended Future Use(s)	Drawings Available (A,M,E,S)	Notes
3	38	West Saanich School	7130 West Saanich Rd	1908/1916	246	E/D			Y/Y	N/?	N/?	N/Y	N/Y	N/N	N/?	50 pers. M-F, 3pm-9pm Sept-June. Music events in adjacent park.	75%	Same	A/S of 2007 Repairs	Energy 2004. Heated only when occupied. Scouts/Guides Tours. Walls tied to foundation. Assess Roof Assembly??
4	4	Fire Museum	1901 Mt. Newton Rd	2001	176	E			N/N	N/N	N/N	N/N	N/N	N/N	N/?	10 pers few days/month, (internal projects)	75%	Same	All	Lighting 2010
4	40	Lions Hall (LEASED, *6)	6994 East Saanich Rd	c.1894/1919	321	E			Y/N	N/N	N/Y	N/Y	N/N	N/N	N/?	<--Obtain from Lessee-->		Same	None	
4	41	Centre for Active Living [Seniors Centre (55+)] (LEASED, *6)	1229 Clarke Rd	1950's Rancher 1988-2storey wing Addition 1991	610 315	E/D			N/N	N/N	Y/N	N/?	N/?	Y/N	N/?	<--Obtain from Lessee-->	TBD	Same	All	Lighting 2009? Roof 2012
4	42	Lawnbowling clubhouse (LEASED, *6)	1800 Hovey Rd	1934 + Adds in 1976, 1988 and 1991	234	E			N/N	N/?	N/?	N/?	N/?	N/?	N/?	30 pers? Seasonal? Assembly	30%	Same	No	
4	43	Lawnbowling Storage (LEASED, *6)	1800 Hovey Rd	2000	14	-			N/N	N/?	N/?	N/N	N/?	N/?	N/?	Unoccupied	100%	Same	No	



## **APPENDIX IV**

### **GLOSSARY OF TERMS**





<b>Air Barrier</b>	Materials and components that together control the flow of air through an assembly and thus limit the potential for heat loss and condensation due to air movement.
<b>Adhesion</b>	The property of a coating or sealant which measures its ability to stick or bond to the surface to which it is applied.
<b>Alligatoring</b>	Shrinkage cracking of the bituminous surface of built-up roofing, or the exposed surface of smooth-surface roofing, producing a pattern of deep cracks with the scaly look of an alligator's hide.
<b>Adhesion Failure</b>	Failure of a compound by pulling away from the surface with which is in contact. (see cohesive failure).
<b>Asphalt</b>	A highly viscous hydrocarbon produced from the residuum left after the distillation of petroleum used as the waterproofing agent of a built-up roof.
<b>Assembly</b>	The collective layers of components and materials which together comprise the complete cross-section of the wall or roof.
<b>Balcony</b>	A horizontal surface exposed to outdoors, and intended for pedestrian use, but projected from the building so that it is not located over a living space or is acting as a roof.
<b>Ballast</b>	An anchoring material such as rounded river rock, gravel, or precast concrete pavers, which is used to hold roof membranes in place and resist wind uplift forces.
<b>Base Flashing</b>	The part of the roofing that is turned up at the intersection of a roof with a wall or another roof penetration. It may be made of the same material as the main roofing membrane or of a compatible material.
<b>Bitumen</b>	A generic term for either asphalt or coal tar pitch used in the roofing industry.
<b>Blister</b>	A spongy, raised portion of roofing membrane, ranging in size from 25 mm (1") in diameter and barely detectable to as much as 4.6 m <sup>2</sup> (50 ft <sup>2</sup> ) in area and 300 mm (12") high. Blisters result from the pressure of entrapped air or water vapour.
<b>Bond Breaker</b>	Use where it is desired that the sealant not adhere.
<b>Building Envelope</b>	Now called an environmental separator in Building Codes, refers to those parts of the building which separate inside, conditioned space from unconditioned or outside space, and includes windows, doors, walls, roofs, and foundations
<b>Built-up Roofing (BUR)</b>	A continuous, semi-flexible roof covering, consisting of laminations of plies of saturated or coated felts alternated with layers of bitumen. Surfaced with bitumen, and in some cases covered with aggregate.
<b>Cant Strip</b>	A continuous strip of triangular cross-section, fitted into the angle formed by a structural deck and a wall or other vertical surface. Used to provide a gradual transition for base flashing and horizontal roof membrane.
<b>Cap Flashing</b>	Component that sheds water from the tops of walls. It is difficult to make metal cap flashing waterproof at joints and intersections, and it therefore requires a secondary, continuous and waterproof membrane below it.
<b>Caulking</b>	A material used for joint sealing where minor or no elastomeric properties are required



<b>Cladding</b>	A material or component of the wall assembly, which forms the exterior surface of the wall and is exposed to the environment forces.
<b>Cohesive Failure</b>	Splitting and opening of a compound resulting from over extension of the compound caused by excessive movement (see adhesion failure).
<b>Concealed Barrier</b>	A strategy for rain penetration control that relies on the elimination of holes through a combination of the cladding and a secondary plane further into the assembly.
<b>Contract</b>	The undertaking by the parties to perform their respective duties, responsibilities, and obligations as prescribed in the Contract Documents and represents the entire agreement between the parties.
<b>Counter Flashing</b>	Prevents water from penetrating behind the top edge of base flashing, and consists of a separate piece of flashing placed over the top of the base flashing. It is usually made of sheet metal.
<b>Cross Cavity Flashing</b>	Flashing that intercepts and directs water flowing down the cavity of a wall assembly to the outside of the building.
<b>Deck</b>	A horizontal surface exposed to outdoors, located over a living space, and intended for pedestrian use in addition to performing the function of a roof.
<b>Delamination</b>	Separation of the plies in a roof membrane system or separation of laminated layers of insulation.
<b>Drainage</b>	Uses surfaces of the assembly to drain water away from the assembly.
<b>Drip Flashing</b>	A component that directs water flowing down the face of vertical elements, such as walls or windows, away from the surface.
<b>Durability</b>	Terminology describing the capacity of a material to tolerate environmental forces.
<b>Efflorescence</b>	A white powdery deposit on the surface indicating moisture ingress through the concrete. This is caused when water travelling through the concrete reacts with calcium hydroxide.
<b>Element</b>	A material or component within the assembly.
<b>Emulsion</b>	An intimate mixture of bitumen and water, with uniform dispersion of the bitumen globules, achieved through a chemical of clay emulsifying agent.
<b>Exterior Glazed</b>	Glass set from the exterior of the building.
<b>Exterior Stop</b>	The removable molding or bead holding the glass or panel in place when it is on the exterior side of the glass or panel, as contrasted to an interior stop located on the interior side of the glass.
<b>Face Seal</b>	A strategy for rain penetration control that relies on the elimination of holes through the cladding.
<b>Felt</b>	A fabric made by the interlocking of fibres. Roofing felts are manufactured from cellulosic fibres (organic felts), asbestos fibres (asbestos felts), or glass fibres (glass fibre felts). Felts are either saturated, or saturated and coated with bitumen.
<b>Fishmouth</b>	An opening formed by an edge wrinkle in a felt where it overlaps another felt in a built-up roofing membrane.



<b>Flashing</b>	Connecting devices that seal membrane joints, drains, gravel stops and other places where the membrane is interrupted. Base flashing forms the upturned edges of the watertight membrane. Cap or counter flashing shields the exposed edges and joints of the base flashing.
<b>Frame</b>	Outside member of a window unit, which encloses the sash. Compound of side jambs, head and sill.
<b>Grade</b>	The classification of materials by quality. Also, the ground elevation or level, contemplated or existing, at the outside walls of a building, or elsewhere on the building site.
<b>Granules</b>	Opaque, natural, or synthetically coloured aggregate commonly used to surface cap sheets and roofing shingles.
<b>Gravel</b>	Coarse granular aggregate, having rounded edges, resulting from the natural erosion of rock.
<b>Gravel Stop</b>	Flanged device, normally metallic, designed to prevent loose aggregate from washing off the roof and to provide a finished edge detail for the built-up roofing assembly.
<b>HPO</b>	Homeowner Protection Office. The HPO is a provincial Crown corporation formed in response to the recommendations of the Barrett Commission.
<b>Head</b>	The upper horizontal cross member, between the <b>jambs</b> , which forms the top of a door or window frame; may provide structural support for construction above if required, as a door head or window head.
<b>Horizontal Joint</b>	A horizontal joint on a wall which provides capability for differential movement of portions of the building structure (expansion joint) or prevents or localizes cracking of brittle materials such as stucco (control joint).
<b>Housewrap</b>	A sheet plastic material used as a breather type sheathing membrane. It is generally installed between the wall sheathing and the exterior cladding. Although at one time used as a proprietary term, housewrap is now used to represent a generic group of materials. One common type of housewrap consists of Spun-bonded Polyolefin (SBPO); another is made of perforated polyethylene.
<b>Interior Glazed</b>	Glass set from the interior of the building.
<b>Jamb</b>	A vertical member at either side of a doorframe, window frame or door lining.
<b>Loosely Laid Membrane</b>	Membranes which are not attached to the substrate except at the perimeter of the roof. They are held in place with appropriate and adequate ballast.
<b>Maintenance</b>	A scheduled process of periodic inspection and minor repairs to the building envelope.
<b>Modified Bitumen</b>	Asphalt enhanced by the addition of polymer modifiers to increase cold temperature flexibility and warm temperature flow resistance and stability. The most common modifiers are SBS (styrene butadiene styrene) and APP (atactic polypropylene).
<b>Moisture Barrier</b>	Any material used to retard the passage or flow of moisture into the assembly, thus preventing condensation.
<b>Moisture Content</b>	With respect to wood: The weight of water contained in wood expressed as a percentage of the weight of oven-dry wood.



<b>Parapet</b>	The part of any wall entirely above the roof.
<b>Penetration</b>	An intentional opening through an assembly.
<b>Ply</b>	A layer of roofing membrane. A four-ply membrane has at least four plies of felt at any vertical cross section cut through the membrane.
<b>Pressure Treatment</b>	A process for treatment of wood to provide greater durability against moisture.
<b>PVC (Poly Vinyl Chloride)</b>	A thermoplastic sheet material used for single ply roofing membranes.
<b>Rainscreen</b>	A wall designed to prevent rain penetration by providing a cavity between the cladding and the backup wall and vents the wall to allow moisture drainage.
<b>Reglet</b>	A groove in a wall or other vertical surface adjoining a roof surface for the embedment of counter flashing.
<b>Ridging</b>	An upward “testing” displacement of a roof membrane, frequently occurring over insulation joints, deck joints, and base sheet edges.
<b>Saddle</b>	The junction of small horizontal surfaces, such as the top of a balcony guardrail or parapet wall, with a vertical surface, such as a wall.
<b>Sealant</b>	Compound used to fill and seal joint or opening, contrasted to a sealer which is a liquid used to seal a porous surface.
<b>Sealed Unit</b>	Two or more sheets of glass separated by a spacer bar and hermetically sealed for airtightness. Has a desiccant in between the sheets of glass to absorb and hold any moisture to prevent condensation inside the unit.
<b>Service Life (Expected)</b>	The actual period during which building envelope materials, components and assemblies perform without unforeseen maintenance and renewal costs.
<b>Sheathing</b>	Sheet material attached to the wall framing to provide structural backing for the cladding and sheathing paper. Can be designed to provide structural lateral stiffness for the wall.
<b>Sheathing Membrane</b>	Sheet material in an exterior wall assembly used to retard penetration of water further into the structure once past the cladding. Waterproof type sheathing membranes can also perform the function of the air barrier and the vapour barrier. These materials include both breather type sheathing membranes such as sheathing paper and housewraps, and waterproof sheathing membranes.
<b>Sheathing Paper</b>	Asphalt-impregnated organic sheet material (breather-type sheathing membrane) attached to the sheathing exterior which creates a water-shedding surface.
<b>Sill</b>	The horizontal member that forms the bottom of a window frame. It is generally slanted down to the outside to shed standing water.
<b>Single Ply Membrane</b>	Roofing membranes that are field applied using a pre-manufactured sheet of single layer membrane material (either homogenous or composite) rather than multiple layer.
<b>Smooth-Surfaced Roof</b>	A built-up roofing membrane surfaced with a coating of hot asphalt, asphalt emulsion or asphalt cutback.
<b>Stepped Flashing</b>	The material installed at the junction between a sloping roof and a wall running parallel to the slope. Both base and counter flashing are overlapped and installed in pieces following the slope to form the complete stepped flashing.



<b>Substantial Performance</b>	A stage that is reached when the work is ready for use or is being used for the purpose intended as is so certified by the consultant
<b>Substrate</b>	The surface upon which the roofing membrane is placed – structural deck or insulation.
<b>Threshold</b>	A strip fastened to the floor beneath a door, usually required to cover a joint where two types of floor material meet; may provide weather protection at exterior doors (also referred to as doorsill).
<b>Through-wall Flashing</b>	A waterproof membrane or metal flashing that 1) allows water behind the cladding to shed away from the building, 2) prevents water from entering the wall at joints, and 3) prevents capillary transfer of moisture through porous materials such as concrete or masonry if the moisture source is below grade.
<b>Valley Flashing</b>	Flashing installed in the valleys of sloping shingled roofs to give continuity to the roofing system.
<b>Vapour Barrier</b>	A material with low vapour permeability that is located within the assembly to control the flow of vapour and limit the potential for condensation due to diffusion.
<b>Vapour Retarder</b>	A material designed to restrict the passage of water vapour through a wall or roof assembly.
<b>Walkway</b>	A pedestrian corridor exposed to outdoors, which provides access between suites and stairwells or elevators. It may also be a roof.
<b>Weephole</b>	Opening at the base of a cavity wall to collect moisture and dispense it or breather put in to sealant to relieve moisture.
<b>Work</b>	The total construction and related services required by the Contract Documents

Acknowledgement is given to:

Canada Mortgage and Housing Corporation, "Best Practice Guide Wood Frame Envelopes in The Coastal Climate of British Columbia" 1<sup>st</sup> Edition, September 1998 as a basis for this glossary.

Canada Mortgage and Housing Corporation, "Building Envelope Rehabilitation – Consultants Guide" 1<sup>st</sup> Edition, 2001

Canadian Construction Documents Committee, "CCDC 2 – Definitions", 1994 Dictionary of Architecture and Construction, Edited by Harris, Cyril M., McGraw Hill Inc., 1975