# Strata Plan BCS 2789 – Keystone 12350 Harris Road, Pitt Meadows, B.C.

# CONTINGENCY RESERVE FUND STUDY/ DEPRECIATION REPORT:



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#### 1 INTRODUCTION:

# 1.1 Purpose of the Contingency Reserve Fund Study

In our opinion, prudent financial planning of a structure requires that contributions to the Reserve Fund be calculated on the basis of expected repair and/or replacement costs together with life expectancies of the common elements. The British Columbia Strata Property Act, Part 6 – Finances, Division 1 requires the following:

Operating fund and contingency reserve fund

- 92 To meet its expenses the strata corporation must establish, and the owners must contribute, by means of strata fees, to
  - b) a contingency reserve fund for common expenses that usually occur less often than once a year or that do not usually occur.

In addition, on December 14, 2011, new amendments to Section 94 were made with the new regulations requiring the strata corporations which comprise of five or more strata lots to comply with the legislation to obtain a Depreciation Report (Contingency Reserve Fund Study) by December 14, 2013 from a "qualified person" unless the strata corporation passes a resolution by ¾ vote at an annual or special general meeting within the described period to not conduct the study for the next 18 months. A further vote at the end of the 18 months would be necessary or the requirement would come into effect again.

The Consultant, Spratt Emanuel Engineering (SEE) was retained by Strata Plan BCS 2789 to carry out a Contingency Reserve Fund Study to assess the existing condition of the Strata Plan BCS 2789's common elements to estimate the scope and timing of repairs or replacement which are likely to be required in order to prepare a schedule of required annual contributions to the Reserve Fund.

A Contingency reserve fund study is not intended to accurately predict the failure of building systems; it is a planning tool intended to facilitate the provision of adequate funds as required to address predictable capital replacements. Regular updates of a Reserve Fund Study are required to enable current information relating to component condition and replacement costs to be made.

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Before any significant program of repair or replacement is implemented, SEE recommends that a suitably thorough engineering investigation or review be undertaken.

# 1.2 General Building Description

The following is a brief summary of general building description:

Owner	Strata Plan BCS 2789
Building Address	Keystone
Building Type	Low Rise Condominium
Principal Occupancy	Residential
Other Occupancy	Commercial - Retail
Date of Construction	2008
Applicable Building Code	Britlsh Columbia Building Code, 2006
Type of Construction	Combustible wood frame
Number of Storeys	4
Number of Suites	85 Residential 10 Commercial
Sprinklered	Yes
Parking	1-level at-grade and 1-level underground parkade
Adjoining Properties	North: Davidson Road East: 192a Street South: Pedestrian Path, Rail Line West: Harris Road

The building of interest, Keystone, contains 85 residential suites and 10 commercial/retail units in a 4-level low-rise condominium building. The building is constructed on an underground single-level concrete parkade. Parking is also provided at ground level behind the CRUs. The parkade entrance is on the north elevation off Davidson Rd.

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# 2 TERMS OF REFERENCE

# 2.1 Authorization to Proceed

Spratt Emanuel Engineering prepared this report at the request of Gateway Property Management Corp. on behalf of Strata Plan BCS 2789 – Keystône.

This study is to provide guidance to the Strata Council Members for considering reasonable contributions to the Contingency Reserve Fund commencing with the next Fiscal Year (June 1, 2014 to May 31, 2015).

## 2.2 Investigation Procedures

Spratt Emanuel Engineering completed the assessment of the building envelope, finishes and structural, mechanical and electrical aspects of the building. The following investigation procedures and analysis were carried out as part of this Study.

- Preparation of a questionnaire regarding the present financial situation of the Strata, known problems and repair histories or plans.
- Review of Declaration and Description, current By-Laws, and Schedules, of the Strata, where applicable, which outline the Unit Boundaries.
- Review of the financial situation, reported deficiencies and concerns, present maintenance philosophies and any other information considered pertinent by Management, including a review of the following (where available and/or applicable):
  - (a) most recent financial statement of the Strata;
  - (b) all reciprocal cost sharing agreements of the Strata; and
  - (c) most recent notice of future funding of the Reserve Fund sent to the Owners.
- 4. Inventory and quantification of the common element building components.
- 5. Visual inspection of representative areas of all accessible and exposed building components from ground and roof levels, corridors, stairwells and mechanical and electrical rooms, including:

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> (a) visual inspection of the property, including each common element component where practical;

(b) verification of records of the Strata; and

- (c) interviews with those of the Strata's Directors, Officers, Employees and Agents that the persons conducting the Study consider appropriate.
- 6. Review of the following (where available and/or applicable):
  - (a) all existing warranties, guarantees and service contracts for each common element component;
  - the as-built architectural, structural, engineering, mechanical, electrical and plumbing plans for the property;

(c) the as-built specifications for the building;

- the plans for underground site services, site grading, drainage and landscaping, and television, radio or other communications services for the property;
- (e) the repair and maintenance records and schedules; and
- 7. Preparation and submission of draft report with associated financial analysis for review.
- Preparation of 3 copies of final analysis and report, that takes into account discussions arising from the draft report.

## 2.3. Limitations

This Contingency Reserve Fund Study is designed to provide sufficient information to enable the selection of suitable repair and maintenance strategies, while trying to balance the cost of obtaining this information. Some of the findings detailed in this Study are based on random sampling, and some of the findings are based on a visual review of the surface conditions. Although every attempt is made to provide a full and accurate study, we are limited by available records and visual observations.

The review associated with this Study was limited to technical, construction and performance items. Spratt Emanuel Engineering has not conducted investigations into the nature and reasoning for the deficiencies found at the site and property whether visually inspected or of an inherent, hidden nature. As such, no legal survey, soil tests, assessment for environmental contaminants,

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engineering investigations, detailed quantity survey compilations, or exhaustive physical examinations have been made.

The recommendations detailed in this Study are based on our experience and on generally accepted practices. The long-term effectiveness of these recommendations cannot be assessed beyond present knowledge and experience.

The recommendations detailed in this Study are based primarily on technical considerations. A detailed assessment of previous financial records, studies and reports has not been made in order to substantiate the development's current financial position.

Cost estimates presented in this Study are based on estimated quantities and the Consultant's Judgement and experience with similar projects. The cost estimates are entirely preliminary and meant as order of magnitude budget estimates only, and are subject to confirmation by competitive tendering and when the repairs/replacement work is actually performed. The cost estimates are also subject to change and are dependent upon factors over which the Consultant has no control, including but not limited to: market conditions; contractor availability; methods and bidding practices; and the cost of labour, materials, and equipment.

The recommendations detailed in this Study are based on the information available at the time of carrying out the Study. Should associated repair/restoration/replacement work reveal additional information, the recommendations may have to be revisited.

The Client to whom this Study report is addressed may use it in deliberations affecting the subject property only, and in doing so, the report must not be extracted; it must be read and used in its entirety for this specific property.

Specifications should be prepared for any of the work recommended within this Study to facilitate proper workmanship and material use and to obtain competitive bids from suitably qualified contractors.

Competent site review should be carried out during the course of any remedial work to facilitate compliance with the specified requirements and as required to review previously unidentified conditions.

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SEE has not reviewed life-safety or environmental issues, as these areas are outside the scope of our work. We were not made aware of any environmental issues.

In issuing this Study, SEE does not assume any of the duties or liabilities of the designers, bullders or past or present owners of the subject property. Owners, prospective purchasers, tenants or others who use or rely on the contents of the report do so with the understanding as to the limitations of the documents reviewed, the general visual inspections undertaken and understand that the Consultant cannot be held liable for damages they may suffer in respect to the purchase, ownership, or use of the subject property.

# 3 CONTINGENCY RESERVE FUND STUDY

The subsequent sections of this Study provide a cataloguing of each of the capital common element components of this Development as well as related observations, discussions, and recommendations. Budget figures are provided for each item of work together with our estimate of the year or years in which the work is anticipated to be undertaken.

The actual year during which the various items of work are carried out will be dependent on a number of factors that may not exist or be apparent at the time this study was prepared given the level of study undertaken. In addition, issues of a non-technical nature will also often influence the timing of some capital repair and replacement work.

The anticipated schedule provided herewith for capital projects is based on a number of factors, both technical and non-technical in nature that may be interdependent with other repair and replacement work. For this reason we recommend a detailed list of capital projects carried out be kept for periodic comparison with this Study. We further recommend that such a comparison be made on a yearly basis for review as part of a regularly scheduled Strata Council meeting. This component of the meeting would ultimately serve to determine when a formal update of the Study is required. It is recommended that this meeting be attended by your current Reserve Fund Planner.

Yearly updates may prove to be excessive unless significant departures from the anticipated repair and replacement schedule are realized. However, a detailed technical review of the various building components should not necessarily wait for scheduled updates of the Study. A more appropriate procedure would be for the scheduling of updates to be based, at least in part, on the results of technical reviews. Yearly reviews will also serve to identify maintenance issues that may prolong the life of the affected components or may reduce the potential for progressive deterioration of a particular building component. The cost projections detailed in this study are based on timely repair schedules.

The following Glossary details a number of the terms used in the presentation of our findings and recommendations.

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# 3.1 Glossary of Terms

## 1. Building Component

This term refers to the various parts of the building and property under discussion and can be an item, such as a roof, or a system, such as the domestic hot water system.

# 2. Life Cycle

Life cycle is the anticipated life span of a component, starting from the date of original construction/installation or the date of repair or replacement of the component. Life cycle is usually discussed as a frequency. The life cycle is based on the assumption that regular service and maintenance is carried out to the particular building. Regular maintenance is very important to ensure anticipated life cycles are achieved. A cycle of 100 years indicates that the item will only be required once in the duration of the study or life of the building.

# 3. Life Remaining

This is our estimate of how long from the present the work will be required. This estimate is based on our assessment of apparent conditions and not simply the time remaining in the component's "standard" life. The actual life achieved or Service Life of a building component is dependent on a number of factors and assumes regular maintenance is completed.

# 4. Replacement/Repair Costs

The cost figures provided in this report are estimates of the cost of the related repair or replacement as described herewith. The estimates are based on our experience with work of a similar nature. In some cases specific costs are available, and have been included accordingly. All costs are in current dollars and include allowances for applicable tax, engineering, design, and inspection and testing. Engineering, design, and inspection or testing allowances range from 0 to 15% of the projected replacement/repair costs depending on the specific nature of the work. Costs are based on replacing or repairing the components to a similar quality to that as existing.

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Where expenditures are indicated in subsequent years the dollar figures provided represent current cost figures subjected to inflationary increases.

# 5. Operating Budget

Regular repair and maintenance costs are difficult to accurately predict on a cost-by-cost basis and are usually paid for from an Operating Budget. SEE has not included an allowance for any such item in the reserve fund contributions. SEE has also assumed that any item that cost less than \$500 to complete will be managed out of the Operating Budget, unless otherwise detailed within this Study.

Caution is required to ensure that expenditures assumed under the Operating Budget are not related to progressive problems that will require general replacements or increasing expenditures with time. Compilation of expenditure records by Management together with regular updates of the Study will assist in monitoring and correcting for such conditions should they exist or develop over time.

## 6. Opening Balance

Opening Balance refers to the balance in the Reserve Fund at the start of the current fiscal year.

# 7. Minimum Desired Balance

This is the present value of the minimum desired Reserve Fund balance on which SEE has based the analysis. In the event this is changed, our cost projections are subject to change as well. SEE assumes that no provision for a negative balance is in place.

The legal minimum value of the desired balance is 25% of the current Operating Budget. However, SEE recommends that this amount be increased and maintained for the next 30 years for unforeseen emergency work and budget overruns. SEE recognizes that arriving at a suitable minimum desired balance is subject to many considerations, some of which are subjective and are particular to management philosophy. In calculation of a minimum desired balance, SEE has utilized a mean value of the most and least expensive expenditures arising in the next 30 years.

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Reserve funds are needed to provide for capital expenditures in the future that are both scheduled and become necessary through unexpected equipment breakdown and unexpected budget overages.

SEE recommends sufficient funds be allotted for the unexpected breakdowns that would require immediate attention. Examples would be elevators, roofs, etc. It is difficult to determine a suitable amount for these items without an in depth evaluation and statistical analysis. Even with such, a review of this type may appear subjective, such that practical experience and intuition may be more suitable tools in arriving at a decision on a minimum balance.

Account should also be taken of the nature and extent of the major Items of work scheduled in the foreseeable future (say 10 years following) and the sensitivity of that work to changes due to progressive deterioration or overruns.

Another component should be considered for uncertainty relating to future market forces and technological and legislative changes. Recent examples include the fire retrofit legislation, roof safety anchor legislation, refrigerant changes, etc. These are not possible to predict.

#### 8. Reference Year

For the purpose of this study, all reference to life remaining in years are referenced to the current reference fiscal year 2013 running from June 1, 2013 to May 31, 2014.

#### 9. Critical Years

Critical Years occur, by definition, when the Reserve Fund balance in today's dollars approaches the Minimum Balance.

The First Critical Year generally governs the minimum level of contributions to the Reserve Fund required up to the first critical year. Subsequent Critical Years govern the contributions required beyond the First Critical Year.

#### 10. Interest Rate

The assumed annual interest earned on the Reserve Fund balance. Any interest gained must be added to the Reserve Fund. It is not possible to reflect future

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actual interest rate fluctuations in our Reserve Fund calculations. As a result SEE has used a figure representative of current rates.

Minor variations in the assumed rate of interest and actual interest rates will not, in our experience have a significant impact on the accuracy of this Study. A sensitivity analysis shows variations in the difference between the rate of inflation and interest rates to be more significant to the accuracy of this Study. Also experience has shown that this difference is not subject to frequent significant fluctuations.

#### 11. Inflation Rate

The annual inflation rate assumed to increase current cost estimates to arrive at future expenditure predictions. Interest earned on investments is generally greater than inflation due to a Time Value of Money component included in the interest rate.

#### 12. Initial Contribution Increment

This is the percentage rate at which the Reserve Fund contribution is increased each year prior to the First Critical Year. Ideally contributions should be increased to match inflationary increases, although this may not accommodate increases to address current or future shortfalls. It should be noted that this increase is only applicable to the contribution towards the Reserve Fund, which is a percentage of the monthly Strata Fees.

#### 13. Post-Critical Contribution Increment

This is the percentage at which contributions are increased after the First Critical Year. Contribution requirements often drop after the First Critical Year and therefore related increases need not generally exceed inflation.

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# 4 EXPECTED REPAIRS AND REPLACEMENTS

#### 1.0 STRUCTURE

#### 1.1 Building

The building structure is of wood frame construction build over a conventionally reinforced concrete first level and underground parkade. The parkade structure includes a parkade roof suspended slab, interior columns and exterior walls that are conventionally reinforced. The floor slab of the parking level is constructed on grade ("slab-on-grade"). Foundation walls are generally at the perimeter of the parkade and are also reinforced concrete.

SEE has assumed that the main elements of the structural framing of the building, consisting of interior columns, shear walls, slabs and walls will last the life of the structure. Significant repairs or expenditures of such components are unlikely within the service life of the building structure.

#### 1.2 Parkade

# 1.2.1 Parkade Suspended Roof Slab – Localized Repairs

# 1.2.2 Parkade Suspended Roof Slab – Waterproofing Membrane Replacement

The underground parkade roof slab buried under the soft and hard landscaping has a waterproofing membrane applied on the top surface. SEE has budgeted for future localized repairs to address water ingress as it develops and extend the life of the roof slab waterproofing membrane. Eventually, such localized repairs will not be feasible and full replacement of the waterproofing membrane will be required. SEE has also budgeted for full replacement of the underground parkade roof slab waterproofing membrane.

# 1.2.3 Parkade Walls - Periodic Repairs

SEE recommends budgeting for localized sealing of the exterior walls through injection on an as needed basis.

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- 1.2.4 Parkade Suspended Slabs Membrane Replacement (Strata Corp.)
- 1.2.5 Parkade Suspended Slabs Membrane Replacement (Commercial)
- 1.2.6 Parkade Suspended Slabs Localized Repairs

The P1 parking level is an intermediate suspended slab which has been reinforced with steel bars for flexural bending. In order to prevent premature deterioration of the steel bars, the concrete slab has been protected with a cold líquid-applied polyurethane traffic grade waterproofing membrane.

SEE has reviewed the strata plan, and apportioned costs to repair the membrane based on the allocations shown. SEE has budgeted for a complete replacement of the waterproofing membrane, as well as periodic localized repairs. It is assumed that while the replacement costs are shown separately, the work will be done as a single project.

# 1.2.7 Parkade Floor (P2) – Slab on Grade Localized Repairs

The slab is not structural and not subject to freeze/thaw, so therefore typically does not require major repairs or replacement for the life of the building.

SEE has allowed for periodic concrete repairs of the parkade floor on an as needed basis to address repairs due to scaling of concrete or slab settlement.

# 1.2.8 Parkade Periodic Inspections

SEE recommends budgeting for a periodic review of the parkade on a regular basis to monitor the existing condition and recommend local repairs if necessary.

# 1.2.9 Parkade Painting

The underground parkade has line and numbers painted for each parking stall, which appeared to be in good condition. SEE has allowed for painting of the parking stall lines and numbers in the future.

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#### 2.0 Roof

#### 2.1 Roof System

The building roof system consists of sloped roof protected by asphalt shingles and flat roof sections covered with a 2-ply SBS roofing membrane. On the east elevation there is a terraced deck which was not accessible at the time of review. It is assumed that it is protected with a similar 2-ply SBS system.

Metal cap flashings with standing seams have been installed throughout the perimeter of the flat roof parapets. Eaves troughs with rain water leaders are installed at the perimeter of the sloped roof.

- 2.1.1 Waterproofing Membrane Replacement Flat Roofs
- 2.1.2 Waterproofing Membrane Replacement Sloped Roof
- 2.1.3 Waterproofing Membrane Replacement Terrace Roof
- 2.1.4 Periodic Repairs

Local problems with leakage that may develop prior to the time of general reroofing are assumed to be managed out of the budget for roof maintenance. An
allowance for periodic roof repairs is provided. This is intended to prolong the life
of the roof by addressing rusted flashing, damaged shingles and other problems
prior to full replacement. SEE expects that a complete replacement of the roof
waterproofing systems will be required after roughly 30 years of life. The
protected terrace roofs are expected to last longer. The roof replacement
schedule is staggered to spread the financial burden over several years.

We recommend budgeting for the regular maintenance of the roofs to address localized leakage and defective sealants, etc. Periodic maintenance will help to extend the life of the roofs.

# 2.2 Concrete Eyebrow Overhang – Waterproofing Membrane Replacement

The 2<sup>nd</sup> level floor slab edge extends past the siding and is protected with a cold liquid-applied waterproofing membrane at the top horizontal surfaces. It is recommended that this work be carried out at the time of the balcony slab waterproofing membrane replacement.

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# 2.3 Ground Level Canopy

There is a glass and metal canopy installed at the ground level over the sidewalk and retail entrances on the west elevation. SEE has budgeted for periodic repairs of this building component.

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# 3.0 EXTERIOR WALLS

#### 3.1 Siding System

The majority of the building walls are clad with ship-lapped fibre cement boards and cedar shakes. Limited areas are clad with vinyl siding. Where viewed from the ground and roof level, the siding systems appear to be in good visual condition.

- 3.1.1 Siding Maintenance
- 3.1.2 Siding Trim Painting & Localized Repairs
- 3.1.3 Siding Painting & Sealant Renewal

SEE has provided an allowance for painting of the wood trim and fascia boards and localized repairs of the siding in the future. Periodic inspections and maintenance work such as power-washing is assumed to be funded out of the operating budget. SEE has also budgeted for painting of the walls and sealant replacement at window perimeters and between dissimilar materials in the future.

# 3.2 Brick Masonry Unit (BMU) Wall System

The building column details are clad with brick masonry units (BMU) in a rain-screened assembly. Where observed the BMU columns are in good visual condition.

- 3.2.1 BMU Maintenance
- 3.2.2 BMU Localized Repairs
- 3.2.3 BMU Sealer Application

SEE has provided an allowance for localized repairs of the BMU walls in the future. Periodic inspections and maintenance work such as power-washing is assumed to be funded out of the operating budget. SEE has allowed for periodic application of a weather-resistant brick sealer in the future, which will extend the overall service life of the BMU walls.

#### 3.3 Balconies

The concrete slab of the 2<sup>nd</sup> level floor is extended beyond the building footprint to form the balconies. It is protected with what appears to be liquid applied polyurethane waterproofing traffic coat. The balconies at levels 3 and 4 are wood framed construction and are also protected with liquid applied membrane.

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# 3.3.1 Waterproofing Membrane Replacement

## 3.3.2 Localized Repairs

The concrete and wood framed balcony slabs throughout the building have been protected with what appears to be a cold liquid-applied polyurethane waterproofing membrane on the top horizontal surfaces. SEE has budgeted for complete replacement of the waterproofing membranes in the future. SEE has also allowed for repairing the balconles and the membranes on an as needed basis, which includes minor repairs to the balcony guardrails.

## 3.3.3 Guardrail Replacement

The balconies have top and side-mounted aluminium guardralls with glass panels or aluminium bars installed. SEE has budgeted for complete replacement of the aluminium guardrails in the future.

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#### 4.0 EXTERIOR WINDOWS AND DOORS

#### 4.1 Windows

The window systems of the building consist of insulated glazing units set in white vinyl frames in punched openings. The retail units have strorefront frames with insulated glazing units.

# 4.1.1 Insulated Glazing Units – Localized replacement

Insulating glazing units (IGUs) are considered to fail when the perimeter seal fails and allows moisture into the cavity to the extent that condensation or scumming occurs on the inside surfaces of the glass. Replacement is usually required for aesthetic reasons. Typically, IGUs are expected to last at least 15 years.

SEE has provided an allowance to replace failed IGUs on an annual basis as they fail until 3 years prior to the complete replacement of windows. We recommend that Management keep accurate records of these replacements to facilitate future budgeting.

#### 4.1.2 Sealants

Sealants become rigid as they weather. Local re-caulking of defects on an asneeded basis is assumed to be covered by the Operating Budget. However, before deterioration becomes a general problem resulting in more frequent leakage, a general program of removing and replacing sealants is recommended.

Caulking over existing defective materials is not recommended since the defects in the underlying caulking tend to reflect through to the surface of the new material in a relatively short period of time. Any caulking repairs should include for the complete removal of the existing materials and replacement with a good quality sealant material.

SEE has budgeted for replacement of polyurethane joint sealants. This will include removing and replacing all existing sealant joints and at window perimeters joints.

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# 4.1.3 Window Replacement - Phase I

#### 4.1.4 Window Replacement - Phase II

SEE has also budgeted for complete replacement of the exterior window and door systems in the building. The project has been divided into two phases to spread the financial burden across multiple years. East and south elevation widows are assigned to be replaced in Phase I, west and north elevations are assigned to Phase II.

#### 4.2 Balcony/Patio Doors

Budget for replacement of this item is included in the window replacement lines above.

#### 4.3 Storefront Windows - Refurbishment

SEE has provided a budget to refurblsh the retail storefront windows. Work may include new glazing, replacing glazing tape or recoating.

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#### 5.0 INTERIOR FINISHES

Replacement timing and costs of common element finishes are either required by loss of serviceability or as considered aesthetically necessary by the residents. We recommend the allowances in this section be reviewed carefully to ensure they align with the present goals and standards.

#### 5.1 Suite Entrance Doors

SEE has assumed that if replacement of a suite entrance door is required, it will be funded out of the operating budget. Based on the site review, the doors are in good condition. The doors are expected to last the life of the building.

#### 5.2 Service Room Doors

SEE has budgeted for the periodic replacement of service room doors in the building.

#### 5.3 Residential Hallways

- 5.3.1 Interior Finishes Paint & Wallpaper
- 5.3.2 Baseboards & Wood Trim
- 5.3.3 Light Fixtures
- 5.3.4 Carpeting Replacement

Interior finishes in the residential hallways such as paint, textured ceilings and wallpaper, along with baseboards, door casements light fixtures and carpeting in common rooms and hallways are replaced after 10 to 15 years, or more, as a result of wear, fading, new trends, or Owner's desire for a change of appearance. The above items are budgeted for separately.

These are discretionary items which should be considered carefully.

# 5.4 Commercial Corridors - Paint & Repairs

SEE has budgeted for painting and repairs to the corridor which services the back entrances of the ground level retail units.

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## 5.5 Entrance Lobbies - Major Refurbishment

Refurbishing the entrance lobby is usually required to update finishes to modern standards in order to maintain the value of the building. We recommend budgeting more than bare minimum allowances to accommodate this work.

An allowance for replacement of tile floor, wall coverings, lighting, furniture and refinishing of tiles in the lobby is budgeted for under the refurbishment item.

#### 5.6 Stairwells - Maintenance

SEE assumes maintenance work and handrails, on an as needed basis, will be funded out of operating budget. Budget for replacement of carpet is included above.

# 5.7 Amenity Room & Council Chambers

SEE has budgeted for replacement of the interior finishes and furniture in the amenity room and council chamber on an as needed basis.

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#### 6.0 SITE

#### 6.1 Hard Landscaping

SEE has budgeted for general maintenance work of the hard landscaping items, including the brick paver sidewalk, walkways, planters, and concrete curbs.

SEE assumes that an allowance for periodic repairs to such hard landscaping features will be funded out of operating budget. Complete replacement of the hard landscaping materials will take place during the parkade slab at grade membrane replacement, item 1.2.2.

# 6.2 Soft Landscaping

SEE has provided an allowance for periodic repairs or replacement to the landscaping finishes, including replacement of plants at the main entrance planter.

# 6.3 Sidewalk Repairs

It was noted by council that the unit pavers along the building and retail entrances on Harris Road are not performing to expectations. SEE has budgeted for replacement of the pavers with a poured concrete sidewalk. Removing and reinstating the existing pavers over a newly compacted sand base would be approximately half the quoted cost of this project.

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#### 7.0 MECHANICAL SYSTEMS

The life expectancies are based on manufacturer's recommendations and on the performance of similar types of equipment in the past. Life expectancies may be slightly increased in some cases if the building systems are well maintained. Actual service lives may be found to be longer than estimates, but it is recommended that funds be available for repair or replacement at the earliest time that failures are likely to occur.

The preventive maintenance program will ensure that equipment will reach or surpass its normal design life. If maintenance is continued through the life of the building, system life spans may be extended further in future reserve fund updates.

## 7.1 Heating and Cooling

# 7.1.1 Make-up Air #1 - EngA

## 7.1.2 Make-up Air #2 - EngA

The residential hallways and common areas are heated by Engineered Air (EngA) make-up air units located on the roof. The MUA utilizes natural gas as its heat source. Both units are model S175/0, capable of supplying 126,000BTU/h of heat. The units are located on the flat roof areas at the north and south ends of the building above the fire escape stairwells.

Most of the replacement cost will be associated with the make-up air unit. If ducts are kept clean and not physically damaged they could last the life of the building. SEE has assumed that ducts will be repaired or replaced on an asneeded basis out of the Operating Budget.

The make-up air unit is original and appears to remain in good condition for its age. Service records indicate no recent major faults.

# 7.1.3 Commercial Heating/Air Conditioning

Ten compressor/condenser heat pump units of various make and model were observed mounted to the P1 parkade ceiling and P2 ramp. These appear to serve the heating and cooling needs of the commercial units. The evaporator units would be installed inside the commercial units, and were not observed.

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It is assumed that these units are privately owned, and not the responsibility of the strata. As such, a budget for their replacement is not included in this study.

#### 7.1.4 Electric Baseboard Heaters

Basement and service rooms are heated with individual wall mounted electric heaters with thermostats in each room. The electrical heaters appear to be in good condition and would be repaired or replaced out of the operating budget.

## 7.2 Plumbing Systems

Domestic water supply use is measured by a Neptune water meter. Water pressure does not require boosting, city pressure is sufficient for circulation to all floors. There are a number of gate, pressure reducing and check valves in the intake system to provide isolation of the water meter while providing continuous water supply. Pressure reduction valves (PRV) are included to regulate water pressure to a usable pressure. Water is supplied through copper pipling to suites.

Each unit includes an individual water heater. There is no central hot water distribution system. It is assumed that owners will be responsible for maintaining and replacing the water heaters and piping within their units.

# 7.2.1 Distribution System – Piping Replacement

As the system ages, various sections of piping will likely have to be replaced resulting from such problems as seizing or leakage of valves, piping specific problems such as corrosion, pitting, or erosion (which can typically be affected by pipe material as well as the condition of water). Additionally, fatigue and failures related to thermal movements of the piping may lead to replacement.

SEE has made for an allowance for localized valve replacement and leak repairs every 3 years. Full-scale replacement or sectional replacement is a choice of the Strata. As there is no hot water recirculation system, it is believed the distribution system will last longer than average and that the commercial and residential piping will require replacement at a similar time.

Replacement or repair of backflow preventers, pressure reducing stations, gauges and controllers, and failed valves should be funded on an as-needed basis out of the Operating Budget.

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## 7.2.2 Sump Pumps

We assume the pumps are maintained under a maintenance contract. These types of pumps have a typical life span of 10 to 12 years depending on the degree of maintenance received. SEE has budgeted for partial replacement of sump pumps and controls every 10 years.

#### 7.2.2.1 2x 0.4hp Sump Pumps

# 7.2.2.2 Duplex Controller - NWTC

There are two submersible sump pumps connected in duplex and controlled by a Northwest Tech-Con duplex pump control system. The pumps serve the storm or sanitary sump.

# 7.2.2.3 2x 0.75hp Sump Pumps

# 7.2.2.4 Duplex Controller - NWTC

There are two submersible sump pumps connected in duplex and controlled by a Northwest Tech-Con duplex pump control system. The pumps serve the storm or sanitary sump.

#### 7.2.3 Irrigation System

# 7.2.3.1 Irrigation System Controller – Rain Bird ESP

# 7.2.3.2 Irrigation System Piping

The landscaped area is provided with an irrigation system. The system was not active during our site inspection. The system uses city water distributed from the P1 water entry room. A controller works in combination with a rain sensor to control irrigation frequency.

Conditions and life expectancies of individual components are difficult to establish. The system piping is direct buried PVC and will not corrode. Pipe leaks, control problems and head failures are the usual repair items. SEE has budgeted for an allowance in the reserve fund to cover irrigation system repairs however it is assumed that this system is regularly maintained out of the operating budget.

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#### 7.3 Service Area Fans

Various areas of the building are provided with exhaust fans including areas such as the parkade, elevator, garbage room, and storage rooms. Larger fans supply fresh air to the building core and fire escape staircases to prevent smoke ingress to those areas during an emergency.

# 7.3.1 Parkade Exhaust – 2HP Axial Fan

# 7.3.2 Fan Controller - Critical Environment Technologies

The 2hp Reversomatic Heating and Manufacturing, model RDD-21, parkade exhaust fan is cycled by a Critical Environment Technologies gas detector system. When vehicle exhaust fumes exceed a pre-set limit, the fan will be activated.

The fan was observed to be in visually good condition, with no reports of recent failures or faults. The gas detection system requires regular calibration, and this is assumed to be maintained out of the operating budget.

#### 7.3.3 Service Room Exhaust Fans

There are exhaust fans located in many of the service rooms, including water entry, cable/tv, storage lockers, garbage room, etc. These fans were observed to have either manual switches or timer controllers. SEE has provided a contingency for replacement of these fans and controllers on an as needed basis. It is assumed that the distribution ducts will last the life of the building.

# 7.4 Fire Suppression System

The fire suppression system consists of a dry sprinkler system in the parkade and a wet sprinkler system in heated areas such as the lobby and residential units. A standpipe system is provided to the building and parkade.

Elements of the fire protection system which we assume will be addressed out of the Operating Budget as part of annual inspection and repairs include:

- Replacement of sprinkler heads and fire extinguishers
- Replacement of sprinkler header trim

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#### 7.4.1 Fire Pump

This building is not equipped with a fire pump, city pressure is sufficient to serve all levels of the building.

- 7.4.2 Fire Protection Allowance
- 7.4.3 Dry Valves Tyco
- 7.4.4 Dry System Compressor Swan

Supply to both the dry and wet fire protection standplpes is provided by city water supply from a branch in the combined domestic and fire protection line. The fire protection branch passes through a double check valve prior to supplying dry and wet fire protection standplpes.

Two Tyco Fire Products fire protection system dry valves are located in the sprinkler room at level P1. Dry valve activation air pressure is provided by a Swan, SP-114 air compressor. Additional dry valves and compressor are located on the 4<sup>th</sup> floor, and serve the unheated attic zones (not observed during review). The valves activate to provide water to dry sprinkler heads in unheated parkade and attic areas in the event of a fire.

Fire protection wet sprinkler valves and fire hose standpipes on each floor are pressurized by city water pressure. The standpipe zones are complete with supervised isolation valves and flow switches. The valves should last the life of the building if maintained. Rebuild is usually not required if maintenance continues. SEE has assumed that the pipe systems will last the life of the building

We recommend budgeting for future repairs or partial replacement of the sprinkler and standpipe system piping and valves every 15 years.

# 7.5 Garbage Disposal Systems

The building is served by a metal garbage dumpster and wheeled recycling bins. The bottom of metal bin will start to rust out over a life of about 15 years. We have been advised that the garbage and recycling bins are provided by the garbage disposal contractor, consequently, this item has been removed from the budget. In the event bins are owned by the strata, this item should be revisited.

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# 7.6 Building Services Allowance

Problems affecting underground services are a possibility in the future and may require various repairs or sectional replacement. Such problems usual result from such things as local collapse of piping or duct banks, failed joints, blockages of storm or sanitary sewers, restriction of water services as a result of deposits and deterioration of buried metal piping.

Because the actual life expectancy of the associated components is not known SEE has budgeted an allowance for the problems.

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#### 8.0 ELECTRICAL SYSTEMS

The life expectancies are based on manufacturer's recommendations and on the performance of similar type of equipment in the past. Life expectancies may be slightly increased in some cases as the building systems are well maintained. Actual service lives may be found to be longer than estimates, but it is recommended that funds be available for repair or replacement at the earliest time that failures are likely to occur.

A preventive maintenance program will ensure that equipment will reach or surpass its normal design life. If maintenance is continued through the life of the building, system life spans may be extended further in future reserve fund updates.

#### 8.1 Electrical Distribution

The electrical distribution system includes all panels, switchboards and wiring required to feed electricity from the bulk meter to the suites and house distribution systems.

SEE has assumed that maintenance of these systems which is managed as part of the operating budget will include:

- Replacement of fuses, defective switches, receptacles, etc.
- Thermal scans with associated repairs.
- Mechanical switchgear for the major mechanical components are expected to be replaced in conjunction with equipment repairs and replacements or as needed as part of maintenance.

#### 8.1.1 Electrical Allowance

The electrical distribution system consists of two Rex Power Magnetics transformers located in the electrical room, Models BA300JM/Z and BA112JM/Z, transformer which reduces the line voltage from 600V to 120/208V. The output of the transformer is routed through a Square-D, 1000 amp circuit breaker which then feeds a series of smaller switches, distributing power to the various loads within the building. Metered panel boards located in the residential hallways and mechanical rooms divide the power to individual customer circuits for distribution.

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Two additional Rex transformers are located within the telephone/cable repeater room, models BA75JM/Z and BA300JM/Z. It's not clear how these are integrated into the building power system.

Distribution panels should be inspected and connections re-torqued regularly as part of a maintenance plan. Thermographic scanning should be performed every 5 years.

The actual service life of modern electrical equipment is not known. We estimate that general replacement will not be required within the foreseeable future. Larger conductors are assumed to last the life of the building. However, we recommend maintaining an allowance of about 10% of the value of this system after 40 years of service towards repairs or replacements that may be required as a result of local or specific problems that develop.

## 8.1.2 Emergency Generator

A backup power system was not observed on site.

# 8.2 Fire Alarm System

The Mircom fire alarm annunciator panel is located in the entrance lobby. It allows monitoring and control of the building's emergency systems by first responders.

# 8.2.1 Fire Alarm System - Repairs

# 8.2.2 Fire Alarm System - Replacement

SEE has provided and allowance for localized repairs, such as smoke detectors and component replacement on as needed basis.

The main fire alarm panel is original to the building. Maintenance and testing of the system will be completed as part of the operation budget. SEE has provided a budget to upgrade the fire panel in the future.

# 8.3 Lighting

The hallway and service room lighting systems are in good condition and light levels visually appeared adequate where observed.

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SEE has assumed that exit lights, ballasts for fluorescent fixtures, light bulbs and timing switches will be replaced out of the operating budget as required. A budget for replacement of hallway light fixtures is included in section 5.0.

#### 8.3.1 Parkade Light Fixtures

Parkade lighting is facilitated by a series of surface mounted fluorescent fixtures fitted to the parkade ceiling. Parkade lighting fixtures are mainly fed by conduit buried in the slab. These flxtures would be replaced out of the operating budget.

#### 8.3.2 Exterior Light Fixtures

The exterior light fixtures are in fair to good condition where observed. Wall mounted fixtures are installed over the entrances to the building. The nuts and bolts securing the light posts base plates should be checked regularly to ensure that the structural integrity of the anchorages has not been jeopardized.

SEE has allowed a contingency for partial replacement on an as needed basis.

# 8.3.3 Interior Light Fixtures

The budget for replacement of interior light fixtures is included with the refurbishment of interior finishes, Item 5.3.3 above.

#### 8.4 Elevator

Two Richmond Elevator hydraulic elevators rated at 2500lbs each serve the building. The elevator is reported to be very reliable and review of the maintenance log indicates the only recent service calls have been for scheduled preventative maintenance.

#### 8.4.1 Elevator Refurbishment

SEE has provided a budget for elevator refurbishment, which includes replacement of the elevator cab interior finishes.

#### 8.4.2 Elevator Modernization

Modernization is an upgrade/overhaul of the mechanical components of the elevator system. This would typically include replacement of the hydraulic pump

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and motor; replacement of the control and levelling system, buttons, and indicators; and overhaul of the door operators.

It is typical that refurbishment and modernization happen at the same time to save cost and reduce the inconvenience to tenants, however an assessment of the elevator's operation and condition will be necessary closer to the time of replacement to determine the complete scope of work.

## 8.5 Auxiliary Systems

Auxiliary systems in the building include the door and parkade entry phone system, and parkade overhead gate. No problems with the operation of the systems were reported or observed during our site inspection.

## 8.5.1 Enterphone/Entry System

A Select Engineered Systems enterphone system operates between the entrance locations and the suites. The suite number is dialed and access is permitted by the door release mechanism. The system is reported to operate properly. Honeywell key fob access readers permit access to the building for residents. The entry system should be repaired on an as-needed basis from the operating budget. SEE has budgeted for the eventual replacement of the enterphone and key fob system.

#### 8.5.2 Security System

CCTV security cameras were observed in various areas of the building. Closed circuit camera systems require constant upgrades, such as to the camera and recording devices. We have budgeted for the replacement of the CCTV system, assuming the wiring can be re-used.

#### 8.5.3 Parkade Overhead Gate

There are two Lift Master, Elite Series BT5011L3, 1/2Hp, overhead doors which allow access to the parkade. These types of gates typically last for 20 years. SEE has allowed a contingency for replacement.

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# 9.0 CONTINGENCY RESERVE FUND STUDY

# 9.1 Future Contingency Reserve Fund Studies

Regular updates to this study are recommended. SEE has budgeted for a regular update to the CRFS in the future.

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# 5 FINANCIAL ANALYSIS

The financial analysis detailed in the following tables is based on the information collected and detailed in section 4 of this Study. A brief explanation of the tables is included below.

# 5.1 Repair/Replacement Information Summary

The information summary lists all reserve fund expenditures detailed in the report above.

#### 1. Item Number

Use this number to cross-reference an expense on the information summary to the entry in the report body in section 4 above.

## 2. Building Component

A description of the work item or building component being repaired or replaced.

# 3. Item Description

Details the building component above, and any assumptions relating to the budgeting, if required.

## 4. Life Cycle

This is the average anticipated span in years between repairs or replacements of the building component.

# 5. Estimated Age

The estimated age of the building component in years.

#### 6. Life Remaining

The life remaining value sets the year for the first occurrence of an expense, and is an estimate based on the visual survey of the building components completed by SEE. As the depreciation report is a long-term financial planning tool with a much wider scope than specific reviews, it is not intended to identify specific issues with any one component. When preparing the report, the entire building is

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observed, including the building envelope, mechanical and electrical systems, etc. We note the average condition of components based on this visual review. The depreciation report isn't intended to replace more detailed reviews, as the goals of each are different.

The value for life remaining will not always be the arithmetic difference between the lifecycle and estimated age. The life remaining will be extended or shortened based on our assessment of the building component.

Additionally, since the depreciation report looks at average lifespans, there tend to be very high expenditures on 5, 10 and 15 year intervals. This leads to an unrealistic cash flow, with massive expenditures one year, and none the next. Before issuing the report, the timing of expenditures is intentionally offset by adjusting the life remaining of the building component. This is a deliberate action to produce a realistic and more manageable cash flow.

## 7. Budget for Repair/Replacement

This is the estimated cost to repair or replace a building component at today's cost. Its future value is calculated based on the assumed inflation rate when calculating the annual cash flows over the term of this study.

## 5.2 Expenditures Table

The expenditures table shows all expenditures listed on the information table, in future-value, over the next 30 years. The total anticipated expense for each fiscal year is summarized at the top of each column.

#### 5.3 Cash Flow Table

There are five funding scenarios provided with each depreciation report. They are detailed within the individual cash flow tables created for each scenario. The tables provide details on each year's expenses, contributions and reserve fund balance.

#### 1. Recommended Annual Contribution

The recommended total contribution to the reserve fund for the fiscal year.

#### 2. Estimated Expenditures

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The total anticipated expenditures for the fiscal year, adjusted to future value.

#### 3. Estimated Interest Earned

An estimate of the interest earned over the fiscal year on the balance in the reserve fund, calculated using the previous year's closing balance. A static interest rate is used for the duration of the study. Earned interest may be over-or under-estimated in a particular year based on the interest environment. The rate used is a conservative average rate for the 30-year term this study covers.

### 4. Percentage Increase Recommended

This is the recommended percentage increase (or decrease) to the annual reserve fund contributions. The year and amount of increase or decrease is dependent upon the specific funding scenario.

#### 5. Fully Funded Scenario

The fully funded scenarios are those in which the annual contribution to the reserve fund has been calculated to meet the anticipated costs and maintain the balance in the reserve fund above the minimum balance. These scenarios do not rely on special assessments or loans to fund the anticipated repairs and replacements. Unanticipated costs or early failure of components could still result in the need to find additional funds via a loan or special assessment.

#### 6. Minimum Contributions Scenario

The Minimum Contributions Scenario assumes that reserve fund contributions are set at the minimum legislated amount of 10% of the operating budget. This scenario relies heavily on special assessments to fund the anticipated repairs and replacements outlined in the report.

## 7. 50% of Fully Funded Scenario

The 50% of Fully Funded Scenario sets the reserve fund annual contribution half way between the 'Fully Funded' and 'Minimum Contributions' Scenarios. It also reduces the minimum balance to half that of the 'Fully Funded' scenarios. This scenario provides sufficient annual funding to cover most repairs and replacements, but makes use of special assessments to fund major replacements (such as reroofing).

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### 5.4 Reserve Fund Balance Graph

The graph summarizes the closing balance of the reserve fund for each fiscal year in blue. There is a graph corresponding to each cash flow funding scenario. The minimum desired balance is indexed to inflation, and displayed in red.

## 5.5 Comparison of Monthly Contributions to CRF

This graph compares the monthly contribution amounts required for each of the five funding scenarios. The purpose is to graphically show the long- and short-term impacts each funding scenario will have on monthly strata fees. The graph displays ONLY the contributions made to the reserve fund; these amounts must be added to the operating costs to determine the total strata fee. It is important to note that the calculation is based on average unit entitlement as noted on the graph — actual fees for each unit will be determined based on unit entitlements when the budget is prepared by council and management.

Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,
Spratt Emanuel Engineering Ltd.
Per:

John Drinkwater, B.A.Sc., EIT Manager, Depreciation Studies Mark W. Emanuel, P.Eng.

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Reviewed By

**Principle** 

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# APPENDIX A:

Repair & Replacement Information Summary
30-Year Maintenance Schedule



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Depreciation Report Repair/Replacement Information Summary

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		%0	%0	%0	%0	%0	%	%0	%0	%0	%0	%0	%0	%
	Cost Assignments: trata Res. Com. orp. Sect. Sect.						ę					%0		%0
	Assigni Res. Sect	%0	%0			%0	%	%0	10	1	100%			
	Cost Strata Corp.	100%	100%	100%	100%	100%	%0	100%	%0	100%	%0	100%	100%	100%
	2013 Budget for Replacement Repair	\$0	\$10,000	\$290,000	\$15,000	\$65,000	\$30,000	\$8,000	\$12,000	\$3,000	\$2,000	\$206,000	\$280,000	\$130,000
_	Life Remaining (years)	35	10	45	Ð.	50	20	25	15	ಬ	20	26	20	30
Curent Fiscal Year: April 1, 2013 to May 31, 2014	Estimated Age (years)	5	rv.	S	ιΩ	ıo	2	ເດ	ın	ις	ın .	ιΩ	ß	2
Curent Fiscal Year: April 1, 2013 to May	Life Cycle (years)	100	15	50	10	25	25	30	50	10	25	30	25	35
Repair/Replacement Information Summary C November 30, 2013 A	ltem Description	Repairs and expenditures unlikely for the life of the building	Budget for localized repairs of the parkade roof stab on as needed basis	Budget for replacement of the roof slab waterproofing membrane. Overburden material such as soft and hard landscaped areas will need to be excavated and removed	Budget for localized repairs to the parkade suspended slab waterproofing membranes at P1.	Budget for replacement of the parkade suspended slab waterproofing membranes at P1.	Budget for replacement of the parkade suspended slab waterproofing membranes at P1,	Budget for periodic repairs of the concrete parkade walls, on an as needed basis	Budget for localized repairs of the parkade slab on grade on an as needed basis	Budget to carry out periodic condition assessments of the parkade	Allowance for painting the parking stall lines and numbers	Budget to replace the main roof waterproofing membrane. Includes the mechanical doghouse roof and the terrace decks of various levels including the 4th level	Budget to replace the Townhouse roof waterproofing membrane replacement	Budget to replace the main roof waterproofing membrane. Includes the mechanical doghouse roof and the terrace decks of various levels including the 4th level
	Building Component	Building	Parkade Roof Slab - Localized Repairs	Parkade Roof Slab - Waterproofing Membrane Replacement: 8300 sq.ft.	Parkade Walls - Periodic Repairs	Parkade Suspended Slabs- Membrane Replacement (Strata): 10.750 so.ft.	Parkade Suspended Slabs- Membrane Replacement (Commercial); 5000 sq.ft.	Parkade Suspended Slab - Waterproofing Membrane Localized Repairs	Parkade Floor - P2 Slab On Grade Localized Repair: 42,100 sq.ft.	Parkade Periodic Condition Assessment	Parkade Painting	Roof System - Flat Roof SBS Waterproofing Membrane Replacement: 13.700 sq.ft	Roof System - Stoped Roof Asphalt Shingle Replacement: 28,000 sq.ft	Roof System - Terrace Roof SBS Waterproofing Membrane Replacement 6500 sq.ft
	kea #	<u></u>	1.2.1	1.2.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	2.1.1	2.12	2.1.3

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G13-202 Final Curent Fiscal Year: April 1, 2013 to May 31, 2014	Life Cycle Age Remaining Replacement Strata Res. Com. (years) (years) (years) (years) Age Strata Res. Com.	3 5 \$10,000 100% 0% 0%	25 5 20 \$8,000 100% 0% 0%	10 5 5 \$5,000 100% 0% 0%	100% 0%	8 5 3 \$15,000 100% 0% 0%	15 5 11 \$105,000 100% 0% 0%	%0	15 5 10 \$8,000 100% 0% 0%	25 5 20 \$15,000 100% 0% 0%	25 \$ 20 \$36,000 0% 100% 0%		100%	5 7 5 000 160% 0% 0%
12350 Harris Road, Pitt Meadows, B.C. Depreciation Report Repair/Replacement Information Summary Cure	Life Life Description (5)	Budget to carry out periodic repairs to the roofing	Budget to replace the waterproofing membrane at the concrete eyebrows throughout the building.	Budget for localized repairs of the metal canopy feature with glazing units located at the ground level at the west elevation	Allowance for periodic inspection and maintenance (powerwashing etc) for the exterior walls is assumed to be funded from the operating budget	Allowance for painting trim and making minor repairs.	Budget for repainting the walls and replacing failed sealant	Allowance for periodic inspection and maintenance (powerwashing etc) for the exterior walls is assumed to be funded from the operating budget	Allowance for making minor repairs.	Budget to apply a sealer to the brick walls	Budget to replace the cold liquid-applied polyurethane traffic coat waterproofing membranes on balcony slabs	Budget for repair of the balconies and terraces on an as needed basis	Budget for replacement of the aluminium balcony guardrails	Allowance for replacement of the Insulated Glazing Units
ENGINEERING LTD.	ttem # Building Component	2.1.4 Roof System - Periodic Repairs	2.2 Concrete Eyebrows - Waterproofing Membrane Replacement: 1000 sq.ft.	2.3 Ground Level Canopy	3.1.1 Siding - Maintenance	3.1.2 Sioing – Trim Painting & Localized Repairs	3.1.3 Siding – Painting & Sealant Renewal	3.2.1 BMU - Maintenance	3.2.2 BMU – Localized Repairs	3.2.3 BMU - Sealer Application	3.3.1 Balcony - Waterproofing Membrane Replacement 6000 sq.ft	3.3.2 Balcony Slabs - Localized Repairs :	3.3.3 Balcony Guardrails - Replacement ; 1800 ft	A 4 4 Instituted Clasica Hoite



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Depreciation Report Repair/Replacement Information Summary

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12 E t	%0	%0	%0	%0	100%	%0	%0	%0	%0	%0	%0	100%	%0
Cost Assignments: trata Res. Com. torp. Sect. Sect.				8			%0	100%	100%	100%	106%		100%
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Cost Strafa Corp.	100%	100%	100%	100%	%0	%0	100%	%0	%0	%0	%0	%0	%0
2013 Budget for Replacement/ Repair	<b>₽</b>	\$350,000	\$350,000	069	\$150,000	0\$	\$15,000	\$25,000	\$15,000	\$40,000	\$28,000	\$7,000	\$5,000
Life Remaining (years)	0	45	45	45	45	75	75	9	35	20	7	S	25
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Life Cycle (years)	0	50	50	50	20	08	Ce Ce	O	40	25	20	10	30
Item Description	Allowance for replacement of the exterior sealants applied at window perimeters, ciadding joints between dissimilar materials etc. Included in work item #3.1.3	Allowance for replacement of the window systems : Phase I : Punched Windows Only	Allowance for replacement of the window systems: Phase II: Punched Windows Only	Allowance for minor repair work of the sliding doors assumed to be funded out of the operating fund, on an as needed basis only.	Allowance for refurbishment on an as needed basis, of the window wall system. Includes re-coating and perimeter taping and repairs	Budget for partial replacement of suite entrance doors, on an as needed basis, out of operating budget.	Alfowance for replacing all service room doors	Allowance for repainting common areas	Allowence for replacement of all baseboards and wood trim in the corridors and around elevators	Allowance for replacement of the confidor and common area light fixtures	Carpeting - Replacement: 7000 sq.ft. Allowance for replacing the common area carpet	rs Budget for painting and repairs to the commercial access comicons	Allowance for refinishing the entrance lotby
Building Component	Sealants :	Window Systems - Replacement Phase I: East Elevation 8700 sq.ft.	Window Systems - Replacement Phase II : South Elevation 8700 sq.ft.	Balcony Sliding Doors	Window Refurbishment - Storefront Windows: 6200 sq.ft.	Suite Entrance Doors	Service Doors	Interior Painting: 35,000 sq.ft.	Baseboards and Wood Trim: 3500 ft	Light fixtures - Common Area	Carpeting - Replacement: 7000 sq.1	Commercial Comdor - Paint & Repairs Budget for painting comfors	Cotronos Lobbies - Defurbishment
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Building Component	ltem Description	Life Cycle (years)	Estimated Age (years)	Life Remaining (years)	2013 Budget for Replacement/ Repair	Strata Corp.	Res. Sect.	Com.
8.1.2 Emergency Generator	This building is not equipped with backup power	0	i.c	0	0\$	100%	ii .	%0
8.2.1 Fire Alarm System – Local Repairs	Allowance for repair of the Fire Alarm System	ഹ	5	S.	\$5,000	100%	%0	%0
8.2.2 Fire Alarm System Replacement	Allowance for replacement of the Fire Alarm System	30	ro	25	\$65,000	100%	%0	%0
8.3.1 Parkade Light Fixtures	To be maintained out of the operating budget	50	32	45	\$0	100%	%0	%0
8.3.2 Exterior Light Fixtures	Budget for partial replacement	5	w	0	\$2,000	100%	%0	%0
8.3.3 Interior Light Fixtures	Included in section 5.0 above	0	ν	0	Ç\$	100%	%0	%0
8.4.1 Elevator Refurbishment	Allowance to refurbish the elevator	20	ທ	15	\$25,000	%0	100%	<b>%</b> 0
8.4.2 Elevator Modernization	Allowance for replacement of the Elevator Controller and rebuild mechanical compoenets	30	ဟ	25	\$40,000	%0	100%	%0
8.5.1 Enterphone/Entry System	Allowance for replacement of the enterphone system	50	ഗ	<b>5</b>	\$15,000	%0	100%	%0
8.5.2 CCTV -Replacement	Budget to replace the CCTV system	10	Ŋ	S	\$10,000	%0	100%	%0
8.4.4 Parkade Overhead Gates	Budget for door replacement	50	D.	15	\$8,000	100%	%0	%0
9.1 Contingency Reserve Fund Study	Budget for Future CRFS	8	0	m	\$8,500	100%	%0	%0

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SPRATT EMANUEL ENGINEERING LTD.

CONTINGENCY RESERVE FUND STUDY/
DEPRECIATION REPORT
STRATA PLAN BCS 2789 – KEYSTONE
12350 HARRIS ROAD, PITT MEADOWS, B.C.

Our File No. G13-202 November 30, 2013

# APPENDIX B:

Strata Corporation – Financial Scenarios and Graphs



Depreciation Report Cash Flow Summary

- Strata Corporation -Scenario #1: Fully Funded Increase Over 1 Year

**Final** 

G13-202

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balance: \$104,860 \$125,000

Assumed Inflation:

3.00%

Assumed Annual Interest Rate for Interest Earned:

2.00%

Initial Contribution Increment:

173.00%

00%

Final Contribution Increment:

Year	Opening Balance	Recommended Annual Contribution	Estimated inflation Adjusted Expenditures	Estimated Interest Earned	Percentage Increase in Recommended Annual Contribution**	Clasing Belance	Comments
2013	\$104,860	\$19,313	-\$2,000	\$2,097	N/A	\$125,439	
2014	\$126,439	\$23,121	\$0	\$2,509	N/A	\$151,089	
2015	\$151,069	\$63,122	\$0	\$3,021	173,00%	\$217,212	
2016	\$217,212	\$65,015	-\$25,679	\$4,344	3.00%	\$260,893	
2017	\$260,893	\$66,966	\$0	\$5,218	3.00%	\$333,076	
2018	\$333,076	\$68,975	-\$53,327	\$6,662	3.00%	\$356,386	
2019	\$355,386	\$71,044	-\$10,149	\$7,108	3.00%	\$423,388	
2020	\$423,388	\$73,175	-\$9,839	\$8,408	3,00%	\$495,192	
2021	\$495,192	\$76,371	-\$12,668	\$9,904	3.00%	\$567,799	
2022	\$567,799	\$77,632	-\$11,091	\$11,350	3,00%	\$645,696	
2023	\$645,698	\$79,961	-\$87,355	\$12,914	3.00%	\$651,216	
2024	\$651,216	\$82,359	-\$179,950	\$13,024	3.00%	\$566,649	
2025	\$566,649	\$84,830	-\$119,051	\$11,333	3.00%	\$543,781	
2026	\$543,761	\$87,375	\$0	\$10,875	3.00%	\$642,011	v.
2027	\$642,011	\$89,996	-\$22,689	\$12,840	3.00%	\$722,159	
2028	\$722,159	\$92,696	-\$81,793	\$14,443	3,00%	\$747,505	
2029	\$747,605	\$95,477	-\$8,024	\$14,950	3.00%	\$849,909	
2030	\$849,909	\$98,341	-\$16,528	\$16,998	3,00%	\$948,720	
2031	\$948,720	\$101,292	-\$22,983	\$18,974	3.00%	\$1,046,003	
2032	\$1,046,003	\$104,330	-\$40,331	\$20,920	3.00%	\$1,130,923	
2033	\$1,130,923	\$107,460	-\$712,511	\$22,618	3.00%	\$548,491	1
2034	\$548,491	\$110,084	-\$15,813	\$10,970	3.00%	\$654,332	[
2035	\$654,332	\$114,005	-\$9,581	\$19,087	3.00%	\$771,843	
2036	\$771,843	\$117,425	-\$19,736	\$15,437	3.00%	\$884,969	
2037	\$884,989	\$120,948	\$27,443	\$17,699	3.00%	\$996,173	
2038	\$996,173	\$124,576	-\$337,098	\$19,923	3.00%	\$803,574	
2039	\$803,574	\$128,313	-\$681,483	\$16,071	3.00%	\$266,476	Critical Year #1
2040	\$260,470	\$132,183	-\$52,200	\$5,330	3.00%	\$351,768	
2041	\$351,768	\$136,128	-\$11,440	\$7,035	3.00%	\$483,491	1
2042	\$483,491	\$140,211	\$0	\$9,670	3,00%	\$633,372	

<sup>\*\*</sup> Refers to the increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.



Strata Plan BCS 2789 - Keystone Depreciation Report Cash Flow Summary

- Strata Corporation -Scenario #2: Fully Funded Increases Over 5 Years

Final

G13-202

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balance: \$104,860 \$125,000

Assumed Inflation: Initial Contribution Increment:

3,00% 26.60%

Assumed Annual Interest Rate for Interest Earned:

2.00%

Final Contribution Increment:

Yoar	Opening Balance	Recommended Annual Contribution	Estimated inflation Adjusted Expenditures	Estimated Interest Earned	Percentage Increase in Recommended Annual Contribution**	Closing Balance	Comments
2013	\$104,860	\$19,313	-\$2,000	\$2,097	N/A	\$125,439	
2014	\$126,439	\$23,121	\$0	\$2,509	N/A	\$151,069	
2015	\$151,069	\$29,272	\$0	\$3,021	26.60%	\$183,362	
2010	\$183,362	\$37,058	-\$25,679	\$3,607	26.60%	\$198,409	
2017	\$198,409	\$46,916	\$0	\$3,968	26.60%	\$249,292	
2018	\$240,292	\$59,395	-\$53,327	\$4,986	26.60%	\$260,347	
2019	\$260,347	\$75,194	-\$10,149	\$5,207	26.60%	\$330,598	
2020	\$330,598	\$77,450	-\$9,839	\$6,612	3.00%	\$404,821	
2021	\$404,821	\$79,773	-\$12,668	\$8,098	3.00%	\$480,023	
2022	\$400,023	\$82,167	-\$11,091	\$9,000	3.00%	\$660,700	F
2023	\$580,700	\$84,632	-\$87,355	\$11,214	3.00%	\$569,191	
2024	\$569,191	\$87,171	-\$179,950	\$11,304	3,00%	\$487,795	
2025	\$487,795	\$89,786	-\$119,051	\$9,756	3.00%	\$468,286	
2026	\$468,286	\$92,479	\$0	\$9,366	3.00%	\$570,131	
2027	\$570,131	\$95,254	-\$22,689	\$11,403	3,00%	\$654,098	
2028	\$654,098	\$98,111	-\$81,793	\$13,082	3.00%	\$683,498	1
2029	\$683,498	\$101,056	-\$8,024	\$13,670	3.00%	\$790,199	
2030	\$790,199	\$104,086	-\$16,528	\$15,804	3.00%	\$893,581	
2031	\$893,561	\$107,209	-\$22,983	\$17,871	3,00%	\$995,668	
2032	\$995,658	\$110,425	-\$40,331	\$19,913	3.00%	\$1,085,668	1
2033	\$1,085,666	\$113,738	-\$712,511	\$21,713	3.00%	\$500,606	
2034	\$508,000	\$117,150	-\$15,813	\$10,172	3.00%	\$620,116	
2035	\$620,116	\$120,865	-\$9,581	\$12,402	3.00%	\$743,602	
2036	\$743,602	\$124,284	-\$19,730	\$14,872	3.00%	\$803,023	
2037	\$863,023	\$128,013	-\$27,443	\$17,260	3,00%	\$980,853	
2038	\$980,853	\$131,853	-\$337,098	\$19,617	3.00%	\$795,226	2.20.000
2039	\$795,226	\$135,809	-\$681,483	\$15,905	3.00%	\$265,456	Critical Year #1
2040	\$265,456	\$139,883	-\$52,200	\$5,309	3.00%	\$358,448	
2041	\$358,448	\$144,080	-\$11,440	\$7,169	3,00%	\$498,257	
2042	\$498,257	\$148,402	\$0	\$9,065	3.00%	\$658,825	

<sup>\*\*</sup> Refers to the Increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.

SPRATT EMANUEL

Strate Plan BGS 2789 - Keystone

Depreciation Report Cash Flow Summary

- Strata Corporation -Scenario #3: Fully Funded

Increases Over 15 Years RECOMMENDED

\$104,860 \$125,000

Assumed Inflation: Initial Contribution increment:

3.00% 11.80%

G13-202

Final

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balance;

Assumed Annual Interest Rate for Interest Earned:

2.00%

Final Contribution Increment:

	Fittal Continuation moromone.									
Year	Opening Balance	Recommended Annual Contribution	Estimated inflation Adjusted Expenditures	Estimated Interest Earned	Percentage Increase in Recommended Annual Contribution**	Closing Bulance	Comments			
2013	\$104,860	\$19,313	-\$2,000	\$2,097	N/A	\$125,430				
2014	\$125,439	\$23,121	\$0	\$2,509	N/A	\$151,069				
2015	\$151,069	\$25,850	\$0	\$3,021	11,80%	\$179,940				
2016	\$179,940	\$28,900	-\$25,679	\$3,599	11.80%	\$186,760				
2017	\$186,760	\$32,310	\$0	\$3,735	11.80%	\$222,806				
2018	\$222,806	\$36,123	-\$53,327	\$4,456	11,80%	\$210,058				
2019	\$210,058	\$40,385	-\$10,149	\$4,201	11.80%	\$244,496				
2020	\$244,495	\$45,161	-\$9,839	\$4,890	11.80%	\$284,697				
2021	\$284,697	\$50,479	-\$12,668	\$5,694	11.80%	\$328,202				
2022	\$328,202	\$56,435	-\$11,091	\$6,564	11.80%	\$380,111				
2023	\$380,111	\$63,095	-\$87,355	\$7,802	11.80%	\$363,453				
2024	\$363,453	\$70,540	-\$179,950	\$7,269	11.80%	\$261,311				
2025	\$261,311	\$78,863	-\$119,051	\$5,226	11.80%	\$228,350				
2026	\$226,350	\$88,169	\$0	\$4,527	11.80%	\$319,046				
2027	\$319,046	\$98,573	-\$22,689	\$8,381	11.80%	\$401,311				
2028	\$401,311	\$110,205	-\$81,793	\$8,026	11,80%	\$437,749				
2029	\$437,749	\$123,209	-\$8,024	\$8,755	11.80%	\$661,689	2			
2030	\$561,089	\$126,905	-\$16,528	\$11,234	3.00%	\$683,300	1			
2031	\$683,300	\$130,712	-\$22,983	\$13,666	3.00%	\$804,698				
2032	\$804,696	\$134,634	-\$40,331	\$18,094	3.00%	\$915,093				
2033	\$915,093	\$138,673	-\$712,511	\$18,302	3.00%	\$369,657				
2034	\$359,557	\$142,833	-\$15,813	\$7,191	3.00%	\$493,768				
2035	\$493,768	\$147,118	-\$9,581	\$9,875	3.00%	\$641,181				
2036	\$641,181	\$151,532	-\$19,730	\$12,824	3.00%	\$785,800				
2037	\$785,800	\$156,077	-\$27,443	\$15,716	3,00%	\$930,151				
2038	\$930,151	\$160,780	-\$337,098	\$18,603	3.00%	\$772,416				
2039	5772,416	\$105,583	-\$681,483	\$15,448	3.00%	\$271,964	Critical Year #1			
2040	\$271,064	\$170,550	-\$52,200	\$6,439	3.00%	\$395,753	1			
2040	\$395,763	\$175,667	-\$11,440	\$7,915	3.00%	\$667,895				
2047	\$587,895	\$180,937	\$0	\$11,358	3,00%	\$760,189				

<sup>\*\*</sup> Refers to the Increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.



Depreciation Report Cash Flow Summary

- Strata Corporation -Scenario #4: Minimum Contributions Increases Indexed to Inflation

Final

G13-202

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balance:

\$104,860 \$125,000

Assumed Inflation: Contribution Increment: 3.00% 3.00%

Assumed Annual Interest Rate for Interest Earned:

Year	Opening Balance	Recommended Annual Contribution	Estimated Inflation Adjusted Expenditures	Estimated Interest Earned	Special Levy	Percentage Increase in Recommended Annual Contribution**	Closing Balance	Comments
2013	\$104,860	\$19,313	-\$2,000	\$2,097	\$0	N/A	\$124,270	
2014	\$125,439	\$23,121	\$0	\$2,509	\$0	N/A	\$151,069	
2015	\$151,089	\$19,313	\$0	\$3,021	\$0	-10.47%	\$173,404	
2016	\$173,404	\$19,892	-\$25,079	\$3,460	\$0	3.00%	\$171,085	
2017	\$171,085	\$20,489	\$0	\$3,422	\$0	3,00%	\$104,990	
2018	\$194,996	\$21,104	-\$63,327	\$3,900	\$0	3.00%	\$166,673	
2019	\$166,673	\$21,737	-\$10,149	\$3,333	\$0	3,00%	\$181,594	
2020	\$181,594	\$22,389	-\$9,839	\$3,632	\$0	3.00%	\$197,776	.0
2021	\$197,776	\$23,061	\$12,66B	\$3,956	\$0	3.00%	\$212,124	
2022	\$212,124	\$23,753	-\$11,091	\$4,242	\$0	3.00%	\$229,029	
2023	\$229,029	\$24,465	-\$87,355	\$4,581	\$0	3.00%	\$170,720	
2024	\$170,720	\$26,190	-\$179,950	\$3,414	\$0	3.00%	\$19,383	
2025	\$19,383	\$25,955	-\$119,051	\$388	\$75,000	3.00%	\$1,674	
2020	\$1,674	\$26,734	\$0	\$33	\$0	3.00%	\$28,442	
2027	\$28,442	\$27,536	-\$22,689	\$569	\$0	3,00%	\$33,857	
2028	\$33,857	\$28,362	-\$81,793	\$677	\$20,000	3.00%	\$1,103	
2029	\$1,103	\$29,213	-\$8,024	\$22	\$0	3.00%	\$22,314	
2030	\$22,314	\$30,089	-\$16,528	\$448	\$0	3.00%	\$36,321	
2031	\$36,321	\$30,992	-\$22,983	\$726	\$0	3.00%	\$45,058	
2032	\$45,056	\$31,921	-\$40,331	\$901	\$0	3,00%	\$37,548	
2032	\$37,548	\$32,879	-\$712,511	\$751	\$645,000	3.00%	\$3,687	
2034	\$3,667	\$33,865	-\$15,813	\$73	\$0	3,00%	\$21,793	
2035	\$21,793	\$34,881	-\$9,581	\$436	\$0	3.00%	\$47,530	
2036	\$47,530	\$35,928	-\$19,736	\$951	\$0	3,00%	\$64,672	
2037	\$64,672	\$37,006	-\$27,443	\$1,293	\$0	3.00%	\$75,529	
2038	\$75,529	\$38,116	-\$337,098	\$1,511	\$225,000	3,00%	\$3,057	
2039	\$3,057	\$39,259	-\$681,483	\$61	\$840,000	3.00%	\$894	
2040	\$894	\$40,437	-\$52,200	\$18	\$15,000	3.00%	\$4,149	
2040	\$4,149	\$41,850	·\$11,440	\$83	\$0	3.00%	\$34,443	
2041	\$34,443	\$42,900	\$0	\$689	\$0	3,00%	\$78,031	

<sup>\*\*</sup> Refers to the Increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.



Strata Plan BCS 2789 - Keystone Dopreciation Report

Cash Flow Summary

- Strate Corporation -Scenario #5: 50% of Fully Funded Supplemented by Special Levies

**Final** 

G13-202

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balanco: \$104,860 \$125,000

Assumed Inflation: Initial Contribution Increment:

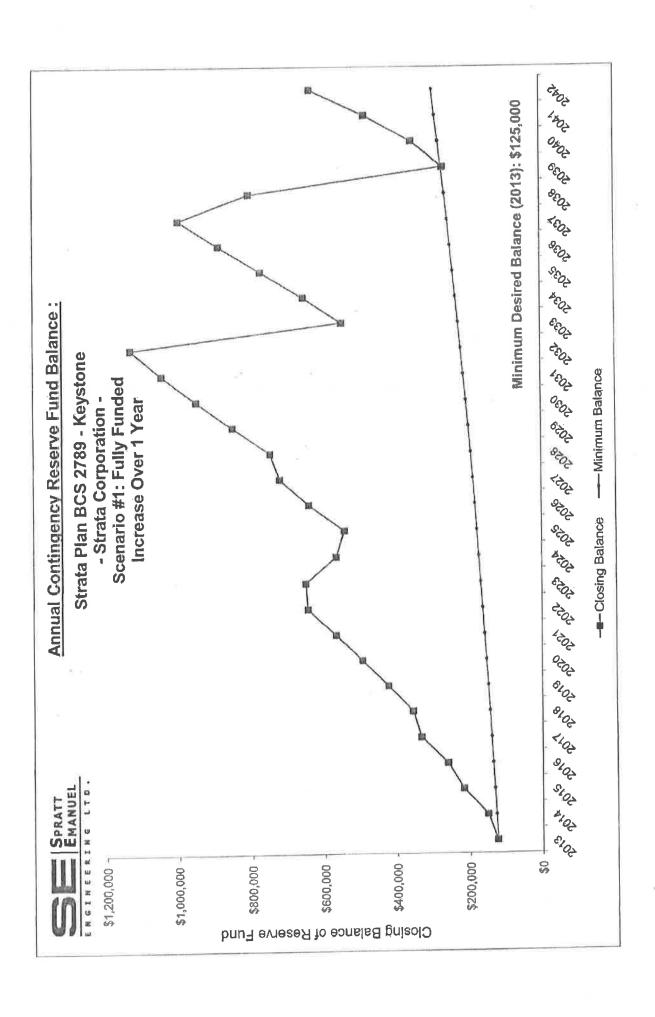
3.00% 88.00%

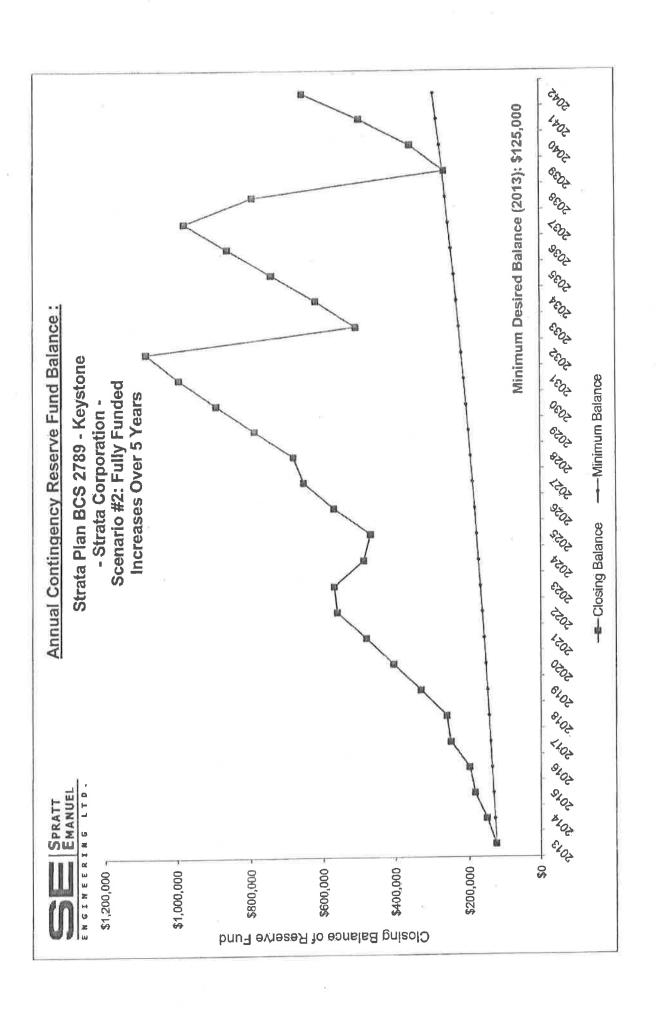
Assumed Annual Interest Rate for Interest Earned:

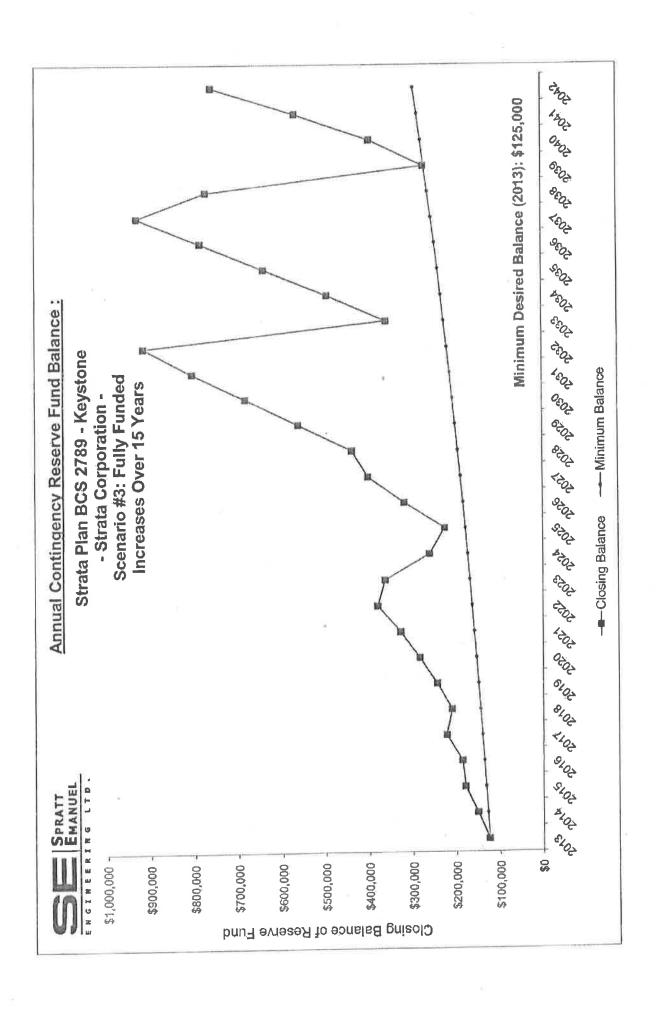
2.00%

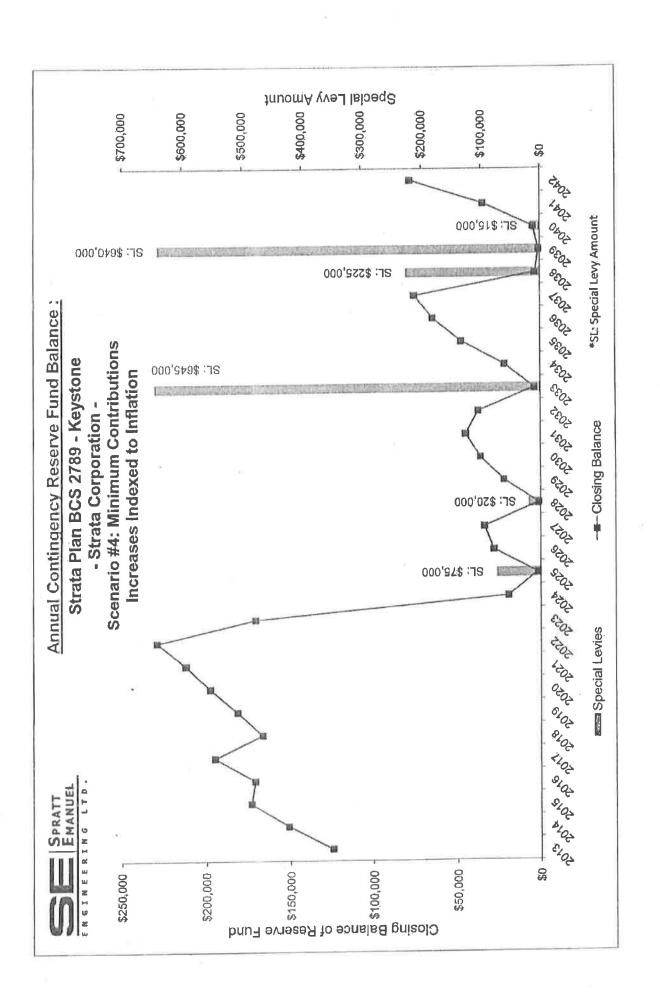
Year	Opening Balance	Recommended Annual Contribution	Estimated Infintion Adjusted Expanditures	Estimated Interest Earned	Special Levy	Percentage Increase in Recommended Annual Contribution**	Closing Balance	Comments
2013	\$104,860	\$19,313	-\$2,000	\$2,097	\$0	N/A	\$124,270	
2014	\$125,439	\$23,121	\$0	\$2,509	\$0	N/A	\$151,069	
2015	\$151,089	\$43,468	\$0	\$3,021	\$0	88,00%	\$197,559	1
2016	\$197,559	\$44,772	-\$25,870	\$3,951	\$0	3.00%	\$220,603	
2017	\$220,603	\$46,116	\$0	\$4,412	\$0	3.00%	\$271,131	
2018	\$271,131	\$47,499	-\$53,327	\$5,423	\$0	3:00%	\$270,726	
2019	\$270,726	\$48,924	-\$10,149	\$5,415	\$0	3.00%	\$314,915	
2020	\$314,915	\$50,392	-\$9,839	\$6,208	\$0	3.00%	\$361,766	
2021	\$361,766	\$51,903	-\$12,868	\$7,235	\$0	3,00%	\$408,238	
2022	\$408,238	\$53,461	-\$11,091	\$8,165	\$0	3.00%	\$458,772	
2023	\$458,772	\$55,064	-\$87,355	\$9,175	\$0	3.00%	\$435,858	
2024	\$435,658	\$56,716	-\$179,950	\$8,713	\$0	3.00%	\$321,137	
2025	\$321,137	\$58,418	-\$119,051	\$6,423	\$0	3.00%	\$260,926	
2026	\$266,926	\$60,170	\$0	\$6,339	\$0	3.00%	\$332,436	
2027	\$332,435	\$61,975	-\$22,689	\$6,649	\$0	3.00%	\$378,371	
2028	\$378,371	\$63,835	-\$81,793	\$7,567	\$0	3.00%	\$367,979	
2029	\$367,979	\$65,750	-\$8,024	\$7,360	\$0	3.00%	\$433,085	
2030	\$433,065	\$67,722	-\$16,528	\$8,661	\$0	3.00%	\$492,920	i
2031	\$492,920	\$69,754	-\$22,983	\$9,868	\$0	3,00%	\$549,550	
2032	\$549,550	\$71,847	-\$40,331	\$10,991	\$0	3.00%	\$592,057	
2033	\$592,057	\$74,002	-\$712,511	\$11,841	\$150,000	3.00%	\$116,389	Critical Year #1
2034	\$115,389	\$78,222	-\$15,813	\$2,308	\$0	3.00%	\$178,100	
2035	\$178,106	\$78,509	-\$9,581	\$3,662	\$0	3.00%	\$250,597	
2036	\$250,597	\$80,864	-\$19,736	\$5,012	\$0	3.00%	\$316,737	
2037	\$318,737	\$83,290	-\$27,443	\$6,335	\$0	3.00%	\$378,919	
2038	\$378,919	\$85,789	-\$337,098	\$7,678	\$0	3.00%	\$135,187	Critical Year #2
2039	\$135,187	\$88,362	-\$681,483	\$2,704	\$595,000	3.00%	\$139,770	Critical Year #3
2040	\$139,770	\$91,013	-\$62,200	\$2,795	\$0	3,00%	\$181,379	
		\$93,743	-\$11,440	\$3,628	\$0	3,00%	\$267,310	
2041 2042	\$181,379 \$267,310	\$96,556	\$0	\$5,346	\$0	3,00%	\$369,212	

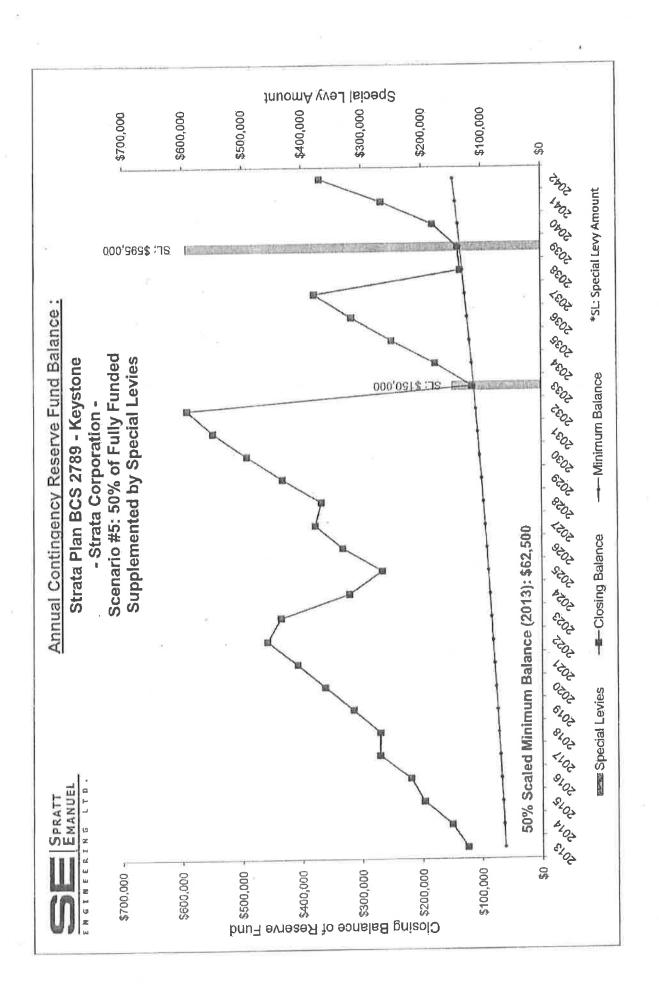
<sup>\*\*</sup> Refers to the Increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.

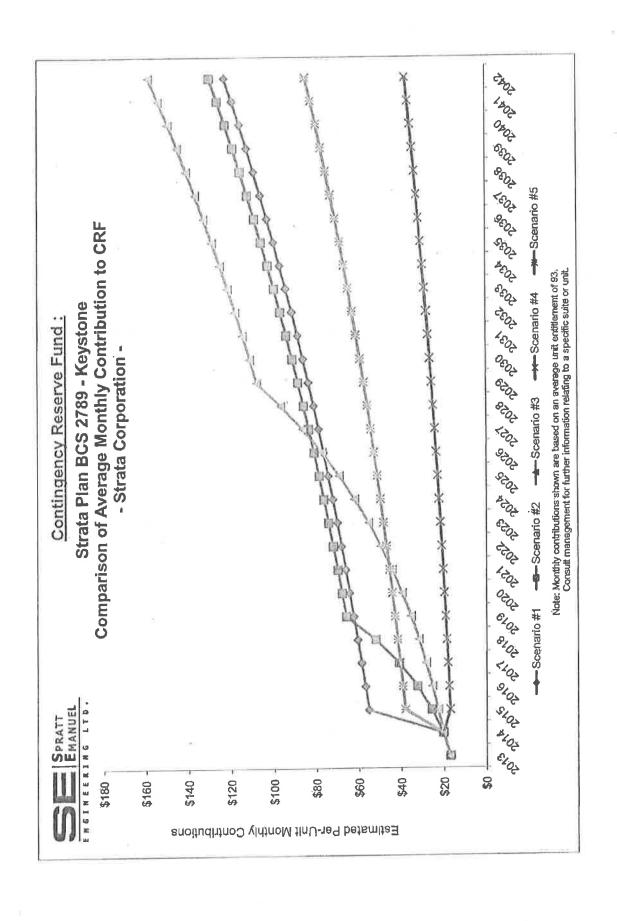












SPRATT EMANUEL ENGINEERING LTD.

CONTINGENCY RESERVE FUND STUDY/
DEPRECIATION REPORT
STRATA PLAN BCS 2789 – KEYSTONE
12350 HARRIS ROAD, PITT MEADOWS, B.C.

Our File No. G13-202 November 30, 2013

## APPENDIX C:

Residential Section - Financial Scenarios and Graphs

SE SPRATT

Strate Plan BCS 2789 - Keystone

Depreciation Report
Cash Flow Summary
- Residential Section Scenario #1: Fully Funded Increase Over 1 Year

Final

G13-202

Opening Balance of the Reserve Fund: Minimum Desired Reserve Fund Balance:

\$22,628 \$40,000

Assumed Inflation:

3.00% 60.00%

2.00%

Initial Contribution Increment:

Assumed Annual Interest Rate for Interest Earned:

Final Contribution Increment:

Year	Opening Balance	Recommended Annual Contribution	Estimated Infiation Adjusted Expenditures	Estimated Interest Earned	Percentage Increase in Recommended Annual Contribution**	Closing Balance	Comments
2013	\$22,628	\$7,602	\$0	\$463	N/A	\$30,510	=165 01
2014	\$30,510	\$12,145	\$0	\$610	N/A	\$43,265	Critical Year #1
2015	\$43,265	\$19,432	\$0	\$865	60.00%	\$63,582	
2016	\$63,562	\$20,015	\$0	\$1,271	3.00%	\$84,848	li .
2017	\$84,848	\$20,615	\$0	\$1,697	3.00%	\$107,161	
2018	\$107,161	\$21,234	-\$17,389	\$2,143	3.00%	\$113,149	
2019	\$113,149	\$21,871	-\$29,851	\$2,263	3.00%	\$107,431	
2020	\$107,431	\$22,527	-\$34,436	\$2,149	3,00%	\$97,670	
2021	\$97,670	\$23,203	\$0	\$1,953	3.00%	\$122,827	
2022	\$122,827	\$23,899	\$0	\$2,457	3,00%	\$149,182	
2023	\$149,182	\$24,616	-\$14,783	\$2,084	3,00%	\$161,999	1
2024	\$161,099	\$25,354	\$0	\$3,240	3.00%	\$190,593	1
2025	\$190,593	\$26,115	-\$35,644	\$3,812	3.00%	\$184,876	1
2026	\$184,876	\$28,898	\$0	\$3,698	3.00%	\$215,472	1
2027	\$215,472	\$27,706	\$0	\$4,309	3.00%	\$247,486	1
2028	\$247,488	\$28,537	-\$119,963	\$4,950	3.00%	\$161,009	
2029	\$161,009	\$29,393	\$0	\$3,220	3.00%	\$193,622	1
2030	\$193,622	\$30,274	\$0	\$3,872	3,00%	\$227,769	1
2031	\$227,769	\$31,183	-\$42,561	\$4,555	3.00%	\$220,046	
2032	\$220,946	\$32,118	\$0	\$4,419	3,00%	\$267,483	
2033	\$257,483	\$33,082	-\$149,907	\$5,150	3.00%	\$146,807	
2033	\$145,807	\$34,074	\$0	\$2,018	3.00%	\$182,798	
2035	\$182,798	\$35,096	\$0	\$3,656	3.00%	\$221,650	1
2036	\$221,550	\$36,149	\$0	\$4,431	3.00%	\$262,130	
2037	\$262,130	\$37,234	-\$50,820	\$5,243	3.00%	\$253,787	
2038	\$253,787	\$38,351	-\$211,472	\$5,076	3.00%	\$85,741	Critical Year #2
2039	\$85,741	\$39,501	\$0	\$1,715	3.00%	\$120,958	
2040	\$126,958	\$40,686	-\$62,196	\$2,530	3.00%	\$107,987	
2040	\$120,555	\$41,907	\$0	\$2,160	3,00%	\$152,053	
2041	\$152,053	\$43,164	\$0	\$3,041	3,00%	\$198,259	

<sup>\*\*</sup> Refers to the Increase in the current annual contributions to the Reserve Fund only, which is a portion of the Annual Operating Budget.