MORRISON HERSHFIELD

REPORT

Comprehensive Reserve Fund Study

Carleton Condominium Corporation No. 60

333 Chapel Street, Ottawa, Ontario

Presented to:

The Board of Directors
Carleton Condominium Corporation No. 60

c/o: Tasha Peric, Property Manager
Bridgeport Realty Management
100-100 Argyle Avenue
Ottawa, Ontario K2P 1B6

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1. INTRODUCTION

Morrison Hershfield Limited (Morrison Hershfield) was retained to conduct a Comprehensive Reserve Fund Study of Carleton Condominium Corporation No. 60 (CCC 60) located at 333 Chapel, Ottawa, Ontario. Authorization to proceed with the study was provided by Tasha Peric, Property Manager (Bridgeport Realty Management), on behalf of the Corporation.

1.1 Objectives

The objective of this Reserve Fund Study is to provide the Board of Directors with sufficient information to enable them to prepare a Reserve Fund Plan. This study will contribute to this Plan by providing:

a) A schedule for the anticipated major repair and replacement of common elements and assets, and

b) To recommend annual contributions necessary to maintain an adequate balance for the 30 year period of this study

This reserve fund study was conducted as a Comprehensive Reserve Fund Study is in general compliance with the regulations of Section 94 of the *Condominium Act, 1998* and Part IV, Sections 29 and 30 of O.Reg. 48/01.

1.2 Terms of Reference

This Reserve Fund Study was subject to the limitations of Section 1.7 and addressed the following scope of service as detailed in our proposal dated November 27, 2014.

- A review of available documentations (as outlined in the Act).
- Meeting with representatives of the Board of Directors or Property Manager to discuss the history of problems, repairs, and remedial work undertaken since the last Reserve Fund Study.
- A visual inspection of the common elements of the building in order to assess the current condition and estimate remaining service life. The review will be conducted from grade, accessed units (three), roof level(s) and balconies, where safely accessible. Observations will be made only of those areas that are readily accessible during a “walk-through” type of review and will not include any concealed elements. Material sampling and testing, and systems performance testing are not included, unless otherwise identified herein.
- Prepare a Reserve Fund Study Report and Form 15. The report will include a physical analysis of each common element, including a description, current observed condition, any observed deficiencies, life expectancy and recommended time frame for repair and/or replacement. The report will also include a financial analysis, indicating the current financial status of the reserve fund, the estimated repair and/or replacement cost of the common elements, and up to two recommended funding plan scenarios for a minimum of 30 years.

1.3 General Terms

As required by the Condominium Act, the corporation shall conduct periodic studies to determine whether the amount of money in the reserve fund and the amount of contributions collected by the corporation are adequate to provide for the expected costs of major repair and replacement of the common elements and assets of the corporation.

The steps in completing a Reserve Fund Study are as follows:

1. Identify elements to be included in the component inventory (Component Inventory Table of Appendix A).

2. For each item in the component inventory, assess parameters for each component (Component Inventory Table of Appendix A). These parameters include age, life expectancy, estimated years for major repairs and replacements, and opinion of probable cost for major repairs and/or replacements.

3. Based on the information shown in Appendix A, generate a list of annual expected expenditures (30-Year Detailed Cash Flow Plan) and calculate contribution scenarios that may be considered adequate.

1.4 Project Team

This Reserve Fund Study has been prepared and/or reviewed by various personnel within Morrison Hershfield. The following are the reviewers and the respective disciplines for which each was responsible:

- Heather Penner, CET, conducted the review of the building envelope, structure, interior finishes, and site and prepared those portions of the report. Allison Huffman, P.Eng., provided technical review of these sections of the report.
- Greg Hebb conducted the mechanical systems review and prepared those portions of the report. Paul Séguin, P.Eng., provided technical review of the mechanical sections of this report.
- Jared Fleming conducted the electrical systems review and prepared those portions of the report. Alfred Ng, P.Eng., provided technical review of the mechanical sections of this report.
- Shereen Rifaat, P.Eng., reviewed the report for general compliance with the Act.

The elevators were addressed by a sub-consultant, Rooney, Irving and Associates Limited (RIA) during a separate site visit; the elevator report is appended to this report

1.5 Report Format

The report is separated into the following sections for the convenience of the reader. Briefly, the contents of each of these sections are:

1. Introduction

A general description of the services provided.

2. Developing the Component Inventory

Methodology and definitions used to identify items to be included in the component inventory, which form the framework for the Reserve Fund Study.

3. Physical Analysis and Costing

Information regarding the methodology of the site visit and development of anticipated repair costs, and a summary of recommendations for further investigation where there is uncertainty regarding a specific item.

4. Financial Analysis

Methodology of calculating cash-flow plan and examples of contribution plans that may be considered adequate.

5. Conclusion

A summary of the Reserve Fund Study process and the Board's proposed contribution plan.

6. Appendix A – Component Inventory Table

Includes the Component Inventory Table, which describes the common elements addressed by the Reserve Fund.

7. Appendix B – Current Contribution

Includes tables representing the current annual contribution to the reserve fund.

8. Appendices C & D – Proposed Contribution Scenarios

Includes tables representing Scenarios 1 and 2 (proposed contribution plans). For Scenarios 1 and 2, the tables provided include a 30-Year Detailed Cash-Flow Plan, Chart, and Cash-Flow Table and Contribution Table which outlines the proposed contribution levels.

9. Appendix E – Elevator Report

The elevator report prepared by the sub-consultant, Rooney, Irving and Associates, Limited.

1.6 Reference Documents/Information

The following documentation was provided for our review to assist in the preparation of this Reserve Fund Study:

- Reserve Fund Study Update for CCC 60, prepared by Cleland Jardine Engineering Ltd., dated February 14, 2012;
- Reserve Fund Study for CCC 60, prepared by Cleland Jardine Engineering Ltd., dated October 1, 2008;
- Financial Statements for CCC 60, for years ended September 30, 2012 and 2013, prepared by KPMG, dated January 14, 2014;
- Financial Statements for CCC 60, for year ended September 30, 2014, prepared by BDO Canada, dated November 24, 2014,
- Declaration for CCC 60, scanned copy reformatted January 4, 2011;
- Structural drawings S1 to S3 (3 sheets), prepared by Oliver Mangioine McCalla Associated Ltd., date August 1986;
- Interior Design drawings (11 sheets), prepared by Jeff Arron, original issue date May 7, 1974;
- Electrical drawings (6 sheets), prepared by J. G. Knowton Ltd., original issue date April 10, 1974;
- By-law No. 1 for CCC 60, dated September 5, 1975;
- By-law No. 2 for CCC 60, prepared by Nelligan/Power, dated January 26, 1995;
- By-law No. 3 for CCC 60, prepared by Nelligan O'Brien Payne LLP, dated December 11, 2002;
- By-law No. 4 for CCC 60, prepared by Nelligan O'Brien Payne LLP, dated December 11, 2002;
- By-law No. 5 for CCC 60, dated April 17, 2007;
- By-law No. 6 for CCC 60;
- Form 15 for CCC 60, dated March 9, 2012;
- Window Investigation, prepared by Cleland Jardine Engineering Ltd., dated December 3, 2007;
- Tender Documents and Technical Specifications/Drawings for Window/Patio Door Replacement, prepared by Cleland Jardine Engineering Ltd., dated April 2008;
- CCDC 2 for Window/Patio Door Replacement, dated July 24, 2008;
- Tender Call for Window Panel Replacement, prepared by Keller Engineering, dated May 12, 2014;
- Letter of Intent for Window Panel Replacement, prepared by Keller Engineering, dated June 30, 2014;

- Garage Waterproofing Inspection, prepared by Keller Engineering, dated July 20, 2012;
- Site Review Report for CCC 60 – Joint Waterproofing, prepared by Keller Engineering, dated August 26, 2013;
- 2013 Garage Wall Joint Waterproofing – Tender Results, prepared by Keller Engineering, dated May 14, 2013;
- Retaining Wall Repairs, prepared by Cleland Jardine Engineering Ltd., dated November 19, 2007;
- Reserve Fund Study Questionnaire, completed by Tasha Peric (Property Manager), dated January 26, 2015;
- Asbestos Containing Materials Reassessment, prepared by EHS, dated June 2013;
- Designated Substance Survey Report, prepared by EHS, dated November 2012;
- Asbestos Management Plan, prepared by EHS, dated November 2012;
- Door Replacement Quote, prepare by Vitrerie Orleans Glass MM Inc., dated September 27, 2013;
- Initial Wall Investigation, 333 Chapel Street Unit 506, prepared by IRC Building Sciences Group Inc., dated March 27, 2015;
- Pool Heating Coil Quote, prepared by Baxtec Mechanical Services, dated February 13, 2014;
- Exterior Bulkhead Quote, prepared by DGL Construction, dated January 13, 2015;
- Draft Financial Statements for the year ended September 30, 2015, dated November 10, 2015;
- Report for Pipe Condition Survey, prepared by Morrison Hershfield, dated September 4, 2015.

1.7 Limitations and Assumptions

This report is intended for the sole use of CCC 60, and must not be distributed or used by others without our knowledge, other than as prescribed by the Condominium Act. It is based on the documents and information provided to us and the findings at the time of our on-site investigation.

It is a basic assumption that any correspondence, material, data, evaluations and reports furnished by others are free of latent deficiencies or inaccuracies except for apparent variances discovered during the completion of this report.

Unless specifically noted in this report, no testing, verification of operation of systems, review of concealed elements, intrusive openings, opening of system components for internal inspection, detailed analysis or design calculations were conducted, nor were they within the scope of this review.

Some of the findings herein are based on a random sampling visual review of the surface conditions, discussions with the Board of Directors and/or their designated representatives, and review of relevant documents. Observations were made only of those areas that were readily accessible during our review. Deficiencies existing but not recorded in this report were not apparent given the level of study undertaken. Components not included have not been reviewed, and if their conditions need to be known, further study will be required. Unless otherwise noted, we have not undertaken a physical review of subsurface conditions or concealed structural systems. In particular, our review of structural components consisted of a visual walk-through survey of a sampling of readily accessible structural components. Structural members were generally not subjected to their full design live loads (including wind and seismic effects), so this type of review is very limited in identifying hidden or latent structural defects.

It is possible that unexpected conditions may be encountered at the building that have not been explored within the scope of this report. Should such an event occur, Morrison Hershfield should be notified in order that we may determine if modifications to our conclusions are necessary.

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

Professional judgment was exercised in gathering and analyzing the information obtained and in the formulation of the conclusions. Like all professional persons rendering advice, we do not act as insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions. No other warranties, either expressed or implied, are made.

2. DEVELOPING THE COMPONENT INVENTORY

O. Reg. 48/01, s. 29 indicates that a Reserve Fund Study shall include a physical analysis. The first step in conducting the physical analysis is identifying the component inventory for your complex. The component inventory is provided in Appendix A.

2.1 General Facility Description

Carleton Condominium Corporation No. 60 is located at 333 Chapel Street, in Ottawa, Ontario. Construction was completed circa 1974.

The condominium complex consists of an 11-storey residential building with a single basement level. There are 60 condominium units. An attached two-level garage is provided for the use of the residents. Common element features of the condominium include a lobby, boardroom, two rental suites and an indoor swimming pool. Two elevators provide access to all floors.

2.2 Common Elements

Based on our review of the Declaration, and information provided by Melanie Pilon, we understand that the following building components are common elements at CCC 60:

- Structural systems,
- Parking garage,
- Exterior walls, all components up to the back-side of the drywall,
- Windows,
- Doors (exterior, common, suite),
- Roofing systems,
- Building common areas (corridors, service rooms),
- Recreational facilities,
- Common area landscaping,
- Mechanical systems (components that serve more than one unit),
- Electrical systems (components that serve more than one unit), and
- Elevators.

The Board of CCC 60 has reviewed this report and confirmed the list of common elements.

2.3 Components

O.Reg. 48/01, s. 27 defines a component inventory as "… an inventory, in a reserve fund study of a corporation, of each item of the common elements and assets of the corporation that requires, or is expected to require within at least 30 years of the date of the study, major repair or replacement where the cost of replacement is not less than $500;"

The $500 limit can be interpreted in two ways:

- All common elements that cost at least $500 must be included in the component inventory; OR
- No item costing less than $500 is to be included in the component inventory

It has been our experience that most Boards of Directors choose to cover small capital expenditures out of the operating budget. The Board of Directors for CCC 60 has directed Morrison Hershfield to assume that capital expenses less than $3,000 will be covered out of the operating budget, and expenses greater than that amount be budgeted for in the Reserve Fund.

2.4 Operating Expenses

The reserve fund is to be used only for capital expenditures including major repair and replacement of the common elements. We assume that minor repairs, localized replacement, and maintenance of the common elements are completed on a regular basis out of the operating budget.

2.5 Life Expectancy

In the Component Inventory Table, we have listed the normal life expectancy for each item in the component inventory. The normal life expectancies are based on our experience, manufacturer's recommendations and published industry guidelines.

An adjustment is made to the normal life expectancy when, in our opinion, the maintenance and/or use of an item has been such that the normal life expectancy will be notably affected (either positively or negatively). Unless otherwise noted, we assume that regular annual maintenance and repairs will be performed to all elements at the facility to ensure the full life expectancy of each component is reached.

The timing of major repairs or replacements is based on the remaining life expectancy. The remaining life expectancy is based, in part, on the current condition of the component determined during the site review.

2.6 Total Repair or Replacement Cost

Opinions of probable cost are provided only as an indication of possible cost of remedial work. The repair or replacement costs are based on published construction

cost data, recent bid prices on similar work, and information provided by the owner. More precise opinions of probable cost would require more detailed investigation to define the scope of work.

The opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified. All opinions of probable cost assume that regular annual maintenance and repairs will be performed to all elements at the facility.

We recommend that costs for consulting services, including design, tendering and construction review, be included in the reserve fund plan. The cost for these services can vary significantly depending on the size, scope and degree of complexity of the project. For the purposes of reserve fund budgeting, we have included an allowance of 7.0 percent for consulting fees where we believe it is appropriate, and 13.0 percent for applicable taxes (HST). All costs in the Component Inventory Table are identified in **2015 Canadian dollars**, all other costs shown in tables and plans are inflated.

The costs identified in the Component Inventory Table represent the adjusted cost when the percentage of the cost of major repairs and replacement is applied to the complete replacement cost. For most items, 100 percent of the complete replacement cost is provided; exceptions include where complete replacement is not anticipated (such as repair allowances). Where specific common elements are shared with another corporation, we have provided a description under the Recommendation indicating the percentage (less than 100 percent) of the total cost for which CCC 60 is responsible.

Where materials are likely asbestos containing (or have been identified in provided reports), we have included an allowance for asbestos abatement. This is an estimate based on our experience, but the cost of asbestos abatement can vary greatly. We recommend a more detailed assessment of the abatement requirements and costs be completed prior to proceeding with repairs or replacements.

3. PHYSICAL ANALYSIS

Once the items to be included in the component inventory are defined, a visual review of each of those elements, along with information provided by and discussions with the Board and/or their designated representatives, is conducted in order to assess the following eight parameters for each component:

1. actual or estimated year of acquisition,
2. present or estimated age,
3. normal expected life,
4. remaining life expectancy,
5. estimated years for major repairs and replacements,
6. opinion of probable cost for major repairs and/or replacements,
7. the percentage of the cost of major repairs and replacement to be covered by the reserve fund, and
8. adjusted cost resulting from the application of that percentage

The above criteria are outlined in the **Component Inventory Table**, which can be found in **Appendix A** of this study.

3.1 Site Review

The visual review of the complex was conducted on February 5, 2015. The common elements of the complex and the interiors and balconies of units 402, 704, and 905 of 333 Chapel Street, Ottawa, Ontario were reviewed. During our review of the building we were accompanied by Maurice Richard (Superintendent), who has been employed at the building for 11 years and Marcia Clement (President, Board of Directors) who has lived at the building for seven years.

Our site review consisted of a general visual survey of the complex to review a sampling of readily accessible, exposed components. Our review was conducted from the accessed suites and balconies, from the roof level, and from ground level. A review of the design, test openings, and/or physical testing of any of the common elements was not conducted and did not form part of the scope of our services. Physical sampling and/or test openings to assess materials and/or assemblies was not conducted. At the time of our review, the site and roofs were completely snow-covered; the accessed balconies were partially snow-covered. The superintendent's suite was not accessed.

3.2 Condition

The condition is described as:

- **Good** = Functioning as intended, normal deterioration observed.
- **Fair** = Minor deterioration and distress observed or deficient operation; some maintenance, repairs or replacement required to maintain functionality.

- **Poor** = Not functioning as intended, significant deterioration and distress observed; repairs or replacement required to restore functionality.

3.3 Further Study Required

We recommend further study to assign more accurate repair/replacement costs for the following components. In the absence of further investigation, we have provided contingencies for repairs based on our experience with similar buildings.

We recommend the following testing or inspections to better determine the condition of hidden components and assign more accurate remaining service life.

- The incoming electrical service replacement should be reviewed with the utility provider (Hydro Ottawa) soon. The condominium is currently provided with two services from Ottawa Hydro. The current Ottawa Hydro standard is to provide one service to a building. At time of replacement, the utility may force the condo to change to one service. This would require CCC 60 to redesign the building electrical distribution to accommodate one service and could greatly increase replacement costs.
- A code/life safety review study is recommended to be conducted before replacement of any major system throughout the building (electrical service, electrical distribution, emergency generator, fire alarm, etc.). This review study will help to ensure all applicable codes are being met and coordinate multiple system replacements to be compatible. This will prevent extra costs or add-on solutions at time of replacement.

4. FINANCIAL ANALYSIS

The Reserve Fund Study is generated based on the information shown in the Component Inventory Table, from CCC 60, and certain assumptions as discussed below.

4.1 Input from CCC 60

In calculating the Reserve Fund Cash-Flow Plan, we have used the following information provided by CCC 60:

- Current Fiscal Year 2015 from October 1, 2014 to September 30, 2015
- Annual Contribution (for Fiscal Year 2015) to the Reserve Fund (from the Form 15 and Startup Questionnaire) $113,266
- Reserve Fund Balance on September 30, 2014 (audited) $320,526
- Annual Contribution (for Fiscal Year 2016) to the Reserve Fund (provided by the Board of Directors) $163,266
- Reserve Fund Balance on September 30, 2015 (from draft financial statements) $503,982

4.2 Assumptions

4.2.1 Interest and Inflation Rates

The Government of Canada and the Bank of Canada inflation-control policy is aimed at keeping inflations at agreed to target values. At present the target range is 1.0 to 3.0 percent, with the Bank's monetary policy aimed at keeping inflation at the 2.0 percent target midpoint. This policy has continued to be renewed since implementation in 1991, and currently extends to December 31, 2016.

For the preparation of this Reserve Fund Study, we have assumed an Inflation Rate of 2.0 percent (midpoint of target range) and an Interest Rate of 3.0 percent for the duration of this study.

The interest earned on the Reserve Fund for each year is based on a **Mid-Year Interest Calculation**. It is our understanding from previous discussions with clients involved in long-term financial planning that this interest calculation is accepted for long-term financial planning. Over the 30 year period, the calculated interest is lower than calculating Simple Interest; therefore it is a more conservative method for calculating interest.

With the Mid-Year Interest Calculation, the interest earned on the Reserve Fund is calculated at the middle of the fiscal year assuming that half the

expenses have been taken out of the Reserve Fund and half the annual contribution has been deposited into the Reserve Fund. Therefore, Interest is calculated as follows:

$$Interest = Interest\ Rate \times \left(Starting\ Balance - \frac{Expenses}{2} + \frac{Annual\ Contribution}{2} \right)$$

These interest and inflation rates were presented to the current Board of Directors and approved and used in the final report.

4.2.2 Adequate Reserve Fund

The Act indicates that the Reserve Fund must be adequate to provide sufficient funds for the expected costs of major repair and replacement of the common elements and assets of the Corporation. However, "adequate" is not defined by the Act. We interpret adequate to be where the closing balance in every year of the 30-year period of the study is positive.

4.3 Cash-Flow Calculations

The Cash-Flow Calculations shown in the Detailed 30-Year Cash Flow Plan are discussed below. Each of the years shown in the Detailed 30-Year Cash Flow Plan represents the Fiscal Year of the Corporation as indicated in Section 4.1 above.

4.3.1 Starting Balance

The Starting Balance for this Reserve Fund Study has been shown in Section 4.1 above.

4.3.2 Total Expenses

The cost of each item in the Component Inventory Table is projected forward to the appropriate year, inflated annually as indicated in Section 4.2.1, and totaled.

The repairs and replacements we have forecasted in the Detailed 30-Year Cash Flow Plan do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated.

Review of the Tables reveals several projects that occur in a single year of the study period. These repairs and replacements may not all take place in one year, or be required at all; however, it is prudent to budget for such projects since failure of some components is unpredictable.

4.3.3 Annual Reserve Contribution

The Annual Reserve Contribution for the first year of this study is indicated in Section 4.1 above. Future annual contributions are calculated based on the

estimates of life expectancy and opinions of probable cost, minimum Reserve Fund balance, and the assumptions for inflation and interest.

4.3.4 Other Contribution

When large expenses are anticipated in the near future and the existing Reserve Fund Balance is relatively low, increases to the annual contribution may not be sufficient. Increasing the annual contribution to an amount that can accommodate the major expenses is typically not considered a suitable funding plan since the Reserve Fund Balance often becomes relatively high for the remainder of the study period. Excess funds in a Reserve Fund cannot be used for any other purpose except for the major repairs and replacements for which they have been budgeted.

In such cases, Other Contributions are considered in the Cash-Flow Plan. These contributions can be in the form of special assessments or surplus funds that the Board has indicated will be available from other sources (i.e. transferred from operating budgets or contingency funds).

4.4 Contribution Scenarios

The actual condominium Corporation's annual contributions to the Reserve Fund Account should be established by the Board of Directors. We recommend you review this Reserve Fund Study with your accountants to ensure it meets the needs of your Reserve Fund. Alternate funding strategies should be reviewed with your solicitor and/or accountant to determine if they meet the intent of the Act.

For condominiums registered before May 5, 2001*:* Subsection 94(8) of the 1998 Condominium Act and O. Reg. 48/01, s.33(2) indicates that the Board shall propose a funding plan for the Reserve Fund so that the Reserve Fund will be adequate within 15 years following the completion of the first Reserve Fund Study conducted after May 5, 2001. Hence, any increases to the Reserve Fund contributions above inflation must take place before the end of the fiscal year in which this date falls. At the next fiscal year and each year thereafter, the planned contribution can be increased by inflation only.

Below we summarize the current contribution and provide two possible funding scenarios for the reserve fund where the Reserve Fund Balance remains positive over the next thirty years.

4.4.1 Current Contribution

As a result of this study we have verified that there will not be sufficient funds available to meet the anticipated expenditures for the 30-year period addressed by this study at the current contribution rate, increased by 2.0 percent inflation only for the next thirty years. The Reserve Fund Balance becomes negative in the year 2017. This is shown in the Cash-Flow Table and Cash-Flow Chart of the **Current Contribution Plan** in **Appendix B**.

4.4.2 Scenario 1: Proposed Contribution 1

In Scenario 1 the increase to the annual contribution and lump sum contribution occurs in the next fiscal year in accordance with the Condominium Act, and future increases are by inflation only. The average per unit costs and increases for this funding plan are summarized below. The Cash-Flow Plan, Chart and Tables for **Scenario 1** are included in **Appendix C**.

CCC 60
Comprehensive Reserve Fund Study
Scenario 1 - Final - March 21, 2016

	2015	2016	2017	2018
Annual Reserve Contibution*	$113,266	$163,266	$166,531	$169,862
% Increase	n/a	44.1%	2.0%	2.0%
Average Increase per Unit per Month	n/a	$69.44	$4.54	$4.63
Average Annual Contribution per Unit per Month	$157.31	$226.76	$231.29	$235.92
Total Other Contributions**	$281,438	$2,200,000	n/a	n/a
Average Other Contribution per Unit per Month	$390.89	$3,055.56	n/a	n/a

* The term "Annual Reserve Contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

** The term "Total Other Contributions" refers to other contributed amounts including special assessments or surplus funds transferred from other sources (i.e. operating budget or contingency fund).

4.4.3 Scenario 2: Proposed Contribution 2

The Condominium Act is currently under review; recommendations for revisions to the Act have recently been published. One of the recommendations is to allow increases (above the rate of inflation) within three years of the date of the study. The recommendation states "that the year-over-year percentage change in total contributions to the reserve fund should be no greater than the assumed inflation rate used in the reserve fund study, except for the first three years when total contributions may be greater than the assumed rate". Although the proposed recommendations have not been adopted, we anticipate that this recommendation will be accepted.

In Scenario 2 the increase to the annual contribution and lump sum contributions occur over the next three fiscal years, as per the recommendations to the revisions to the Condominium Act, and future increases are by inflation only. The average per unit costs and increases for this funding plan are summarized below. The Cash-Flow Plan, Chart and Tables for **Scenario 2** are included in **Appendix D**.

CCC 60
Comprehensive Reserve Fund Study
Scenario 2 - Final - March 21, 2016

	2015	2016	2017	2018
Annual Reserve Contibution*	$113,266	$163,266	$186,123	$212,180
% Increase	n/a	44.1%	14.0%	14.0%
Average Increase per Unit per Month	n/a	$69.44	$31.75	$36.19
Average Annual Contribution per Unit per Month	$157.31	$226.76	$258.50	$294.70
Total Other Contributions**	$281,438	$660,000	$660,000	$660,000
Average Other Contribution per Unit per Month	$390.89	$916.67	$916.67	$916.67

* The term "Annual Reserve Contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

** The term "Total Other Contributions" refers to other contributed amounts including special assessments or surplus funds transferred from other sources (i.e. operating budget or contingency fund).

5. SUMMARY

Morrison Hershfield Limited has reviewed and assessed the reserve fund requirements of Carleton Condominium Corporation No. 60 (CCC 60) in accordance with the Scope of Services and Limitations outlined in Section 1 of this report.

In general, the common elements of CCC 60 are in fair condition. A detailed list of components and their condition is included in the Component Inventory Table of Appendix A of this report.

This Comprehensive Reserve Fund Study presents two possible funding strategies that will provide adequate funding to cover anticipated major repairs and replacements expected in the next 30 years. It has been developed based on the information provided to us by CCC 60 and our review of the site.

- In Scenario 1 – Proposed Contribution Plan 1, the current annual contribution of $113,266 is increased 44.1 percent (including 2.0 percent inflation) for fiscal year 2016 and then increased by inflation only from fiscal year 2017 onwards. A special assessments, of $2,200,000, is also required in fiscal year 2016. This is shown in the Tables for Scenario 1 in Appendix C of this report.

- In Scenario 2- Proposed Contribution Plan 2, the current annual contribution of $113,266 is increased 44.1 (including 2.0 percent inflation) for fiscal year 2016, increased 14.0 percent (including 2.0 percent inflation) for fiscal years 2017 and 2018 and then increased by inflation only from fiscal year 2019 onwards. Special assessments, of $660,000, are also required in fiscal years 2016, 2017 and 2018. This is shown in the Tables for Scenario 2 in Appendix D of this report.

If such funding is not achieved, future condominium owners can expect the need for additional special assessments to address major renewal activities.

The Reserve Fund Study is a dynamic document that will change over time as repairs/replacements are carried out on the common elements and interest/inflation rates change. The repairs and replacements we have forecasted in the Detailed 30-Year Cash Flow Plan do not represent a fixed schedule for replacements; repairs or replacements may be required sooner or later than we have anticipated. Similarly, the opinions of probable cost we have presented can vary due to a number of reasons including changing market conditions, availability of newer materials and systems, and increased or decreased scope of work than we have identified. As such, regular updates to this Reserve Fund Study are necessary to re-assess the needs of your condominium.

CCC 60 is required to complete a Reserve Fund Study Update without Site Inspection within three years of the date of this study, and a Reserve Fund Study Update with Site Inspection within three years of that study (as specified by O.Reg. 48/01, s. 31 (3)). This is the minimum requirement for conducting Reserve Fund Studies. However, the Board should consider an Update with Site Inspection if any significant changes in the condition of the common elements become apparent. Similarly, the Board should consider an Update without Site Inspection at an earlier date (prior to the three-year anniversary of this study) if there are any significant changes to the cash flow due to unforeseen conditions.

If you have any questions regarding the information contained herein, please contact the undersigned.

MORRISON HERSHFIELD LIMITED

Heather Penner, CET
Structure, Cladding, Interior & Site

Greg Hebb
Mechanical Systems

Jared Fleming
Electrical Systems

Shereen Rifaat, P.Eng.
Project Manager

APPENDIX A

Component Inventory Table

CCC 60
Final
March 21, 2016

Item No.	Component	Description	Observations	Condition
	Current Year Expenditures			
S1	Foundation	Based on the provided documentation, the foundation of the building consists of reinforced concrete walls and columns bearing on piles. At the rear of the building (east elevation), the basement extends beyond the footprint of the ground floor. The "roof" of this basement section is assumed to be protected with a waterproofing membrane; asphalt paved surface parking is situated above this portion of the basement.	No signs of structural distress of the foundation was observed; we noted cracking of the floor slab. In the eastern locker room, we noted that extensive epoxy repairs have been completed. It was reported that the repairs had been completed around six years ago and successfully addressed the water penetration. We were informed that repairs to the fitness room wall were completed in 2012 to address water penetration as well. The waterproofing membrane has exceeded the typical life expectancy and replacement in the short-term is recommended; delaying replacement of the membrane increases the risks of water penetration and deterioration of the concrete slab.	Fair
S2	Superstructure	The superstructure of the building consists of reinforced concrete walls, columns and slabs. The penthouse structure consists of reinforced concrete block masonry and open web steel joists.	No indications of structural distress were observed.	Good
S3a	Balconies - Assessment	Cantilevered concrete balconies are provided for the exclusive use of the owners on the residential floors.	We noted areas where patch repairs of the concrete have been completed; it is our understanding that repairs were completed in 1992. In a couple locations, we noted what appears to be spalled concrete at the underside of the balconies; these locations should be reviewed and repairs completed under the operating budget this spring. At the accessed units, we noted hairline cracking of the soffits; only one unit had water staining associated with the cracking.	Good
S3b	Balconies - Repairs			
S4	Balcony Railings	Balcony railings consist of concrete upstands with glazed aluminum railings anchored to the top of the upstands. Metal privacy screens (anchored to the balcony) divide some of the balconies.	At the rear elevation, we noted moss growth and discolouration of the concrete upstands of the railings. There is corrosion staining and discolouration of the metal balcony dividers.	Good
BE1	Masonry	The primary cladding material is brick masonry. According to the provided documentation, the wall assembly consists of a brick masonry veneer with a concrete block back-up wall.	On the east elevation, we noted that the weep holes have been filled with sealant. Based on the provided documentation, this was done to address water penetration. It was reported to us that water penetration is occurring at one unit and is assumed to be through the masonry and may be a result of the filled weep holes. Also to address water penetration, the upper floors of the building were overclad with metal siding. At one of the accessed units, we noted spalled bricks, deteriorated mortar and step cracking of the mortar. At the jut-outs of the east elevation the brick masonry is spalled and the mortar deteriorated.	Poor
BE2	Metal Panels - Windows	Corrugated metal panels are installed between the windows.	No damage or deficiencies were observed.	Good
BE3	Metal Panels - Sliding Doors	There are metal panels installed above the sliding doors. These panels were not replaced as part of the panel replacement project of 2014.	Discolouration of the panels was observed.	Good
BE4	Metal Siding - Upper Floors	Corrugated metal siding is installed at the top four floors of the building, overcladding the brick masonry. It is our understanding that the siding was installed as a means to address the water penetration through the masonry.	Localized areas of scratched or discoloured finish were noted.	Good

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	Current Year Expenditures		50 plus	1974	41	0	50	1	$79,862
S1	Foundation	Replace the waterproofing membrane of the basement extension, includes a contingency for concrete repairs. The replacement includes for replacement of the asphalt paving in this area and for resurfacing of the adjacent asphalt paved parking lot and drive lane.	30 - 40	1974	41	5	30	1	$129,000
S2	Superstructure	The superstructure is expected to last the life of the building; capital expenditures are not anticipated at this time.	50 plus	1974					
S3a	Balconies - Assessment	Complete a detailed assessment of the concrete balconies to determine the timing and scope of repairs required.	10 - 15	1974	41	2	15	1	$10,000
S3b	Balconies - Repairs	An allowance to complete repairs to the concrete balconies. Based on the results of the assessment (refer to item S3a), the timing and amount of this allowance may need to be adjusted.	50 plus	1974	41	5	15	1	$133,000
S4	Balcony Railings	Replace the aluminum and glass balcony railings and the metal balcony dividers; this work is to be completed in conjunction with repairs to the concrete balconies.	40 - 50	1992	23	35	40	1	$103,000
BE1	Masonry	An allowance to complete repairs to the brick masonry, includes for localized brick replacement and mortar repointing. Following the completion of our site review, CCC 60 has completed masonry repairs. It was reported to us that repairs to address the water penetration have been completed. We were informed that water penetration is not a systemic issue at the condominium and as such have reduced the allowance and frequency for brick masonry repairs. This approach should be reviewed and adjusted as required if future problems with water penetration occur. It is our understanding that the spalled brickwork has not been addressed and we recommend that repairs to the masonry be scheduled in the near-term.	50 plus	1974	41	2	14	1	$62,000
BE2	Metal Panels - Windows	Replace the metal panels, and associated trim and flashings, at the end of the reliable service life.	40 - 50	2014	1	39	40	1	$144,000
BE3	Metal Panels - Sliding Doors	Replace the metal panels above the sliding doors in conjunction with the replacement of the sliding doors; this has been included for with the sliding door replacement (refer to item BE9). Prior to replacement, CCC 60 may wish to refurbish the metal panels; we have included for cleaning and painting of the metal panels with the sealant replacement (refer to item BE7).	40 - 50	1974	41				
BE4	Metal Siding - Upper Floors	Replace the metal siding of the upper floors (and mechanical penthouse, roof access stairwell, and parking spot soffits) at the end of the reliable service life; includes a contingency for masonry repairs.	40 - 50	1986	29	31	40	1	$173,000

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Item No.	Component	Description	Observations	Condition
BE5	Metal Siding - Penthouse	Corrugated metal siding is installed at the mechanical penthouse and the roof access stairwell.	No damage or deficiencies were observed.	Good
BE6	Soffits & Canopy	Painted cement board soffits are installed at the front entrance and building overhangs at the north and east elevations. At the rear elevation, metal siding is installed at the soffits of the parking spaces (located below the building) and a vinyl canopy is installed above the rear entrance door.	At the north side of the building, we noted water staining of the soffit (overhang at stair exit doors). The finish is peeling at the main entrance soffit.	Fair
BE7	Exterior Sealant	Sealant is installed at the building between different cladding materials, control joints, and around windows, doors and other penetrations.	The sealant at the recently replaced windows, sliding doors and metal panels is in good condition. The sealant at control joints, between the metal siding and brick masonry, and at the panels above the sliding doors is in poor condition. This sealant is hard and cracked with several failures observed.	Poor
BE8	Windows	The windows are aluminum framed horizontal sliders consisting of two double-glazed sliders at the exterior, a screen, and two single-glazed sliders at the interior.	It was reported that owners complain about drafts at the windows; it is our understanding that the window installer is following up on a per unit basis. We noted that some of the sliders were not closed tightly; we did not experience any problems with operation. No reports of water penetration, condensation, or failed insulating glass units were reported to us.	Good
BE9	Sliding Doors	Aluminum framed, double-glazed sliding doors provide access to the balconies. The doors are provided with a sliding insect screen.	One unit reported problems with drafts below the sliding doors; there were no reports of water penetration. At a couple of units, the doors were stiff and difficult to operate.	Good
BE10	Entrance Doors	The front entrance door consists of a set of double swing doors; the doors are single-glazed, aluminum-framed. Aluminum framed windows flank the doors on either side. At the rear entrance, a single-glazed aluminum-framed swing door and sidelight are installed.	No problems with the front and rear entrance doors were reported to us. Surface scratches in the finish of the doors was observed. There is bleeding glazing tape at the exterior doors and associated windows. We noted damaged weatherstripping at the rear entrance door.	Fair
BE11	Power Door Operators	There are three power door operators installed at the building at the main entrance doors.	No problems with the door operators were experienced by us.	Good
BE12	Pool Doors	Exterior doors, with side windows, are installed at the pool. The doors and windows are aluminum-framed, double-glazed.	No problems with drafts, water penetration or operation were reported to us. Condensation on the framing of the windows and doors was observed; there are problems with addressing the humidity in the area of the pool. It was reported to us that the condensation worsened after replacement of the doors and that attempts to insulate the frames have been completed.	Good
BE13	Service Doors	Painted metal doors in painted metal frames provide access from the office, garbage room and stairwells to the exterior and provide access to the roof.	We did not experience any problems with operation. At the exit door from stairwell A, it appears that water penetration is occurring at the hinge side of the door. We also noted surface corrosion at the bottom of the frames.	Fair
R1	Roofs	The main, mechanical penthouse, and roof access stairwell roofs are protected with a modified bitumen roofing membrane. The roof is drained by area drains. Roof anchors are provided on the main roof level.	The majority of the roofs were snow-covered at the time of our review, a small portion of the main roof level was visible around the chiller. No problems with water penetration or leakage were reported to us; no indications of water penetration through the roof were observed at the interior.	Good
A1	Corridors - Residential	Carpeting is installed in the corridors of the residential floors. The corridors have painted walls and ceilings with a painted stipple finish. Wood trim accents and mirrors are provided at the elevators of the residential floors.	No damage or deficiencies were observed.	Good

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BE5	Metal Siding - Penthouse	The replacement of the siding at the mechanical penthouse and roof access stairwell has been included for with the replacement of the metal siding of the upper floors (refer to item BE4).	40 - 50	1974	41				
BE6	Soffits & Canopy	An allowance to repair and replace the cement board soffits as required; the finish of these soffits contains asbestos and appropriate remediation methods will need to be undertaken. It is our understanding that CCC 60 is repairing and refinishing the front entrance soffit and replacing the associated potlights this year. Replacement of the metal siding soffits (parking spaces) has been included for with the replacement of the metal siding of the upper floors (refer to item BE4). The rear entrance canopy can be replaced, as required, under the operating budget.	25 - 40	1974	41	0	15	1	$3,000
BE7	Exterior Sealant	An allowance to replace the exterior sealants; this work is to be completed in conjunction with masonry repairs.	10 - 20	1974	41	1	15	1	$59,000
BE8	Windows	Replace the windows at the end of the serviceable life. At the time of replacement, CCC 60 may wish to review different window configurations to reduce drafts. At the request of CCC 60, the timing of replacement of the windows (and sliding doors) has been adjusted. CCC 60 should be aware that drafts, problems with operation, reduced thermal performance and required repairs will increase as the windows (and sliding doors) near the end of the typical service life.	30 - 40	2008	7	31	30	2	$463,000
BE9	Sliding Doors	Replace the sliding doors (and associated metal panels) at the end of the reliable service life.	30 - 40	2008	7	31	30	2	$176,000
BE10	Entrance Doors	Replace the exterior doors and associated glazing at the front and rear entrances.	30 - 40	1974	41	5	30	1	$17,000
BE11	Power Door Operators	Replace the power door operators at the end of the reliable service life.	15 - 20	2013	2	18	20	1	$7,000
BE12	Pool Doors	Replace the exterior doors and associated glazing at the pool. It is recommended that the humidity problems at the pool be further investigated (refer to item M16b); dependent upon the results of that investigation, the timing for replacement of the doors may need to be adjusted.	30 - 40	2009	6	19	30	1	$6,000
BE13	Service Doors	The service doors can be replaced (on an as-needed basis) under the operating budget. Cleaning and painting of the doors and frames should be completed as part of regular maintenance.	35 - 45	1974	41				
R1	Roofs	Replace the modified bitumen roofs (main, penthouse and roof access stairwell) at the end of the reliable service life.	20 - 25	1991	24	5	25	1	$74,000
A1	Corridors - Residential	Replace the carpet of the corridors (and the ground floor lounge). Paint the corridor walls and ceilings of the residential floor corridors (and ground floor corridors and lobby); includes for painting of doors and frames.	10 - 15	2012	3	10	15	1	$27,000

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A2	Stairwells	There are two stairwells in the building which provide access to all floors. The stairs are metal pan stairs with concrete treads and cast-in-place concrete landings. The stairwells are painted concrete or painted concrete block; painted metal railings are provided at the interior of the stairs.	The painted finish is worn on the landings and at some of the treads of the lower flights of the stairs. The last time that the stairwells was painted is unknown but based on condition is estimated to be within the last 10 to 15 years.	Good
A3	Ground Floor Corridor	Ceramic tile flooring is installed at the ground floor corridor. The corridor walls are painted and the ceiling has a painted stipple finish.	By the guest suites the tile is loose and there is grout deterioration; repairs should be completed as part of maintenance. In general, we noted some areas of grout discolouration in the corridor.	Good
A4	Lobby	The ground floor lobby includes the front entrance vestibule, adjacent lounge and mailroom. Finishes include painted walls and ceilings, brick walls, stained wood accent walls and carpet or ceramic tile flooring. Furnishings include couches and tables.	It was reported that a portion of the lounge ceiling was repaired due to water damage from piping. We noted that the mailboxes are dented; it was reported that there is difficulty with the locks and frequent repairs are required.	Good
A5	Basement & Garage Corridors	The basement and garage corridors are painted concrete and painted concrete block. Vinyl tile flooring is installed in the basement corridor.	Areas of peeling paint were observed in the garage corridors. In general, the corridors appear worn with chips and scuffs in the painted finish.	Fair
A6	Guest Suites	The finishes in the guest rooms includes painted walls and ceilings (completed two years ago), carpet (replaced this year) and ceramic tile in the washrooms (original). Furnishings include vanity, beds and tables.	The furnishings are in good condition but appear dated. The bathroom mirrors are peeling and we noted some grout discolouration.	Good
A7	Superintendent's Suite	A suite for the superintendent is provided on the ground floor of the building.	The superintendent's suite was not reviewed. It was reported that new carpet, tile, cabinets and appliances were installed around 10 years ago. It is our understanding that although in good condition, the finishes are becoming worn and showing signs of age.	Good
A8	Party & Board Rooms	The finishes in the party and board room include vinyl tile flooring and painted walls and ceilings. Ceramic tile flooring is installed in the washroom; a vanity cupboard is provided (installed around 12 to 15 years ago). In the party room, there is a small kitchen; the cupboards and counters were installed around five years ago. Kitchen appliances are provided for the use of the residents and there are various furnishings in the rooms including tables and chairs.	We noted that one of the vinyl tiles is chipped. Repairs to the ceiling in the party room have been completed to address water staining from piping.	Good
A9	Laundry Room	The finishes in the laundry room include painted drywall walls and ceiling and vinyl tile flooring. Cupboards with a melamine counter are provided at the sink. Two washers and two dryers are provided for the use of the residents.	Cracked floor tiles are observed around the drain. It was reported to us that the washers and dryers were recently replaced.	Good
A10	Fitness Room	The finishes in the fitness room include rubber floor tile and painted drywall. Various pieces of exercise equipment are provided for the use of the residents.	No damage or deficiencies were observed. Exercise equipment was replaced or recovered in 2012; the flooring was installed in 2014.	Good
A11a	Pool - Tank	Based on the provided documentation the concrete pool tank is marmonite finished with epoxy. The tank was repaired and refinished in 2004 including sandblasting, routing cracks and sealing.	No problems with the pool tank were reported to us; we did not observe any deficiencies.	Good

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A2	Stairwells	An allowance to paint the stairwells (treads, landings, stairs, railings and walls).	15 - 20	2004	11	10	24	1	$12,000
A3	Ground Floor Corridor	An allowance to replace the ceramic tile flooring of the ground floor corridor and lobby. Painting of the corridor has been included for with painting of the residential corridors (refer to item A1).	40 - 60	1974	41	10	40	1	$12,000
A4	Lobby	An allowance to replace the mail boxes. Refinishing of the lobby including tile replacement, carpet replacement and painting and staining of walls and ceilings has been included for with the corridors (refer to item A1).	30 plus	1974	41	1	35	1	$3,000
A5	Basement & Garage Corridors	An allowance to paint the basement corridor and the corridors which access the garage. Replacement of the vinyl tile flooring in the basement corridor has been included for with the replacement of the flooring of the garbage chute rooms (refer to item A14).	15 - 20	1973	42	4	30	1	$9,000
A6	Guest Suites	An allowance to refurbish the guest suites. The allowance could be used for replacement of furnishings, flooring and wall tile and for painting. We recommend that at the first occurrence of this allowance that the bathroom finishes be replaced.	5 - 10	1974	41	10	10	1	$6,000
A7	Superintendent's Suite	An allowance to refurbish the superintendent's suite; includes for painting, replacement of flooring and replacement of permanent furnishings. Following the completion of our review, it was reported that the flooring throughout the suite was replaced and the suite painted (and that the work was completed in house). CCC 60 can continue to replace the flooring and paint the suite (as required) between refurbishments under the operating budget.	20 - 30	2015	0	20	30	1	$20,000
A8	Party & Board Rooms	An allowance to refurbish the party and board rooms. The allowance could be used for replacement of furnishings, appliances, flooring and cupboards and for painting. We recommend that at the first occurrence of this allowance that the vinyl tile flooring be replaced.	15 - 20	1974	41	10	20	1	$7,000
A9	Laundry Room	An allowance to replace the flooring and paint; includes for replacement of the washers and dryers and cupboard.	5 - 10	1974	41	10	10	1	$9,000
A10	Fitness Room	An allowance to replace the flooring and paint; includes for replacement of the exercise equipment. Between allowances, localize repairs to the flooring and replacement of equipment can be completed under the operating budget.	15 - 20	2014	1	14	20	1	$14,000
A11a	Pool - Tank	An allowance to refinish and repair the pool tank as required.	15 - 20	2004	11	9	20	1	$21,000

Item No.	Component	Description	Observations	Condition
A12b	Pool - Deck	Ceramic tile is installed at the pool nosing and deck. Ceramic tile is also installed at the columns.	Repairs to the tile have been completed; we were informed that the tiles at the columns was replaced around four years ago. At the pool deck, the finish of the tile is worn away resulting in tile discolouration around the edges of the pool and in high traffic areas.	Good
A11c	Pool - Paint	The walls and ceilings of the pool area are painted drywall.	It was reported that there has been an on-going issue with humidity in the pool (a recommendation to investigate this condition has been included under item M16b). We noted areas of peeling paint and water damaged drywall at the walls and ceilings (primarily at corners). At the cove ceiling above the pool, there is discolouration which may be mould growth. In the vicinity of the exterior glazed doors, corrosion of the metal studs is visible.	Poor
A12b	Change Rooms	The finishes in the change rooms consist of painted drywall and painted concrete block and ceramic tile flooring (wall tile is installed in the showers). Vanity cupboards and counters are provided at the sink.	It was reported that the change rooms were painted approximately 15 years ago; we noted localized areas of peeling wall paint. Some grout discolouration was observed; sections of tile have been replaced.	Good
A13	Saunas	In the men's and women's change rooms, cedar lined dry saunas are provided. The saunas are heated by an electric heater.	Localized water staining of the cedar walls was noted in the men's sauna.	Good
A14	Garbage Chute Rooms	Garbage chute rooms are provided on the residential floors. The finishes in the garbage chute rooms are painted drywall walls and ceilings with vinyl flooring.	No deterioration was observed, the vinyl flooring appears worn and dated.	Good
A15	Service & Storage Rooms	The finishes in the service and storage rooms consists of painted concrete or painted concrete block floors, walls and ceilings.	We noted localized repairs have been completed to the ceiling of the east locker room. There are areas of worn paint on the floors.	Good
A16	Interior Doors	The suite entry doors are painted wood doors in painted metal frames with stained wood thresholds. The doors to the common rooms, service rooms, and stairwells are painted metal doors in painted metal frames.	We noted areas of chipped paint. We did not experience any problems with operation.	Good
PG1	Parking Garage - Structure	The parking garage is located to the south of the building; the garage is accessed from the building via corridors in the basement. The structure of the garage consists of reinforced concrete slabs, columns, walls and footings. The parking garage is a split-level garage consisting of four parking levels.	The base of the columns are salt-stained. At the lower levels of the garage, the concrete slab is pitted in the drive lanes; we noted some water ponding adjacent to the drains. There is cracking of the slab; some of the cracks have been routed and sealed. No signs of structural distress were noted. It was reported that there have been previous water penetration through the walls which were successfully addressed with epoxy repairs around eight years ago. We noted areas of wall cracking with efflorescence and corrosion staining. There is an active leak by the south exit door.	Fair
PG2	Podium Deck	The "roof" or podium deck of the parking garage is protected with a waterproofing membrane. The provided documentation indicates that this system consists of topsoil, crushed stone, rigid insulation, protection board and hot rubberized membrane.	We noted efflorescence and water staining at the joint between the two levels of the garage; it was reported that the waterproofing membrane at this joint (between garage wall and roof at the step down between levels) was replaced in 2013. We did not observe any signs of current water penetration through the podium deck; no problems with the deck were reported. to us. Cut tests were completed in 2012 and reportedly the membrane was well bonded and had retained its elastic properties. The waterproofing membrane has exceeded the typical life expectancy, the recommended timing for replacement has been adjusted based on the extensive repairs completed in 2013 and the assessment documentation provided. Delaying replacement of the waterproofing membrane increases the risks of water penetration and deterioration of the concrete slab.	Good

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A12b	Pool - Deck	An allowance to replace the ceramic tile of the pool deck and columns; includes for replacement of the ceramic tile of the change rooms. It is recommended that this work be coordinated with repairs to the pool tank.	40 - 60	1974	41	9	45	1	$25,000
A11c	Pool - Paint	Paint the pool walls and ceilings; includes an allowance for localized drywall repairs and associated asbestos abatement. We have assumed that Type II abatement will be feasible. This work should be completed in conjunction with the recommended solution from the humidity investigation (refer to item M16b).	10 - 15	2004	11	1	15	1	$14,000
A12b	Change Rooms	Replacement of the tile has been included for with the replacement of the pool deck tile (refer to A11b). Painting can be completed under the operating budget. Replacement of the vanity has been included for with replacement of the plumbing fixtures (refer to item M22).	15 - 30	1974	41				
A13	Saunas	Repairs to the saunas, including localized replacement of cedar and of the electric heaters (and associated controls), can be completed under the operating budget. Complete replacement of the cedar is not anticipated at this time.	30 plus	1974	41				
A14	Garbage Chute Rooms	An allowance to replace the vinyl tile flooring in the garbage chute rooms and the basement corridor. Painting of the garage chute rooms has been included for with the painting of the residential corridors (refer to item A1).	30 - 50	2012	3	37	40	1	$6,000
A15	Service & Storage Rooms	Painting and repairs to the service and storage rooms, as required, can be completed under the operating budget.	30 plus	1974	41				
A16	Interior Doors	Repairs to the interior doors, including localized replacements, can be completed under the operating budget. Painting of the doors and frames has been included with the painting of the corridors and stairwells.	50 plus	1974	41				
PG1	Parking Garage - Structure	An allowance to investigate the source of the water penetration occurring at the south exit door and to complete repairs. We have assumed that localized epoxy repairs will be sufficient to address the water penetration; dependent upon the results of the investigation, additional funds may be required.	50 plus	1974	41	2	50	1	$5,000
PG2	Podium Deck	Replace the podium deck waterproofing membrane at the end of the reliable service life; includes an allowance for concrete repairs and for replacement of the landscaping components situated above the podium.	30 - 40	1974	41	5	30	1	$448,000

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PG3a	Suspended Slab - Repairs	The two upper levels of the parking garage (and associated ramps) are suspended slabs protected with a waterproofing membrane. Based on the provided documentation, the mastic asphalt waterproofing membrane was installed sometime between 1993 and 1998.	Numerous membrane patch repairs and soffit repairs have been completed. At several of the patch repairs, there is efflorescence and corrosion staining adjacent to or through the repaired areas. No problems with current water penetration through the suspended slabs was reported to us. In a couple of locations, we noted delaminated concrete at the soffit. Generally, the slope of the slabs appears to be towards the drain. We noted delaminated membrane around the drains and areas of peeling and worn membrane (primarily in the drive lanes).	Fair
PG3b	Suspended Slab - Replace			
PG4	Overhead Doors	Two sectional overhead doors provide entry to and exit from the parking garage.	No problems with the overhead doors were reported to us; we did not experience any problems with operation. We noted that two panels of one of the doors are damaged. It was reported that maintenance is completed annually on the doors and that panels are replaced as required.	Good
L1	Asphalt Paving	At the north end of the building, an asphalt paved drive lane provides access (from Chapel Street) to the rear parking lot. There is also an asphalt paved driveway which provides access to the garage (from Osgoode Street).	The drive lane and the rear parking lot were snow-covered at the time of our review. At the garage driveway, the surface of the asphalt paving is raveled and some transverse cracking was noted.	Good
L2a	Retaining Wall - Assessment	A cast-in-place concrete retaining wall is located along the east and south sides of the rear parking lot.	Due to the amount of snow on the site and pushed against the retaining wall, our review of the retaining wall was limited. It appears that the retaining wall is rotating outward at the top at the southeast corner, this is consistent with the provided documentation. Steel beams have been installed to address the displacement, it is our understanding that this has slowed but not stopped the displacement. At the corner of the wall (viewed from the parking lot side), we noted large cracks in the concrete, some delaminated concrete, and a gap where the two walls meet. On the other side of the wall, there is surface deterioration, horizontal cracking at the corner and localized areas of concrete delamination.	Fair
L2b	Retaining Wall - Repairs			
L3	Interlocking	An interlocking walkway is provided at the main entrance of the building. It is our understanding that there is also a section of interlocking located to the south of the building.	No deterioration or unevenness of the interlocking was observed; the interlocking at the main entrance was partially snow-covered during our visit. The interlocking at the south side of the building was snow-covered at the time of our visit and could not be reviewed.	Good
L4	Stairs	Concrete stairs provide access to the pedestrian area located to the south of the building.	The exterior stairs were snow-covered at the time of our review, no problems with the stairs were reported to us.	Good
L5	Landscaping	The soft landscaping includes the trees, shrubs, plantings and grass and adequate grading away from the building for drainage.	The site was snow-covered at the time of our review, no problems with the landscaping were reported to us.	Good
M1	Boilers - New	There are two KN Series natural gas condensing boilers that provide heating water for the building. One has an input rating of 600 MBH, the other has an input rating of 1,000 MBH.	The boilers were recently installed. No deficiencies were reported or observed.	Good

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PG3a	Suspended Slab - Repairs	An allowance for repairs to the waterproofing membrane (and concrete) between suspended slab replacements.	15 - 30	1993	22	15	30	1	$42,000
PG3b	Suspended Slab - Replace	Replace the waterproofing membrane of the suspended slabs; includes an allowance for concrete repairs. Following the completion of our site visit, we were informed that instead of proceeding with membrane and concrete repairs in the current fiscal year (PG3b) that the entire suspended slab waterproofing membrane was replaced (the amount of this project was provided by CCC 60).	30 - 40	1993	22	0	30	1	$182,000
PG4	Overhead Doors	Replace the overhead doors at the end of the reliable service life. CCC 60 has informed us that they will replace the overhead doors (as required) under the operating budget. The realized service life of an overhead door is dependent upon the levels of use and maintenance received.	15 - 25	2005	10				
L1	Asphalt Paving	Resurfacing of the asphalt paved drive lane and surface parking has been included for with the replacement of the waterproofing membrane of the basement (refer to item S1). Replacement of the asphalt paving of the driveway to the parking garage has been included for with the replacement of the podium deck (refer to item PG1).	30 - 40	1974	41				
L2a	Retaining Wall - Assessment	An allowance for a structural review of the retaining wall including geotechnical consultation.	50 plus	1974	41	2	30	1	$8,000
L2b	Retaining Wall - Repairs	An allowance for repairs to the retaining wall. Dependent upon the results of the structural review (refer to item L2a), the amount and timing of the allowance for repairs may need to be adjusted. If feasible, it is recommended that the repairs be completed in conjunction with the replacement of the waterproofing membrane of the basement (refer to item S1).	50 plus	1974	41	6	30	1	$77,000
L3	Interlocking	An allowance for repairs to the interlocking; includes for leveling and localized replacements. The interlocking at the south of the building will be replaced with the podium deck (refer to item PG1); complete replacement of the interlocking at the main entrance is not anticipated at this time.	40 - 60	1974	41	15	10	1	$4,000
L4	Stairs	Repairs to the stairs (if required) should be completed (and have been included for) with the podium deck replacement (refer to item PG2).	30 - 40	1974	41				
L5	Landscaping	The majority of the site landscaping is located above the podium deck and will be replaced with the podium deck membrane (refer to item PG2). Capital expenditures to the remaining soft landscaping is not anticipated at this time.	50 plus	1974	41				
M1	Boilers - New	Replace the boilers at the end of their expected service lives.	30 - 35	2012	3	32	30	1	$147,000

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M2	Boiler - Older	An RBI natural gas boiler provides back-up heat if required. It has an input capacity of 2,100 MBH.	The boiler was reported to be used seldom since the installation of the two new condensing boilers. Some corrosion was noted on the exterior casing of the boiler. The interior of the boiler was not inspected. No deficiencies were reported by building operating staff.	Fair
M3	Chiller	A Carrier air cooled scroll chiller located on the roof provides chilled water for the building. The chiller has a capacity of 33 tons.	The chiller was recently installed. No deficiencies were reported or observed.	Good
M4a	Main Circulating Pumps - New	Heating and cooling water is circulated throughout the building by two horizontal base mount circulating pumps. One pump has a 7.5 HP motor, a capacity of 470 GPM. The other has a 10 HP motor. The pumps appear to operate in a lead/lag configuration, with the new pump acting as the lead pump.	Some corrosion was observed on the casing of the new pump. No operational deficiencies were reported or observed.	Good
M4b	Main Circulating Pumps - Original		Corrosion was observed on the pump casing and flanges. The pump has surpassed its expected service life.	Poor
M5	Perimeter Heating Pump	Heating water for the perimeter systems is circulated by an Armstrong horizontal base mount circulating pump. The pump appears to have a one HP motor and a capacity of 80 GPM.	Some corrosion was observed on the casing of the pump. No operational deficiencies were reported or observed.	Good
M6	AHU Heating Pump	Heating water for the makeup air unit is circulated by an Armstrong horizontal base mount circulating pump. The pump appears to have a one HP motor and a capacity of 80 GPM.	Some corrosion was observed on the casing of the pump. No operational deficiencies were reported or observed.	Good
M7	Boiler Pumps	Heating water produced by the boilers is injected into the heating system by three fractional horsepower circulating pumps.	No deficiencies were reported or observed.	Good
M8	DHW Heating Pump	Heating water for the domestic hot water system is circulated by an Armstrong pipe mount circulating pump. The pump has a 1.5 HP motor and a capacity of 80 GPM. The pump is controlled by a VFD.	Some corrosion was observed on the casing of the pump. No operational deficiencies were reported or observed.	Good
M9a	Force Flow Heaters - Front Vestibule	There are four force flow heaters that provide heat for the entrance vestibules and the stairwells on the ground floor.	No deficiencies were reported or observed.	Good
M9b	Force Flow Heaters - Rear Vestibule and Stairs			Good
M10	Hydronic Convectors (Baseboard Heaters)	The building corridors, lobbies, pool area and change rooms are provided with hydronic convectors for heating, controlled by zone valves and thermostats.	No deficiencies were reported. Regular wear and tear was observed.	Good
M11	Garage Unit Heaters	The parking garage is heated by two vertical Mark Hot hydronic unit heaters. The unit heaters are thermostatically controlled.	Corrosion was observed on the unit casing, pipe connections, and piping. No operational deficiencies were reported.	Fair

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M2	Boiler - Older	It was reported to us that this boiler is not required for redundancy (to ensure sufficient capacity if one of the new boilers failed); replacement of this boiler has not been included for in the reserve fund.	30 - 35	2003	12				
M3	Chiller	Replace the chiller at the end of its expected service life.	25 - 30	2011	4	26	25	1	$85,000
M4a	Main Circulating Pumps - New	Replace the new circulating pump at the end of its expected service life.	30 - 35	2010	5	27	30	1	$8,000
M4b	Main Circulating Pumps - Original	Replace the circulating pump prior to an unexpected failure.	30 - 35	1973	42	1	30	1	$8,000
M5	Perimeter Heating Pump	Replace the circulating pump at the end of its expected service life.	30 - 35	2010	5	27	30	1	$8,000
M6	AHU Heating Pump	Replace the circulating pump at the end of its expected service life.	30 - 35	2010	5	27	30	1	$8,000
M7	Boiler Pumps	Replace the boiler circulators at the end of their expected service lives; this can be completed under the operating budget.	10 - 15	2013	2				
M8	DHW Heating Pump	Replace the circulating pump at the end of its expected service life.	20 - 25	2010	5	17	25	1	$6,000
M9a	Force Flow Heaters - Front Vestibule	Replace the force flow heater at the end of its expected service life.	20 - 25	2010	5	17	25	1	$6,000
M9b	Force Flow Heaters - Rear Vestibule and Stairs	The force flow heaters have surpassed their expected service lives.	20 - 25	1974	41	5	25	1	$6,000
M10	Hydronic Convectors (Baseboard Heaters)	Replace the hydronic convectors at the end of their expected service lives.	45 - 50	1973	42	8	45	1	$6,000
M11	Garage Unit Heaters	Replace the unit heaters as they have surpassed their expected service lives.	20 - 25	1974	41	3	30	1	$6,000

Item No.	Component	Description	Observations	Condition
M12	Fan Coil Units - Refurbish	The condo units, party room, guest suites, board room, and lobby are heated and cooled by fan coil units (FCUs). The majority of FCUs in the building are vertical with integral pipe risers. FCUs serving the guest suites and lobby are horizontal type mounted in the ceiling.	Leaks were reported by building occupants and maintenance staff. Signs of staining were observed at the bottom of one riser. The condensate drain pans occasionally overflow in the cooling season. Corrosion was observed on fan coil unit drain pans. The drain pan drain lines may be clogged with debris and corrosion.	Poor
M13a (1)	Hydronic Piping - Engineering	Heating and cooling of the building is accomplished using a dual temperature changeover system. The system consists of steel piping with welded and threaded joints. Piping is insulated with mineral wool with a canvas jacket. Riser piping was reported to be original to the building construction. Although portions of piping in the penthouse have been upgraded with the boilers and chiller, the bulk of penthouse piping remains original to the building construction.	Where exposed, corrosion was observed on piping, joints, and fittings. Staining was observed on insulation jackets in many locations. Exterior pipe corrosion can be accelerated due to the operating conditions of a dual temperature system. Staining was observed on the ceiling of the first floor, repairs to areas of the first floor ceiling had been completed due to water staining from piping, and leaks were reported by building occupants.	Fair
M13a (2)	Hydronic Piping - Replace			
M13b	Pipe Test			
M13c	Hydronic Piping - Penthouse			
M14	Makeup Air Unit (MAU)	Outdoor air is provided to the building by a Buffalo makeup air unit located in the penthouse. The MAU is equipped with a heating coil, a cooling coil, and a 7.5 HP supply fan. The fan is controlled by a variable frequency drive (VFD).	The interior of the MAU could not be observed. Corrosion was observed on the casing of the unit. The MAU was reported to receive regular maintenance, and there was evidence of parts being upgraded (i.e. vibration isolation mounts). It should also be noted that there is a concern of the coil freezing in the event that the circulating pump or the control valve fails.	Fair
M15	Main Exhaust Fan	Suite washrooms are exhausted by a Delhi cabinet exhaust fan located in the penthouse. It has a capacity of approximately 6,000 cfm and is controlled by a VFD.	The fan nameplate could not be observed due to its high location. Some corrosion was observed on the unit casing. No operational deficiencies were reported.	Fair
M16a	Pool Fan Coil Unit - Replace	The pool area is provided with 100% outdoor air by a fan coil unit located on the ground floor. The fan coil unit is equipped with a hot water heating coil, and supply fan. The fan was reported to operate 24/7, and supply air temperature is controlled by a mixing valve on the water supply.	The fan coil unit has surpassed its expected service life. Corrosion was observed on the unit casing, and the fan was quite noisy. It was reported to be undersized by the maintenance contractor. It should also be noted that there is a concern of the coil freezing in the event that the circulating pump or the control valve fails.	Poor
M16b	Pool Fan Coil Unit - Study		High levels of humidity were reported and observed in the pool area.	Poor

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M12	Fan Coil Units - Refurbish	In the short term, we recommend limited refurbishment and minor repairs of the suite fan coil units under the operating budget. Refurbishing should include cleaning and sealing the drain pans, replacing the drain hoses, and general cleaning of the units and casing.	20 - 25	1973	42				
M13a (1)	Hydronic Piping - Engineering	Replace the hydronic riser and ground floor distribution piping. The risers are integrated with the fan coil units serving the suites, which requires their coordinated replacement. We recommend completing this work in two phases: A1) Engineering Design, and A2) Piping/FCU Replacement. Under Phase A1 we recommend making an allowance to complete the associated design and engineering required for the hydronic piping and fan coil unit replacement project prior to the commencement of the replacement work.	30 - 35	1974	41	4	30	1	$180,000
M13a (2)	Hydronic Piping - Replace	Under Phase A2 we recommend replacement of the hydronic piping and fan coil units. Include for replacement of risers as well as distribution piping, insulation, and drywall repairs. An allowance has been included for asbestos abatement. The timing of replacement has been adjusted, based on the results of the testing (Item M13b). Replacement of the heating/cooling risers must include replacement of the fan coil units as they are integral.	30 - 35	1974	41	5	30	2	$1,320,000
M13b	Pipe Test	We recommend metallurgical testing of the heating/chilled water, domestic hot and cold water, domestic water entry, standpipe, sprinkler, and drainage piping to determine the current condition and remaining service life of the piping. Engage the services of a metallurgical inspection company and a mechanical consulting engineer to oversee the process and interpret results.	-	2015	0	30	30	1	$7,000
M13c	Hydronic Piping - Penthouse	Replace the steel heating and cooling piping in the penthouse.	30 - 35	1974	41	25	30	4	$85,000
M14	Makeup Air Unit (MAU)	The MAU has surpassed its expected service life. Replace it prior to an unexpected failure.	30 - 35	1974	41	3	30	1	$42,000
M15	Main Exhaust Fan	Replace the exhaust fan at the end of its expected service life.	25 - 30	2000	15	12	25	1	$6,000
M16a	Pool Fan Coil Unit - Replace	Replace the fan coil unit prior to an unexpected failure.	30 - 40	1973	42	0	35	1	$10,000
M16b	Pool Fan Coil Unit - Study	We recommend completing a study to investigate the cause of the high humidity and recommend a solution. The cost for this study has been included for under the current expenditures line item.	-	-	-				

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M17	Pool Exhaust Fan	The pool area is served by a Delhi cabinet exhaust fan. The fan was reported to be original to the building construction, and the motor replaced within the past year. The fan was reported to operate 24/7.	No deficiencies were reported or observed.	Good
M18	Vault Fan - Replace	The electrical vault is served by a Delhi cabinet exhaust fan located in the adjacent storage room.	The nameplate data was not visible. The fan was reported to run 24/7. The belt drive is open and accessible. This may pose a safety risk.	Fair
M19	Garage Exhaust Fan	The garage is served by a propeller fan located on the podium deck.	The fan itself could not be observed. The grille was damaged. No operational deficiencies were reported.	Fair
M20	Misc. Fans	There are two cabinet fans serving the basement of the building. One serving the storage rooms, the other exhausting the laundry dryers.	No deficiencies were reported or observed.	Good
M21	DHW Tank	Domestic hot water (DHW) is produced and stored in two 119 Gal Thermo 2000 domestic hot water tanks. Water is heated by integral indirect water heaters.	The tanks appeared to have been installed within the past 10 years. No deficiencies were reported or observed.	Good
M22	Plumbing Fixtures & Trim	Common element plumbing fixtures are located in the guest suites, change rooms, party room, laundry room and pool area. In total the building contains approximately two vitreous china lavatories with manual faucets; three enameled steel lavatories with manual faucets; five tank-type water closets; four showers; two stainless steel sinks with manual faucets; and one vitreous china drinking fountain. The fixtures and trim were reported to be original to the building construction.	No deficiencies were reported or observed.	Good
M23a	Domestic Water Entry - Replace	The building is served by a six inch ductile iron domestic water service. The service splits to serve the standpipe system and is metered to serve the domestic water system. The water service is insulated with mineral wool with a canvas jacket.	It was unclear whether the domestic water system is separated from both the municipal supply or the fire protection system. It was unclear how the domestic water is configured. Building staff were unable to explain how the system was set up. It is unclear whether the full amount of water used is metered, as well as whether the system is separated from the municipal supply and/or the fire protection system by backflow preventers. Some	Fair
M23b	Domestic Water Entry - Repair			
M24a	Domestic Water Piping - Reline	Domestic hot, cold, and recirculation piping was observed to be copper with soldered joints. The piping is insulated with mineral wool and has a canvas jacket.	A program of replacing riser isolating valves was reported by building occupants. Some staining was observed on insulation in some places. No leaks were reported by building staff.	Fair
M24b	Domestic Water Piping - Replace			
M25a	Waste Piping - Sanitary	The sanitary drainage system appears to be cast iron construction with mechanical joints. Sanitary drainage appears to be original to the building construction.	No deficiencies were reported or observed.	Good

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M17	Pool Exhaust Fan	Replace the exhaust fan at the end of its expected service life.	25 - 30	2013	2	25	25	1	$3,000
M18	Vault Fan - Replace	Replace the vault fan at the end of its expected service life. We recommend installing a guard on the fan belt drive; this can be completed under the operating budget.	25 - 30	1998	17	10	25	1	$3,000
M19	Garage Exhaust Fan	Replace the exhaust fan as it has surpassed its expected service life. There is an opportunity to save on operating costs by installing a CO detection system.	15 - 20	1973	42	2	20	1	$8,000
M20	Misc. Fans	Replace the fans as they fail; this can be completed under the operating budget.	25 - 30	1974	41				
M21	DHW Tank	Replace the DHW tanks including indirect water heaters at the end of their expected service lives.	20 - 25	2005	10	12	25	1	$17,000
M22	Plumbing Fixtures & Trim	CCC 60 informed us that they will replace the common plumbing fixtures and trim at the end of their expected service lives under the operating budget. It is recommended that, where feasible, this work be coordinated with upgrades to finishes.	30 - 40	1973	42				
M23a	Domestic Water Entry - Replace	Replace the domestic water entry at the end of its expected service life. The timing of replacement should be adjusted, based on the results of the testing (Item M13b).	40 - 50	1973	42	5	40	1	$15,000
M23b	Domestic Water Entry - Repair	We recommend making repairs to the pipe insulation and jacket in order to extend the usable life of the domestic water entry; this can be completed under the operating budget.							
M24a	Domestic Water Piping - Reline	Reline the domestic water distribution with an epoxy coating.	40 - 50	1973	42	9	100	1	$447,000
M24b	Domestic Water Piping - Replace	Replace the domestic water piping at the end of its expected service life. The timing of replacement should be adjusted, based on the results of the testing (Item M13b). Note that the life expectancy will be increased by completing the pipe relining (Item M24a). An allowance has been included for asbestos abatement.	40 - 50	1973	42	33	40	4	$1,693,000
M25a	Waste Piping - Sanitary	A contingency to complete repairs to the sanitary drain piping and storm drain piping; an allowance has been included for asbestos abatement.	40 - 50	1973	42	15	5	1	$36,000

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M25b	Waste Piping - Sanitary - Garage Drains	Water in the garage area is drained by eight cast iron floor drains cast into the concrete.	Corrosion was observed on drain bodies. This can reduce the life of the drain bodies and downstream piping.	Poor
M25c	Waste - Storm	The storm drainage system appears to be cast iron construction with mechanical joints. Storm drainage appears to be original to the building construction.	No deficiencies were reported or observed.	Good
M26	Domestic Water Booster Pump	Domestic water pressure is boosted by an Armstrong Duplex domestic water booster package. The package consists of a pair of five HP pumps and a controller.	No deficiencies were reported or observed.	Good
M27	Sump Pumps - Replacement	Water drained from the garage is collected in sumps on the lowest parking level. Water is pumped into the sanitary system by two submersible sump pumps. The pumps operate in a lead/lag configuration.	The sump pit cover is not sealed. No operational deficiencies were reported.	Good
M28	Standpipe & FHC's	Fire hose cabinets (FHCs) with portable fire extinguishers are provided on each floor, in the basement level, and in the garage. Fire hose cabinets are served by a standpipe system consisting of welded steel piping and associated valves.	Corrosion was observed in fire hose cabinets in the garage.	Good
M29a	Sprinkler	The basement, board room, garbage room and garage are protected by a wet pipe sprinkler system. Where observed, piping is steel with threaded and welded joints. Piping and sprinkler heads appear to be original to the building construction.	Surface corrosion was observed on piping in the garage. Trace heating has been installed by building staff adjacent to the overhead garage doors. There is a potential of freezing in this location, although freezing was not reported. Trace heating was reported to be used on an as-needed basis. We recommend investigating the potential of installing a dry-pipe sprinkler system in the garage area and garbage room. Dry-pipe sprinklers may be better suited for areas that have a freeze risk.	Fair
M29b	Sprinkler - Heads			
M30	Pool Equipment	Pool water is filtered by a Pentair sand filter, is circulated by a two HP Hayward pump, and is heated by a 24 kW Coates electric heater. Water is drawn from the pool by two skimmer fittings, and two main drains located at the bottom of the pool. Water is returned to the pool by seven return fittings.	The equipment was reported to have been installed approximately two or three years ago. No deficiencies were reported or observed.	Good
M31	Natural Gas	The emergency generator and boilers are served by a natural gas system. Piping consists of welded steel piping. Natural gas consumption is measured by a utility owned meter.	No deficiencies were reported or observed. It was reported that the emergency generator was switched to natural gas approximately five years ago.	Good
M32a	Controls - Compressor	The building is equipped with an air compressor and air dryer that provides air for pneumatically controlled devices.	No deficiencies were reported or observed.	Good
M32b	Controls - System	The building is equipped with a pneumatic controls system in the penthouse. It appears as though some valve operators have been recently replaced. The remainder of the system appears to be original.	No deficiencies were reported or observed. The system appears to be maintained at regular intervals.	Good

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M25b	Waste Piping - Sanitary - Garage Drains	Replace the cast iron garage floor drains. It was reported to us that this work is being completed as part of the suspended slab membrane replacement and that the cost is included in the budget provided for this work by CCC 60; the allowance for the replacement of the garage floor drains has been removed.	40 - 50	1973	42				
M25c	Waste - Storm	A contingency to complete repairs to the storm drain piping has been included for with the sanitary drain piping (refer to item M25a).	40 - 50	1973	42				
M26	Domestic Water Booster Pump	Replace the domestic water booster package at the end of its expected service life.	10 - 15	2010	5	10	15	1	$57,000
M27	Sump Pumps - Replacement	Replace the sump pumps as they fail. Replace the sump pit cover. Cover must be air tight; this can be completed under the operating budget.	10 - 15	2013	2	13	15	1	$17,000
M28	Standpipe & FHC's	Replace the standpipe and FHCs at the end of their expected service lives. The timing of replacement should be adjusted, based on the results of the testing (Item M13b). Have the fire hose cabinets cleaned with a wire brush and painted. This will ensure that they last for their entire expected service life; this can be completed under the operating budget.	50 - 60	1973	42	24	50	1	$181,000
M29a	Sprinkler	Replace the sprinkler piping at the end of its expected service life.	50 - 60	1973	42	25	50	1	$200,000
M29b	Sprinkler - Heads	Testing of wet pipe sprinkler heads is required by NFPA after 50 years of service; however, it is generally less expensive to replace the heads. Replace the sprinkler heads at the end of their service lives. Replacement of heads has been included for with the replacement of sprinkler system in M28a above.	50	1973	42	8	50	1	$17,000
M30	Pool Equipment	Replace the pool filtration equipment at the end of its expected service life.	10 - 15	2013	2	13	15	1	$17,000
M31	Natural Gas	Replace the natural gas piping at the end of its expected service life.	60 - 70	1973	42	28	60	1	$17,000
M32a	Controls - Compressor	Replace the controls compressor at the end of its expected service life.	20 - 25	2012	3	19	20	1	$6,000
M32b	Controls - System	Repair devices as required; this can be completed under the operating budget.	20 - 25	1973	42				

Item No.	Component	Description	Observations	Condition
M33	Elevator Room - DX Split System	The elevator equipment room is served by a direct expansion (DX) split air conditioning system. It consists of an outdoor condensing unit, and indoor fan coil unit. The DX split system appears to have been installed approximately three years ago.	No deficiencies were reported or observed.	Good.
E1	Vault Replacement	The electrical service is supplied to the building through buried, radial feeds into 4kV oil circuit breaker switchgear. The switchgear supplies a bank of three 37.5kVA, 120/240V transformers for the 120/208V service and a bank of three 75kVA, 600V transformers for the 600V service. CCC 60 currently is supplied with both a 120/208V service and a 600V service from the hydro vault.	Hydro Ottawa may not allow two services at time of replacement. This would require a redesign of the building distribution to suit only a 600V service and step-down power as required for the 120/208V distribution. A failure of this equipment would leave the building without all normal power, until Ottawa Hydro can repair the vault on emergency conditions. Last maintenance provided on May 29, 2009.	Fair
E2	Main ER 600V Splitter	The 600V service to the building is supplied from the vault through a CEB (manufacturer), 600V, 400A disconnect feeding a BEL (manufacturer), 600V, 400A splitter trough in the main electrical room. The splitter trough supplies all 600V power throughout the building.	All equipment is estimated to be original to the building and is approaching the end of the service life. A failure of this equipment would cause emergency repairs and leave the building without most mechanical equipment until fixed. The electrical room is being used as a storage closet and contains combustible materials; the required one meter of clearance is not being maintained as a result. Wiring for this equipment and the other components of the electrical distribution for the building is reported by the condominium to be aluminum; for all recommendations we have allowed for the installation of copper wiring upon replacement of the equipment.	Fair
E3	Penthouse 600V Splitter	All penthouse power is supplied through the penthouse BEL (manufacturer), 600V, 400A splitter trough and associated disconnects.	Equipment was observed to be of various ages, but mostly original. For the purposes of this study, the age of the equipment is recorded as original to the building. Wiring is reported by condo to be aluminum.	Fair
E4	Main ER 120/208V Splitter	The 120/208V service to the building is supplied from the vault through a splitter trough in the main electrical room. The splitter trough supplies all normal 120V power throughout the building, excluding the penthouse.	All equipment is estimated to be original to the building and is approaching the end of the service life. A failure of this equipment would cause emergency repairs and leave the condo units without power until fixed.	Fair
E5	Condo 120/208V Riser & Panels	The condo units are supplied through a 120/208V riser originating in the main electrical room. The riser supplies 120/208V, 600A, 42-circuit tenant power distribution panels in electrical closets on the 2nd, 5th, 8th & 10th floors and a 100A panel A in the penthouse.	All equipment is estimated to be original to the building. Electrical closets are being used as storage closets and contain combustible materials.	Fair
E6	Penthouse 120V Distribution	A Marcus (manufacturer), 15kVA, 600-120/208V transformer and a Cutler-Hammer (manufacturer), 120/208V, 125A, 12-circuit panel (Panel B) are supplied from a disconnect at the penthouse 600V splitter trough.	Equipment is observed to be newer and estimated to be installed in 1991 based on circuit dating on the panel.	Good

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M33	Elevator Room - DX Split System	Replace the DX split system at the end of its expected service life.	20 - 25	2012	3	19	20	1	$6,000
E1	Vault Replacement	Replace incoming service including: buried incoming conductors, switchgear, transformer primary and secondary conductors and pad-mount bases. Cost is based upon current configuration. Reconfiguration of service could greatly increase the cost; the condominium should coordinate with Hydro Ottawa prior to commencement of this project.	40 - 50	1974	41	4	40	1	$484,000
E2	Main ER 600V Splitter	Recommend bulk replacement of: 600V service from vault, 600V main disconnect, 600V splitter trough and associated local disconnects, conductors and conduit at end of typical service life. This work is to be completed in conjunction with the vault replacement (refer to item E1). Cost is based upon current configuration; investigate if utility will continue to allow two electrical services to the building before replacing 600V equipment as is (refer to item E1). Note that a single service would change the design of this equipment and could greatly increase the cost of replacement.	40 - 45	1974	41	4	40	1	$15,000
E3	Penthouse 600V Splitter	Recommend bulk replacement of 600V supply from main electrical room and 600V splitter trough and associated local disconnects, conductors and conduit at end of typical service life.	40 - 45	1974	41	6	40	1	$36,000
E4	Main ER 120/208V Splitter	Recommend bulk replacement of 120/208V service from vault, 120/208V splitter trough and associated local disconnects, conductors and conduit at end of typical service life. Cost is based upon current configuration; investigate if utility will continue to allow two electrical services to the building before replacing this equipment (refer to item E1). Note that a single service could change the design of this equipment and could increase the cost of replacement.	40 - 45	1974	41	4	40	1	$10,000
E5	Condo 120/208V Riser & Panels	Replace riser and associated panels in bulk at end of typical service life. The current riser configuration will likely not be allowed to be replaced as is through the distribution panels. We have included for a new riser to be run adjacent to the panels with disconnects at each panel and using copper conductors. This will allow for the minimum amount of downtime during replacement and not require temporary power solutions. If a riser is unable to be installed through the electrical closets adjacent to the existing riser, then temporary power arrangements would be additional to this cost.	40 - 45	1974	41	6	40	1	$145,000
E6	Penthouse 120V Distribution	Recommend replacing the transformer, panel and conductors at the end of the reliable service life.	30 - 40	1991	24	16	30	1	$11,000

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Item No.	Component	Description	Observations	Condition
E7	Common 120/208V Panels	A collection of 120/208V panels (mostly CEB manufactured) are used throughout the building to control common loads. The panels are all supplied from the main 120/208V splitter trough or sub-fed from "Panel 1" in the main electrical room.	The Swimming Pool Panel in the basement sprinkler room is showing significant rust and is in poor condition.	Fair
E8	Ground Floor Lighting	The ground floor lighting consists of fluorescent strip fixtures, pot lights and cove lighting.	No deficiencies were observed or reported.	Good
E9	Unit Corridor Lighting	The unit corridors (floors 2-11) use cove lighting, fluorescent pot lights and a wall sconce at each unit entrance for illumination.	No deficiencies were observed or reported.	Good
E10	Basement Lighting (Excluding Pool Area)	The basement lighting consists of spiral compact fluorescent luminaires with dome covers in the corridor and locker rooms, fluorescent strip lighting in the gym and fluorescent spotlights in the sauna.	Some fluorescent strip luminaires in the gym are unlit and a lens indicates a failure has occurred. Sufficient light is still being provided and it appears the luminaires are intentionally off, but the condition of existing luminaires should be reviewed if unknown and the lens should be replaced out of the operating budget.	Good
E11	Pool Area Lighting	The pool area uses recessed, 1-lamp, spiral compact fluorescent pot lights and metal halide wall sconces for illumination.	No deficiencies were observed or reported.	Good
E12	Stairwell Lighting	The stairwells are illuminated with surface mounted, 2-lamp, spiral compact fluorescent dome luminaires and surface mounted, 1'x4', 2-lamp, T8 fluorescent luminaires in stairwell corridors to the garage.	No deficiencies were observed or reported.	Good
E13	Service Room Lighting	Service rooms use a variety of fluorescent and incandescent luminaires. These include fluorescent strip lighting, compact fluorescent and incandescent pot lights and spiral compact fluorescent dome fixtures.	Some service rooms are using T12 fluorescent luminaires. Luminaires estimated to be largely original.	Fair
E14a	Garage Lighting-T12 Luminaires	The garage lighting is observed to use a 4', 1-lamp, T12 fluorescent surface-mounted fixture with wire guard cover for about half of the luminaires.	The T12 luminaires are likely original. Updating T12 luminaires will save greatly on energy consumption and is often partially covered under energy reduction programs. Review if adding a few fixtures in parking spots will help drop the maximum to minimum lighting ratio (eliminate dark spots) at time of replacement.	Fair
E14b	Garage Lighting-T8 Luminaires	The garage lighting is observed to use a 4', 1-lamp, T8 fluorescent surface-mounted fixture with wire guard cover for about half of the luminaires.	The T8 luminaires are estimated to have been replaced in 2010.	Good
E15	Exterior Lighting	The building exterior lighting consists of a variety of surface mounted luminaires on the exterior of the building and ornamental lighting by the steps at the south of the building.	An exterior stairwell luminaire was replaced in 2013. Luminaires observed to be a variety of ages with some fixtures being original.	Fair
E16	Emergency Exit Signs	The emergency exit signs are red-lettered, illuminated "EXIT" signs using screw in fluorescent/incandescent lamps.	Signs were observed to be of various ages and condition, with a large number soon to reach or have exceeded typical service life.	Good
E17	Emergency Lighting	Several emergency battery units (EBUs) are placed throughout the building (penthouse, etc.) to provide illumination.	No deficiencies were observed or reported, EBUs observed to be older.	Good
E18a	Emergency Generator - Recondition	The building uses a Kohler (manufacturer), 15kW, 120/208V, natural gas generator located in the basement generator room to provide emergency power.	The supply vent to the generator was damaged allowing exterior air to flood into the generator room.	Fair

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Item No.	Component	Recommendations	Typical Life Expectancy	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
E7	Common 120/208V Panels	Recommend bulk replacement of panels and associated conductors and conduit. A cost savings and reduced work schedule will result from bulk replacement. Copper wiring should be used for all conductors 6AWG or smaller (all 120/208V panel loads).	40 - 45	1974	41	7	40	1	$40,000
E8	Ground Floor Lighting	Replace luminaires in bulk at end of typical service life with energy efficient equivalent. Coordinate with lobby refinishing to reduce cost of finish repairs.	25 - 30	2014	1	29	30	1	$11,000
E9	Unit Corridor Lighting	Replace luminaires in bulk at end of typical service life with energy efficient equivalent. Coordinate with corridor refinishing to reduce cost of finish repairs.	25 - 30	2012	3	27	30	1	$34,000
E10	Basement Lighting (Excluding Pool Area)	Replace luminaires in bulk at end of typical service life with energy efficient equivalent. Coordinate with basement refinishing to reduce cost of finish repairs.	25 - 30	2000	15	17	25	1	$9,000
E11	Pool Area Lighting	Replace luminaires and associated conductors in bulk at end of typical service life with energy efficient equivalent. Type two asbestos operations will likely have to occur at time of replacement; we have assumed that this work will be completed in conjunction with the painting of the pool area (refer to item A12c).	25 - 30	2000	15	13	25	1	$5,000
E12	Stairwell Lighting	Replace luminaires in bulk at end of typical service life with energy efficient equivalent.	25 - 30	2000	15	12	25	1	$6,000
E13	Service Room Lighting	Replace luminaires at failure out of operating budget with energy efficient equivalent.	25 - 30	1973					
E14a	Garage Lighting-T12 Luminaires	Recommend to bulk replace remaining T12 fluorescent with energy efficient equivalent at end of typical service life. Replacing in bulk will provide a cost reduction and provide an affordable lighting design if required. Cost is based on replacing current configuration as is.	20 - 30	1973	42	5	30	1	$9,000
E14b	Garage Lighting-T8 Luminaires	Recommend to bulk replace remaining T8 fluorescent with energy efficient equivalent at end of typical service life.	20 - 30	2010	5	20	20	1	$9,000
E15	Exterior Lighting	Replace luminaires and associated conductors and exposed conduit in bulk at end of typical service life with energy efficient equivalent. The front entrance potlights are being replaced this year and have been included for with the soffit (refer to item BE6).	20 - 25	1973	42	6	25	1	$7,000
E16	Emergency Exit Signs	Replace emergency exit signs at end of typical service life or failure under the operating budget.	20	Various					
E17	Emergency Lighting	Replace batteries and emergency battery units at end of typical service life under the operating budget.	15	Various					
E18a	Emergency Generator - Recondition	An allowance to recondition the generator including rebuilding of the engine and rewinding the copper winding of the alternator. Repair the supply air vent; this can be completed under the operating budget.	30	1986	29	2	30	1	$10,000

Item No.	Component	Description	Observations	Condition
E18b	Emergency Generator - Replace			
E19	Emergency 120/208V Panel	A 120/208V panel located in the main electrical room is used to distribute emergency power throughout the building.	No deficiencies were observed or reported.	Good
E20	Fire Alarm & Annunciator Panels	The fire detection and alarm system control panel is a Notifier (manufacturer), single-stage, addressable system. The control panel is located in the main electrical room and the annunciator panel is located in the front vestibule.	Based on the description on the panel (listed as part of a Pittway Corporation), the date of construction of the panel is between 1987 to 1999. The age of installation is estimated to be 1995 based on the condition of the panels.	Fair
E22	Fire Alarm Devices	The fire detection and alarm devices consist of pull stations, smoke detectors and duct type smoke detectors, and horns for notification.	Devices are a variety of ages and conditions.	Fair
E23	Fire Alarm Wiring	Fire alarm wiring is generally copper conductors in EMT and armoured cable (BX).	No deficiencies were observed or reported.	Fair
E24	Door Entry/Intercom System	The door entry/intercom system is a Mircom island station located in the front vestibule. The installed date is unknown; based on the provided documentation, it is assumed to have been installed in 1993.	No deficiencies were observed or reported. Technology is regularly updated and equipment quickly becoming obsolete and outdated.	Fair
E25	CCTV Equipment	A CCTV system is used to monitor the lobby, garage and entrances to the building.	No deficiencies were observed or reported.	Good
E26	Ramp Heating	The ramp heating is provided through in slab electrical heat; the installation of the ramp heating is estimated to be original to the building.	No deficiencies were observed or reported.	Good
E27	Penthouse Loose Controls	A variety of controls (disconnects, starters, etc.) are used to control local mechanical equipment throughout the penthouse.	No deficiencies were observed or reported. Variable speed drives are estimated to be installed in 1991. The majority of the disconnects and starters are estimated to be original to the building.	Good
E28	Electric Heating	An electric space heater is used to heat the elevator machine room in the mechanical penthouse.	No deficiencies were observed or reported.	Good
E29	Single Line Diagram (SLD)	The single line diagram (SLD) of the building electrical distribution should be posted in the main electrical room. An updated SLD will help contractors to understand existing distribution at time of replacement.	No single line diagram was observed on site. The documentation provided was original to the building and is not up to date.	N/A
EL1	Elevators - B44 Safety Code	Periodically, TSSA dictates that remedial work be carried out on elevators.	Refer to the elevator report in Appendix D.	NA
EL2	Elevators - Machine Room Guarding	Reliance upon a locked elevator machine room door or restricted access policy is no longer considered sufficient safeguard against the potential hazards associated with elevator machine room equipment.	Refer to the elevator report in Appendix D.	NA
EL3	Elevators - Modernization	There are two traction passenger elevators in the building that provide access to all floors; the elevators were modernized in 2009.	Refer to the elevator report in Appendix D.	Good

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Item No.	Component	Recommendations	Typical Life Expectancy	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
E18b	Emergency Generator - Replace	Replace generator and associated conductors, transfer switch and conduit at end of typical service life.	30	1986	29	21	30	1	$45,000
E19	Emergency 120/208V Panel	Replace 120/208V emergency panel and associated conductors and conduit at end of typical service life.	40	1986	29	11	40	1	$12,000
E20	Fire Alarm & Annunciator Panels	Replace fire detection and alarm control panel, annunciator panel and associated conductors in bulk at end of typical service life.	20	1995	20	2	20	1	$30,000
E22	Fire Alarm Devices	Recommend bulk replacement of all devices in conjunction with every second panel replacement (refer to item E20). This ensures that the devices are using up to date technology and that they work with the new panels.	40	1974	41	2	40	1	$45,000
E23	Fire Alarm Wiring	Replace fire detection and alarm system conductors and conduit not associated with the panel replacements in conjunction with every second panel replacement (refer to item E20). Cost provided uses copper conductors.	40	1974	41	2	40	1	$113,000
E24	Door Entry/Intercom System	Replace door entry/intercom system at end of typical service life with modernized equivalent.	15 - 25	1993	22	8	25	1	$17,000
E25	CCTV Equipment	Replace equipment at end of typical service or at failure out of the operating budget.	10 - 15	2005					
E26	Ramp Heating	Replace in slab electric heat and associated conductors, conduit and disconnect in conjunction with driveway replacement (part of the podium deck project, refer to item PG2).	40	1974	41	5	40	1	$6,000
E27	Penthouse Loose Controls	An allowance to replace controls and associated conductors at failure.	15 - 40	1973	42	5	10	1	$6,000
E28	Electric Heating	Replace heater at failure out of operations budget.	30	2000					
E29	Single Line Diagram (SLD)	An updated single line diagram should be plotted and posted in a service room of the building (preferably the main electrical room); this should be completed under the operating budget.							
EL1	Elevators - B44 Safety Code	A contingency for future mandatory work as required by the B44 Safety Code has not been included for in the reserve fund; CCC 60 has informed us that they will address any work (should it be required) under the operating budget.	5	2009	6				
EL2	Elevators - Machine Room Guarding	An allowance to install elevator machine room guarding.	30	2009	6	1	30	1	$17,000
EL3	Elevators - Modernization	Complete modernization of the existing elevators including B44 Code upgrades.	25 - 30	2009	6	19	25	2	$339,000

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Item No.	Component	Description	Observations	Condition
EL4	Elevators - Cab Finishes		Refer to the elevator report in Appendix D.	Good
RFS1	Reserve Fund Study with Site Review	CCC 60 is required to complete a Reserve Fund Study Update with Site Inspection within three years of the Update without Site (as specified by O.Reg. 48/01, s. 31 (3)); this is the minimum requirement for conducting Reserve Fund Studies.	CCC 60 should consider an Update with Site Inspection if any significant changes in the condition of the common elements become apparent.	NA
RFS2	Reserve Fund Study - No Site Review	CCC 60 is required to complete a Reserve Fund Study Update without Site Inspection within three years of the date of this study (as specified by O.Reg. 48/01, s. 31 (3)); this is the minimum requirement for conducting Reserve Fund Studies.	CCC 60 should consider an Update without Site Inspection at an earlier date if there are any significant changes to the cash flow due to unforeseen conditions.	NA

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Item No.	Component	Recommendations	Typical Life Expectancy	Actual or Estimated Year of Acquisition	Present Age	Time To First Replacement	Time to Subsequent Replacements	Years Over Which Work is Phased	Total Repair or Replacement Costs*
EL4	Elevators - Cab Finishes	An allowance to modernize cab finishes.	25 - 30	2009	6	19	25	1	$32,000
RFS1	Reserve Fund Study with Site Review	Perform a Comprehensive Reserve Fund Study or Reserve Fund Study with Site Review as required by the current Condominium Act.	6	2015	0	7	6	1	$10,800
RFS2	Reserve Fund Study - No Site Review	Perform a Reserve Fund Study without Site Review as required by the current Condominium Act.	6	2012	3	4	6	1	$2,500

APPENDIX B

Current Contribution

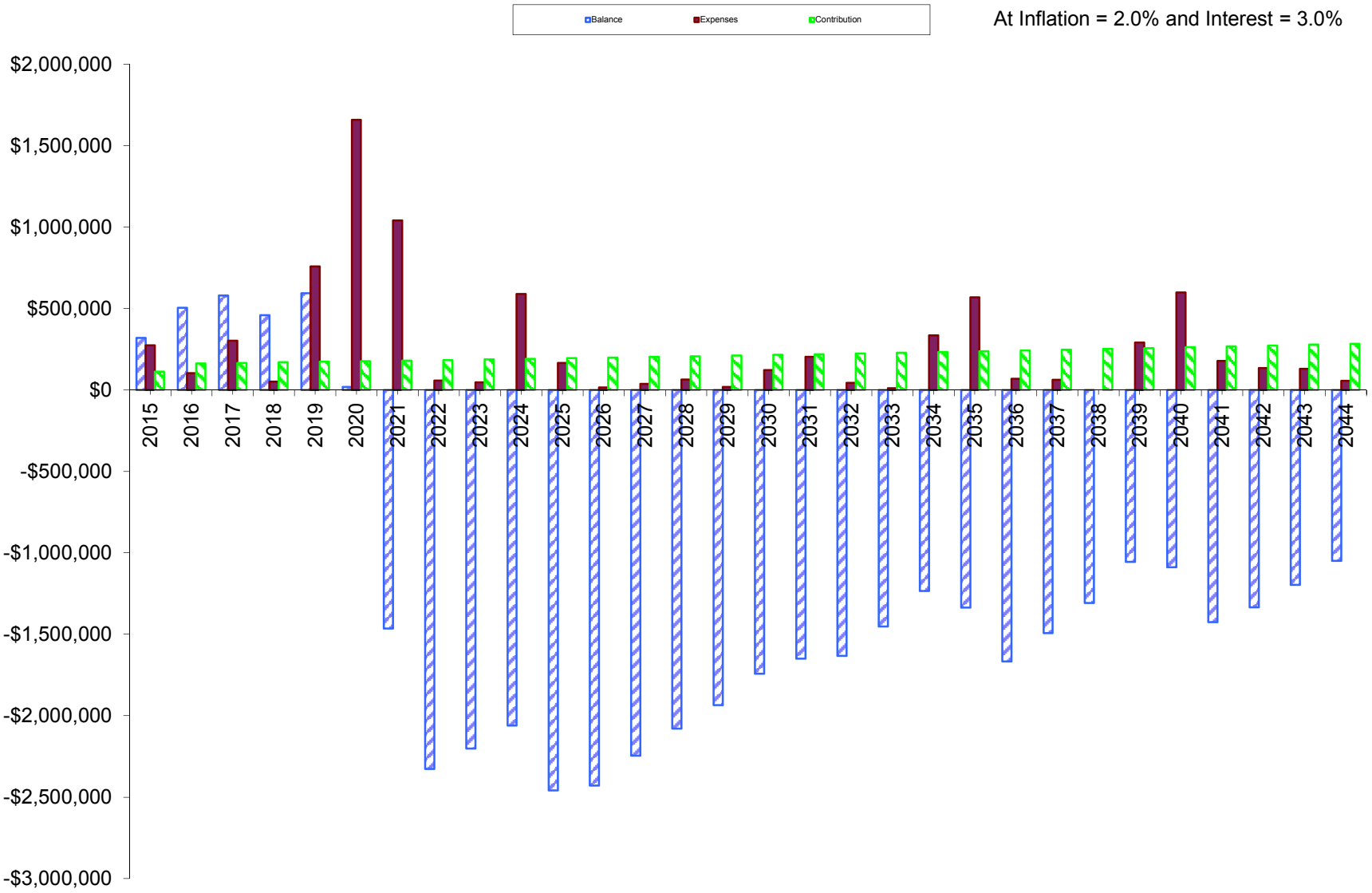
CCC 60
30 Year Reserve Fund Cash Flow Table
Current Plan - Final - March 21, 2016

Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2015 Fiscal Year	319,546
Minimum Reserve Fund Balance	(2,457,916)

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2015	319,546	113,266			274,862	7,162	503,982
2016	503,982	163,266	44.1%		103,020	16,023	580,251
2017	580,251	166,531	2.0%		302,756	15,364	459,390
2018	459,390	169,862	2.0%		50,938	15,566	593,880
2019	593,880	173,259	2.0%		758,244	9,042	17,937
2020	17,937	176,724	2.0%		1,659,433		(1,464,772)
2021	(1,464,772)	180,259	2.0%		1,041,700		(2,326,214)
2022	(2,326,214)	183,864	2.0%		58,353		(2,200,703)
2023	(2,200,703)	187,541	2.0%		46,866		(2,060,028)
2024	(2,060,028)	191,292	2.0%		589,181		(2,457,916)
2025	(2,457,916)	195,118	2.0%		165,174		(2,427,972)
2026	(2,427,972)	199,020	2.0%		14,920		(2,243,872)
2027	(2,243,872)	203,001	2.0%		36,779		(2,077,651)
2028	(2,077,651)	207,061	2.0%		64,422		(1,935,011)
2029	(1,935,011)	211,202	2.0%		18,473		(1,742,282)
2030	(1,742,282)	215,426	2.0%		122,474		(1,649,330)
2031	(1,649,330)	219,735	2.0%		203,859		(1,633,454)
2032	(1,633,454)	224,129	2.0%		43,407		(1,452,733)
2033	(1,452,733)	228,612	2.0%		9,998		(1,234,118)
2034	(1,234,118)	233,184	2.0%		335,504		(1,336,438)
2035	(1,336,438)	237,848	2.0%		568,375		(1,666,965)
2036	(1,666,965)	242,605	2.0%		68,205		(1,492,565)
2037	(1,492,565)	247,457	2.0%		62,612		(1,307,721)
2038	(1,307,721)	252,406	2.0%				(1,055,315)
2039	(1,055,315)	257,454	2.0%		291,127		(1,088,988)
2040	(1,088,988)	262,603	2.0%		598,903		(1,425,288)
2041	(1,425,288)	267,855	2.0%		177,801		(1,335,234)
2042	(1,335,234)	273,212	2.0%		135,271		(1,197,292)
2043	(1,197,292)	278,677	2.0%		130,142		(1,048,757)
2044	(1,048,757)	284,250	2.0%		56,827		(821,334)

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

CCC 60
30 Year Reserve Fund Cash Flow Chart
Current Plan - Final - March 21, 2016



Actual annual values for contribution, forecast expenditures, and balance can be found in the Cash Flow Table and Plan

APPENDIX C

Scenario 1 - Proposed Contribution 1

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	319,546	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	7,162	16,023	81,364	83,546	79,061	50,417	16,768	6,232	10,412	6,866	1,552	4,810	10,209	15,148	20,633
	Annual Reserve Contribution	113,266	163,266	166,531	169,862	173,259	176,724	180,259	183,864	187,541	191,292	195,118	199,020	203,001	207,061	211,202
	Other Contribution	281,438	2,200,000	0	0											
	Ending Balance	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401	804,763
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
0	Current Year Expenditures	79,862														
S1	Foundation						142,426									
S3a	Balconies - Assessment			10,404												
S3b	Balconies - Repairs						146,843									
S4	Balcony Railings															
BE1	Masonry			64,505												
BE2	Metal Panels - Windows															
BE4	Metal Siding - Upper Floors															
BE6	Soffits & Canopy	3,000														
BE7	Exterior Sealant		60,180													
BE8	Windows															
BE9	Sliding Doors															
BE10	Entrance Doors						18,769									
BE11	Power Door Operators															
BE12	Pool Doors															
R1	Roofs						81,702									
A1	Corridors - Residential											32,913				
A2	Stairwells											14,628				
A3	Ground Floor Corridor											14,628				
A4	Lobby		3,060													
A5	Basement & Garage Corridors					9,742										
A6	Guest Suites											7,314				
A7	Superintendent's Suite															
A8	Party & Board Rooms											8,533				
A9	Laundry Room											10,971				
A10	Fitness Room															18,473
A11a	Pool - Tank										25,097					
A12b	Pool - Deck										29,877					
A11c	Pool - Paint		14,280													
A14	Garbage Chute Rooms															
PG1	Parking Garage - Structure			5,202												
PG2	Podium Deck						494,628									
PG3a	Suspended Slab - Repairs															
PG3b	Suspended Slab - Replace	182,000														
L2a	Retaining Wall - Assessment			8,323												
L2b	Retaining Wall - Repairs							86,715								
L3	Interlocking															
M1	Boilers - New															
M3	Chiller															
M4a	Main Circulating Pumps - New															
M4b	Main Circulating Pumps - Original		8,160													
M5	Perimeter Heating Pump															
M6	AHU Heating Pump															
M8	DHW Heating Pump															
M9a	Force Flow Heaters - Front Vestibule															
M9b	Force Flow Heaters - Rear Vestibule and Stairs						6,624									

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	804,763	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	25,537	27,936	31,723	38,664	41,569	36,323	35,071	41,512	49,316	54,076	50,149	47,960	52,819	58,700	66,101
	Annual Reserve Contribution	215,426	219,735	224,129	228,612	233,184	237,848	242,605	247,457	252,406	257,454	262,603	267,855	273,212	278,677	284,250
	Other Contribution															
	Ending Balance	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643	2,383,167
	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
0	Current Year Expenditures															
S1	Foundation															
S3a	Balconies - Assessment			14,002												
S3b	Balconies - Repairs						197,631									
S4	Balcony Railings															
BE1	Masonry		85,113													
BE2	Metal Panels - Windows															
BE4	Metal Siding - Upper Floors															
BE6	Soffits & Canopy	4,038														
BE7	Exterior Sealant		80,994													
BE8	Windows															
BE9	Sliding Doors															
BE10	Entrance Doors															
BE11	Power Door Operators				9,998											
BE12	Pool Doors					8,741										
R1	Roofs															
A1	Corridors - Residential											44,296				
A2	Stairwells															
A3	Ground Floor Corridor															
A4	Lobby															
A5	Basement & Garage Corridors															
A6	Guest Suites						8,916									
A7	Superintendent's Suite						29,719									
A8	Party & Board Rooms															
A9	Laundry Room						13,374									
A10	Fitness Room															
A11a	Pool - Tank															37,293
A12b	Pool - Deck															
A11c	Pool - Paint		19,219													
A14	Garbage Chute Rooms															
PG1	Parking Garage - Structure															
PG2	Podium Deck															
PG3a	Suspended Slab - Repairs	56,526														
PG3b	Suspended Slab - Replace															
L2a	Retaining Wall - Assessment															
L2b	Retaining Wall - Repairs															
L3	Interlocking	5,383										6,562				
M1	Boilers - New															
M3	Chiller												142,241			
M4a	Main Circulating Pumps - New													13,655		
M4b	Main Circulating Pumps - Original															
M5	Perimeter Heating Pump													13,655		
M6	AHU Heating Pump													13,655		
M8	DHW Heating Pump			8,401												
M9a	Force Flow Heaters - Front Vestibule			8,401												
M9b	Force Flow Heaters - Rear Vestibule and Stairs															

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	319,546	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	7,162	16,023	81,364	83,546	79,061	50,417	16,768	6,232	10,412	6,866	1,552	4,810	10,209	15,148	20,633
	Annual Reserve Contribution	113,266	163,266	166,531	169,862	173,259	176,724	180,259	183,864	187,541	191,292	195,118	199,020	203,001	207,061	211,202
	Other Contribution	281,438	2,200,000	0	0											
	Ending Balance	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401	804,763
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
M10	Hydronic Convectors (Baseboard Heaters)									7,030						
M11	Garage Unit Heaters				6,367											
M13a (1)	Hydronic Piping - Engineering					194,838										
M13a (2)	Hydronic Piping - Replace						728,693	743,267								
M13b	Pipe Test															
M13c	Hydronic Piping - Penthouse															
M14	Makeup Air Unit (MAU)				44,571											
M15	Main Exhaust Fan													7,609		
M16a	Pool Fan Coil Unit - Replace	10,000														
M17	Pool Exhaust Fan															
M18	Vault Fan - Replace											3,657				
M19	Garage Exhaust Fan			8,323												
M21	DHW Tank													21,560		
M23a	Domestic Water Entry - Replace						16,561									
M24a	Domestic Water Piping - Reline										534,206					
M24b	Domestic Water Piping - Replace															
M25a	Waste Piping - Sanitary															
M26	Domestic Water Booster Pump											69,483				
M27	Sump Pumps - Replacement														21,991	
M28	Standpipe & FHC's															
M29a	Sprinkler															
M29b	Sprinkler - Heads									19,918						
M30	Pool Equipment														21,991	
M31	Natural Gas															
M32a	Controls - Compressor															
M33	Elevator Room - DX Split System															
E1	Vault Replacement					523,897										
E2	Main ER 600V Splitter					16,236										
E3	Penthouse 600V Splitter							40,542								
E4	Main ER 120/208V Splitter					10,824										
E5	Condo 120/208V Riser & Panels							163,294								
E6	Penthouse 120V Distribution															
E7	Common 120/208V Panels								45,947							
E8	Ground Floor Lighting															
E9	Unit Corridor Lighting															
E10	Basement Lighting (Excluding Pool Area)															
E11	Pool Area Lighting														6,468	
E12	Stairwell Lighting													7,609		
E14a	Garage Lighting- T12 Luminaires						9,937									
E14b	Garage Lighting- T8 Luminaires															
E15	Exterior Lighting							7,883								
E18a	Emergency Generator - Recondition		10,404													
E18b	Emergency Generator - Replace															

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	804,763	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	25,537	27,936	31,723	38,664	41,569	36,323	35,071	41,512	49,316	54,076	50,149	47,960	52,819	58,700	66,101
	Annual Reserve Contribution	215,426	219,735	224,129	228,612	233,184	237,848	242,605	247,457	252,406	257,454	262,603	267,855	273,212	278,677	284,250
	Other Contribution															
	Ending Balance	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643	2,383,167
	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
M10	Hydronic Convectors (Baseboard Heaters)															
M11	Garage Unit Heaters															
M13a (1)	Hydronic Piping - Engineering															
M13a (2)	Hydronic Piping - Replace															
M13b	Pipe Test															
M13c	Hydronic Piping - Penthouse											34,863	35,560	36,271	36,997	
M14	Makeup Air Unit (MAU)															
M15	Main Exhaust Fan															
M16a	Pool Fan Coil Unit - Replace															
M17	Pool Exhaust Fan											4,922				
M18	Vault Fan - Replace															
M19	Garage Exhaust Fan								12,368							
M21	DHW Tank															
M23a	Domestic Water Entry - Replace															
M24a	Domestic Water Piping - Reline															
M24b	Domestic Water Piping - Replace															
M25a	Waste Piping - Sanitary	48,451					53,494					59,062				
M26	Domestic Water Booster Pump											93,515				
M27	Sump Pumps - Replacement														29,597	
M28	Standpipe & FHC's										291,127					
M29a	Sprinkler											328,121				
M29b	Sprinkler - Heads															
M30	Pool Equipment														29,597	
M31	Natural Gas														29,597	
M32a	Controls - Compressor					8,741										
M33	Elevator Room - DX Split System					8,741										
E1	Vault Replacement															
E2	Main ER 600V Splitter															
E3	Penthouse 600V Splitter															
E4	Main ER 120/208V Splitter															
E5	Condo 120/208V Riser & Panels															
E6	Penthouse 120V Distribution		15,101													
E7	Common 120/208V Panels															
E8	Ground Floor Lighting															19,534
E9	Unit Corridor Lighting													58,034		
E10	Basement Lighting (Excluding Pool Area)			12,602												
E11	Pool Area Lighting															
E12	Stairwell Lighting															
E14a	Garage Lighting- T12 Luminaires															
E14b	Garage Lighting- T8 Luminaires						13,374									
E15	Exterior Lighting															
E18a	Emergency Generator - Recondition															
E18b	Emergency Generator - Replace							68,205								

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	319,546	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	7,162	16,023	81,364	83,546	79,061	50,417	16,768	6,232	10,412	6,866	1,552	4,810	10,209	15,148	20,633
	Annual Reserve Contribution	113,266	163,266	166,531	169,862	173,259	176,724	180,259	183,864	187,541	191,292	195,118	199,020	203,001	207,061	211,202
	Other Contribution	281,438	2,200,000	0	0											
	Ending Balance	503,982	2,780,251	2,725,390	2,927,860	2,421,936	989,645	144,971	276,714	427,800	36,777	68,274	257,183	433,614	591,401	804,763
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
E19	Emergency 120/208V Panel												14,920			
E20	Fire Alarm & Annunciator Panels			31,212												
E22	Fire Alarm Devices			46,818												
E23	Fire Alarm Wiring			117,565												
E24	Door Entry/Intercom System									19,918						
E26	Ramp Heating						6,624									
E27	Penthouse Loose Controls						6,624									
EL2	Elevators - Machine Room Guarding		17,340													
EL3	Elevators - Modernization															
EL4	Elevators - Cab Finishes															
RFS1	Reserve Fund Study with Site Review								12,406						13,971	
RFS2	Reserve Fund Study - No Site Review					2,706						3,047				

Detailed Thirty Year Reserve Fund Cash-Flow Plan

CCC 60
Scenario 1
Final - March 21, 2016

	Starting Balance	804,763	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	25,537	27,936	31,723	38,664	41,569	36,323	35,071	41,512	49,316	54,076	50,149	47,960	52,819	58,700	66,101
	Annual Reserve Contribution	215,426	219,735	224,129	228,612	233,184	237,848	242,605	247,457	252,406	257,454	262,603	267,855	273,212	278,677	284,250
	Other Contribution															
	Ending Balance	923,253	967,064	1,179,509	1,436,787	1,376,037	1,081,833	1,291,303	1,517,660	1,819,381	1,839,785	1,553,634	1,691,648	1,882,408	2,089,643	2,383,167
	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
E19	Emergency 120/208V Panel															
E20	Fire Alarm & Annunciator Panels								46,379							
E22	Fire Alarm Devices															
E23	Fire Alarm Wiring															
E24	Door Entry/Intercom System															
E26	Ramp Heating															
E27	Penthouse Loose Controls	8,075										9,844				
EL2	Elevators - Machine Room Guarding															
EL3	Elevators - Modernization					246,929	251,868									
EL4	Elevators - Cab Finishes					46,618										
RFS1	Reserve Fund Study with Site Review					15,734						17,719				
RFS2	Reserve Fund Study - No Site Review		3,432						3,865						4,353	

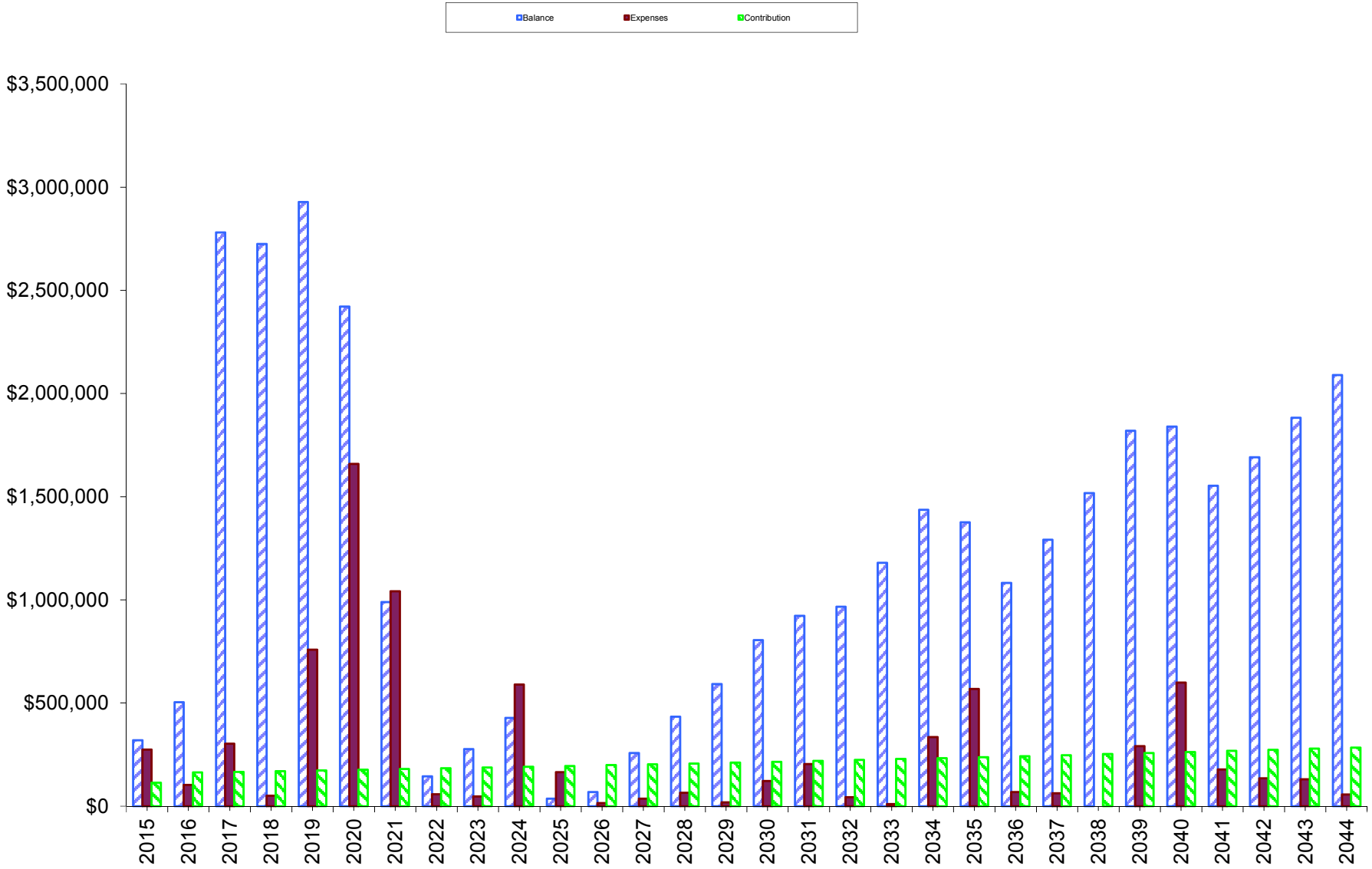
CCC 60
30 Year Reserve Fund Cash Flow Table
Scenario 1 - Final - March 21, 2016

Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2015 Fiscal Year	319,546
Minimum Reserve Fund Balance	36,777

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2015	319,546	113,266		281,438	274,862	7,162	503,982
2016	503,982	163,266	44.1%	2,200,000	103,020	16,023	2,780,251
2017	2,780,251	166,531	2.0%		302,756	81,364	2,725,390
2018	2,725,390	169,862	2.0%		50,938	83,546	2,927,860
2019	2,927,860	173,259	2.0%		758,244	79,061	2,421,936
2020	2,421,936	176,724	2.0%		1,659,433	50,417	989,645
2021	989,645	180,259	2.0%		1,041,700	16,768	144,971
2022	144,971	183,864	2.0%		58,353	6,232	276,714
2023	276,714	187,541	2.0%		46,866	10,412	427,800
2024	427,800	191,292	2.0%		589,181	6,866	36,777
2025	36,777	195,118	2.0%		165,174	1,552	68,274
2026	68,274	199,020	2.0%		14,920	4,810	257,183
2027	257,183	203,001	2.0%		36,779	10,209	433,614
2028	433,614	207,061	2.0%		64,422	15,148	591,401
2029	591,401	211,202	2.0%		18,473	20,633	804,763
2030	804,763	215,426	2.0%		122,474	25,537	923,253
2031	923,253	219,735	2.0%		203,859	27,936	967,064
2032	967,064	224,129	2.0%		43,407	31,723	1,179,509
2033	1,179,509	228,612	2.0%		9,998	38,664	1,436,787
2034	1,436,787	233,184	2.0%		335,504	41,569	1,376,037
2035	1,376,037	237,848	2.0%		568,375	36,323	1,081,833
2036	1,081,833	242,605	2.0%		68,205	35,071	1,291,303
2037	1,291,303	247,457	2.0%		62,612	41,512	1,517,660
2038	1,517,660	252,406	2.0%			49,316	1,819,381
2039	1,819,381	257,454	2.0%		291,127	54,076	1,839,785
2040	1,839,785	262,603	2.0%		598,903	50,149	1,553,634
2041	1,553,634	267,855	2.0%		177,801	47,960	1,691,648
2042	1,691,648	273,212	2.0%		135,271	52,819	1,882,408
2043	1,882,408	278,677	2.0%		130,142	58,700	2,089,643
2044	2,089,643	284,250	2.0%		56,827	66,101	2,383,167

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

CCC 60
30 Year Reserve Fund Cash Flow Table
Scenario 1 - Final - March 21, 2016



Actual annual values for contribution, forecast expenditures, and balance can be found in the Cash Flow Table and Plan

CCC 60
Contribution Table
Scenario 1 - Final - March 21, 2016

Year	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Total Contribution
2015	113,266		281,438	394,704
2016	163,266	44.1%	2,200,000	2,363,266
2017	166,531	2.0%		166,531
2018	169,862	2.0%		169,862
2019	173,259	2.0%		173,259
2020	176,724	2.0%		176,724
2021	180,259	2.0%		180,259
2022	183,864	2.0%		183,864
2023	187,541	2.0%		187,541
2024	191,292	2.0%		191,292
2025	195,118	2.0%		195,118
2026	199,020	2.0%		199,020
2027	203,001	2.0%		203,001
2028	207,061	2.0%		207,061
2029	211,202	2.0%		211,202
2030	215,426	2.0%		215,426
2031	219,735	2.0%		219,735
2032	224,129	2.0%		224,129
2033	228,612	2.0%		228,612
2034	233,184	2.0%		233,184
2035	237,848	2.0%		237,848
2036	242,605	2.0%		242,605
2037	247,457	2.0%		247,457
2038	252,406	2.0%		252,406
2039	257,454	2.0%		257,454
2040	262,603	2.0%		262,603
2041	267,855	2.0%		267,855
2042	273,212	2.0%		273,212
2043	278,677	2.0%		278,677
2044	284,250	2.0%		284,250

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

APPENDIX D

Scenario 2 - Proposed Contribution 2

CCC 60
Scenario 2
Final - March 21, 2016

Detailed Thirty Year Reserve Fund Cash-Flow Plan

	Starting Balance	319,546	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	2,313	16,023	35,458	56,991	72,792	45,268	12,798	3,504	8,990	6,817	2,946	7,718	14,707	21,313	28,546
	Annual Reserve Contribution	113,266	163,266	186,123	212,180	216,424	220,753	225,168	229,671	234,264	238,950	243,729	248,603	253,575	258,647	263,820
	Other Contribution	281,438	660,000	660,000	660,000											
	Ending Balance	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874	1,102,767
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Current Year Expenditures	79,862														
S1	Foundation						142,426									
S3a	Balconies - Assessment			10,404												
S3b	Balconies - Repairs						146,843									
S4	Balcony Railings															
BE1	Masonry			64,505												
BE2	Metal Panels - Windows															
BE4	Metal Siding - Upper Floors															
BE6	Soffits & Canopy	3,000														
BE7	Exterior Sealant		60,180													
BE8	Windows															
BE9	Sliding Doors															
BE10	Entrance Doors						18,769									
BE11	Power Door Operators															
BE12	Pool Doors															
R1	Roofs						81,702									
A1	Corridors - Residential											32,913				
A2	Stairwells											14,628				
A3	Ground Floor Corridor											14,628				
A4	Lobby		3,060													
A5	Basement & Garage Corridors					9,742										
A6	Guest Suites											7,314				
A7	Superintendent's Suite															
A8	Party & Board Rooms											8,533				
A9	Laundry Room											10,971				
A10	Fitness Room															18,473
A11a	Pool - Tank										25,097					
A12b	Pool - Deck										29,877					
A11c	Pool - Paint		14,280													
A14	Garbage Chute Rooms															
PG1	Parking Garage - Structure			5,202												
PG2	Podium Deck						494,628									
PG3a	Suspended Slab - Repairs															
PG3b	Suspended Slab - Replace	182,000														
L2a	Retaining Wall - Assessment			8,323												
L2b	Retaining Wall - Repairs							86,715								
L3	Interlocking															
M1	Boilers - New															
M3	Chiller															
M4a	Main Circulating Pumps - New															
M4b	Main Circulating Pumps - Original		8,160													
M5	Perimeter Heating Pump															
M6	AHU Heating Pump															
M8	DHW Heating Pump															
M9a	Force Flow Heaters - Front Vestibule															
M9b	Force Flow Heaters - Rear Vestibule and Stairs						6,624									

	Starting Balance	1,102,767	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	35,282	39,599	45,395	54,439	59,542	56,596	57,748	66,700	77,128	84,628	83,561	84,356	92,329	101,458	112,245
	Annual Reserve Contribution	269,096	274,478	279,968	285,567	291,278	297,104	303,046	309,107	315,289	321,595	328,027	334,587	341,279	348,105	355,067
	Other Contribution															
	Ending Balance	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377	4,002,861
	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
	Current Year Expenditures															
S1	Foundation															
S3a	Balconies - Assessment			14,002												
S3b	Balconies - Repairs						197,631									
S4	Balcony Railings															
BE1	Masonry		85,113													
BE2	Metal Panels - Windows															
BE4	Metal Siding - Upper Floors															
BE6	Soffits & Canopy	4,038														
BE7	Exterior Sealant		80,994													
BE8	Windows															
BE9	Sliding Doors															
BE10	Entrance Doors															
BE11	Power Door Operators				9,998											
BE12	Pool Doors					8,741										
R1	Roofs															
A1	Corridors - Residential											44,296				
A2	Stairwells															
A3	Ground Floor Corridor															
A4	Lobby															
A5	Basement & Garage Corridors															
A6	Guest Suites						8,916									
A7	Superintendent's Suite						29,719									
A8	Party & Board Rooms															
A9	Laundry Room						13,374									
A10	Fitness Room															
A11a	Pool - Tank															37,293
A12b	Pool - Deck															
A11c	Pool - Paint		19,219													
A14	Garbage Chute Rooms															
PG1	Parking Garage - Structure															
PG2	Podium Deck															
PG3a	Suspended Slab - Repairs	56,526														
PG3b	Suspended Slab - Replace															
L2a	Retaining Wall - Assessment															
L2b	Retaining Wall - Repairs															
L3	Interlocking	5,383									6,562					
M1	Boilers - New															
M3	Chiller												142,241			
M4a	Main Circulating Pumps - New													13,655		
M4b	Main Circulating Pumps - Original															
M5	Perimeter Heating Pump													13,655		
M6	AHU Heating Pump													13,655		
M8	DHW Heating Pump			8,401												
M9a	Force Flow Heaters - Front Vestibule			8,401												
M9b	Force Flow Heaters - Rear Vestibule and Stairs															

	Starting Balance	319,546	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	2,313	16,023	35,458	56,991	72,792	45,268	12,798	3,504	8,990	6,817	2,946	7,718	14,707	21,313	28,546
	Annual Reserve Contribution	113,266	163,266	186,123	212,180	216,424	220,753	225,168	229,671	234,264	238,950	243,729	248,603	253,575	258,647	263,820
	Other Contribution	281,438	660,000	660,000	660,000											
	Ending Balance	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874	1,102,767
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
M10	Hydronic Convectors (Baseboard Heaters)									7,030						
M11	Garage Unit Heaters				6,367											
M13a (1)	Hydronic Piping - Engineering					194,838										
M13a (2)	Hydronic Piping - Replace						728,693	743,267								
M13b	Pipe Test															
M13c	Hydronic Piping - Penthouse															
M14	Makeup Air Unit (MAU)				44,571											
M15	Main Exhaust Fan													7,609		
M16a	Pool Fan Coil Unit - Replace	10,000														
M17	Pool Exhaust Fan															
M18	Vault Fan - Replace											3,657				
M19	Garage Exhaust Fan			8,323												
M21	DHW Tank													21,560		
M23a	Domestic Water Entry - Replace						16,561									
M24a	Domestic Water Piping - Reline										534,206					
M24b	Domestic Water Piping - Replace															
M25a	Waste Piping - Sanitary															
M26	Domestic Water Booster Pump											69,483				
M27	Sump Pumps - Replacement														21,991	
M28	Standpipe & FHC's															
M29a	Sprinkler															
M29b	Sprinkler - Heads								19,918							
M30	Pool Equipment														21,991	
M31	Natural Gas															
M32a	Controls - Compressor															
M33	Elevator Room - DX Split System															
E1	Vault Replacement					523,897										
E2	Main ER 600V Splitter					16,236										
E3	Penthouse 600V Splitter							40,542								
E4	Main ER 120/208V Splitter					10,824										
E5	Condo 120/208V Riser & Panels							163,294								
E6	Penthouse 120V Distribution															
E7	Common 120/208V Panels								45,947							
E8	Ground Floor Lighting															
E9	Unit Corridor Lighting															
E10	Basement Lighting (Excluding Pool Area)															
E11	Pool Area Lighting														6,468	
E12	Stairwell Lighting													7,609		
E14a	Garage Lighting- T12 Luminaires						9,937									
E14b	Garage Lighting- T8 Luminaires															
E15	Exterior Lighting							7,883								
E18a	Emergency Generator - Recondition		10,404													
E18b	Emergency Generator - Replace															
E19	Emergency 120/208V Panel												14,920			
E20	Fire Alarm & Annunciator Panels		31,212													

	Starting Balance	1,102,767	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	35,282	39,599	45,395	54,439	59,542	56,596	57,748	66,700	77,128	84,628	83,561	84,356	92,329	101,458	112,245
	Annual Reserve Contribution	269,096	274,478	279,968	285,567	291,278	297,104	303,046	309,107	315,289	321,595	328,027	334,587	341,279	348,105	355,067
	Other Contribution															
	Ending Balance	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377	4,002,861
Item	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
M10	Hydronic Convectors (Baseboard Heaters)															
M11	Garage Unit Heaters															
M13a (1)	Hydronic Piping - Engineering															
M13a (2)	Hydronic Piping - Replace															
M13b	Pipe Test															
M13c	Hydronic Piping - Penthouse											34,863	35,560	36,271	36,997	
M14	Makeup Air Unit (MAU)															
M15	Main Exhaust Fan															
M16a	Pool Fan Coil Unit - Replace															
M17	Pool Exhaust Fan											4,922				
M18	Vault Fan - Replace															
M19	Garage Exhaust Fan								12,368							
M21	DHW Tank															
M23a	Domestic Water Entry - Replace															
M24a	Domestic Water Piping - Reline															
M24b	Domestic Water Piping - Replace															
M25a	Waste Piping - Sanitary	48,451					53,494					59,062				
M26	Domestic Water Booster Pump											93,515				
M27	Sump Pumps - Replacement														29,597	
M28	Standpipe & FHC's										291,127					
M29a	Sprinkler											328,121				
M29b	Sprinkler - Heads															
M30	Pool Equipment														29,597	
M31	Natural Gas														29,597	
M32a	Controls - Compressor					8,741										
M33	Elevator Room - DX Split System					8,741										
E1	Vault Replacement															
E2	Main ER 600V Splitter															
E3	Penthouse 600V Splitter															
E4	Main ER 120/208V Splitter															
E5	Condo 120/208V Riser & Panels															
E6	Penthouse 120V Distribution		15,101													
E7	Common 120/208V Panels															
E8	Ground Floor Lighting															19,534
E9	Unit Corridor Lighting													58,034		
E10	Basement Lighting (Excluding Pool Area)			12,602												
E11	Pool Area Lighting															
E12	Stairwell Lighting															
E14a	Garage Lighting- T12 Luminaires															
E14b	Garage Lighting- T8 Luminaires						13,374									
E15	Exterior Lighting															
E18a	Emergency Generator - Recondition															
E18b	Emergency Generator - Replace							68,205								
E19	Emergency 120/208V Panel															
E20	Fire Alarm & Annunciator Panels								46,379							

	Starting Balance	319,546	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874
	Total Expenses inflated at 2% annually	274,862	103,020	302,756	50,938	758,244	1,659,433	1,041,700	58,353	46,866	589,181	165,174	14,920	36,779	64,422	18,473
	Interest at 3% annually	2,313	16,023	35,458	56,991	72,792	45,268	12,798	3,504	8,990	6,817	2,946	7,718	14,707	21,313	28,546
	Annual Reserve Contribution	113,266	163,266	186,123	212,180	216,424	220,753	225,168	229,671	234,264	238,950	243,729	248,603	253,575	258,647	263,820
	Other Contribution	281,438	660,000	660,000	660,000											
	Ending Balance	503,982	1,240,251	1,819,076	2,697,309	2,228,282	834,869	31,135	205,956	402,344	58,930	140,431	381,832	613,335	828,874	1,102,767
	Fiscal Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Item		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
E22	Fire Alarm Devices			46,818												
E23	Fire Alarm Wiring			117,565												
E24	Door Entry/Intercom System									19,918						
E26	Ramp Heating						6,624									
E27	Penthouse Loose Controls						6,624									
EL2	Elevators - Machine Room Guarding		17,340													
EL3	Elevators - Modernization															
EL4	Elevators - Cab Finishes															
RFS1	Reserve Fund Study with Site Review								12,406						13,971	
RFS2	Reserve Fund Study - No Site Review					2,706						3,047				

CCC 60
Scenario 2
Final - March 21, 2016

Detailed Thirty Year Reserve Fund Cash-Flow Plan

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	Starting Balance	1,102,767	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377
	Total Expenses inflated at 2% annually	122,474	203,859	43,407	9,998	335,504	568,375	68,205	62,612	0	291,127	598,903	177,801	135,271	130,142	56,827
	Interest at 3% annually	35,282	39,599	45,395	54,439	59,542	56,596	57,748	66,700	77,128	84,628	83,561	84,356	92,329	101,458	112,245
	Annual Reserve Contribution	269,096	274,478	279,968	285,567	291,278	297,104	303,046	309,107	315,289	321,595	328,027	334,587	341,279	348,105	355,067
	Other Contribution															
	Ending Balance	1,284,672	1,394,891	1,676,846	2,006,854	2,022,171	1,807,496	2,100,085	2,413,280	2,805,696	2,920,792	2,733,476	2,974,619	3,272,956	3,592,377	4,002,861
	Fiscal Year	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Item		2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
E22	Fire Alarm Devices															
E23	Fire Alarm Wiring															
E24	Door Entry/Intercom System															
E26	Ramp Heating															
E27	Penthouse Loose Controls	8,075										9,844				
EL2	Elevators - Machine Room Guarding															
EL3	Elevators - Modernization					246,929	251,868									
EL4	Elevators - Cab Finishes					46,618										
RFS1	Reserve Fund Study with Site Review					15,734						17,719				
RFS2	Reserve Fund Study - No Site Review		3,432						3,865						4,353	

CCC 60
30 Year Reserve Fund Cash Flow Table
Scenario 2 - Final - March 21, 2016

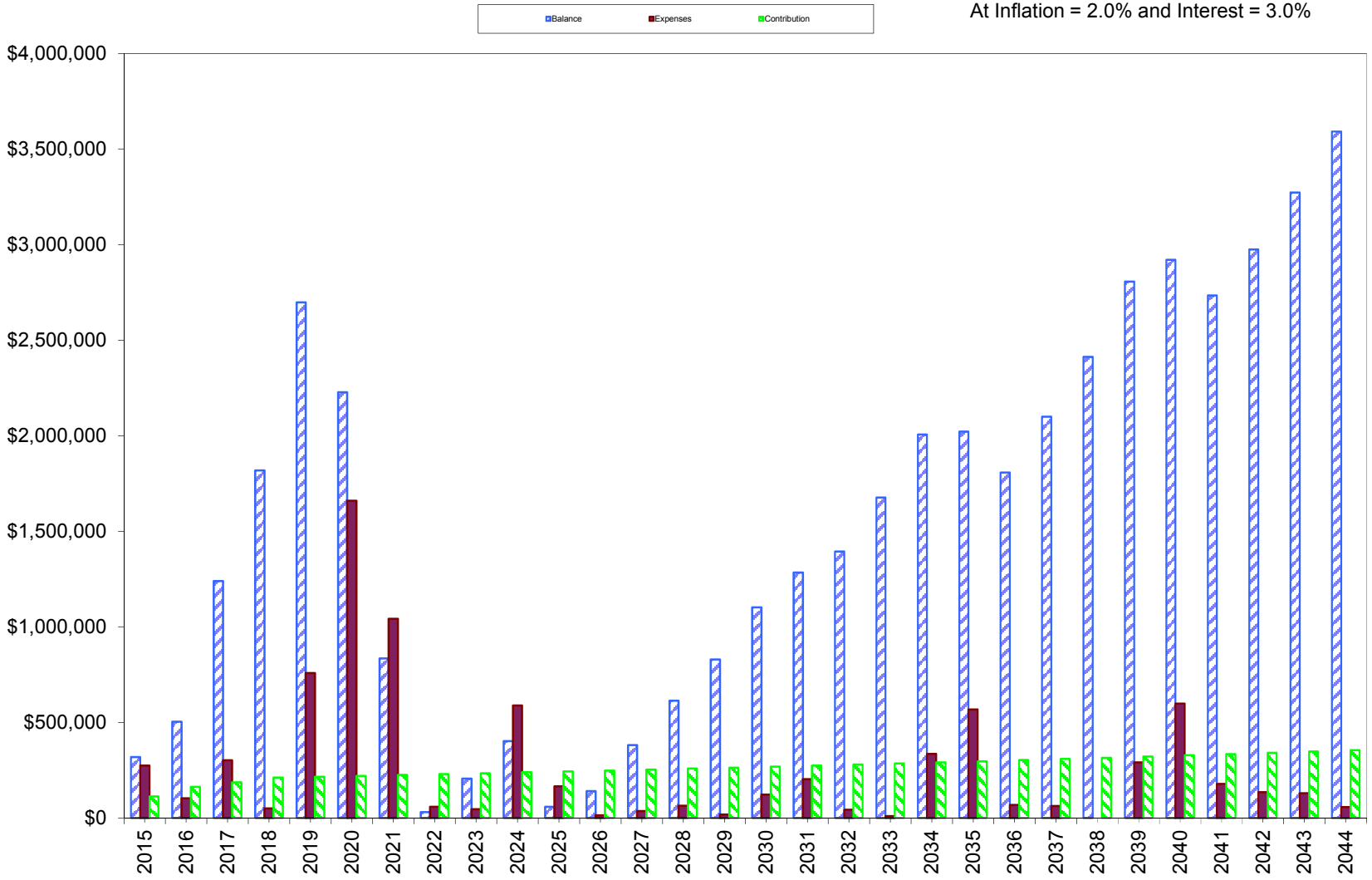
Assumed Interest Rate	3.0%
Assumed Inflation Rate	2.0%
Reserve Fund Balance at Start of 2015 Fiscal Year	319,546
Minimum Reserve Fund Balance	31,135

Year Ending In	Opening Balance	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Estimated Future Inflated Expenditures	Projected Interest Earned	Closing Balance
2015	319,546	113,266		281,438	274,862	2,313	503,982
2016	503,982	163,266	44.1%	660,000	103,020	16,023	1,240,251
2017	1,240,251	186,123	14.0%	660,000	302,756	35,458	1,819,076
2018	1,819,076	212,180	14.0%	660,000	50,938	56,991	2,697,309
2019	2,697,309	216,424	2.0%		758,244	72,792	2,228,282
2020	2,228,282	220,753	2.0%		1,659,433	45,268	834,869
2021	834,869	225,168	2.0%		1,041,700	12,798	31,135
2022	31,135	229,671	2.0%		58,353	3,504	205,956
2023	205,956	234,264	2.0%		46,866	8,990	402,344
2024	402,344	238,950	2.0%		589,181	6,817	58,930
2025	58,930	243,729	2.0%		165,174	2,946	140,431
2026	140,431	248,603	2.0%		14,920	7,718	381,832
2027	381,832	253,575	2.0%		36,779	14,707	613,335
2028	613,335	258,647	2.0%		64,422	21,313	828,874
2029	828,874	263,820	2.0%		18,473	28,546	1,102,767
2030	1,102,767	269,096	2.0%		122,474	35,282	1,284,672
2031	1,284,672	274,478	2.0%		203,859	39,599	1,394,891
2032	1,394,891	279,968	2.0%		43,407	45,395	1,676,846
2033	1,676,846	285,567	2.0%		9,998	54,439	2,006,854
2034	2,006,854	291,278	2.0%		335,504	59,542	2,022,171
2035	2,022,171	297,104	2.0%		568,375	56,596	1,807,496
2036	1,807,496	303,046	2.0%		68,205	57,748	2,100,085
2037	2,100,085	309,107	2.0%		62,612	66,700	2,413,280
2038	2,413,280	315,289	2.0%			77,128	2,805,696
2039	2,805,696	321,595	2.0%		291,127	84,628	2,920,792
2040	2,920,792	328,027	2.0%		598,903	83,561	2,733,476
2041	2,733,476	334,587	2.0%		177,801	84,356	2,974,619
2042	2,974,619	341,279	2.0%		135,271	92,329	3,272,956
2043	3,272,956	348,105	2.0%		130,142	101,458	3,592,377
2044	3,592,377	355,067	2.0%		56,827	112,245	4,002,861

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

CCC 60
30 Year Reserve Fund Cash Flow Chart
Scenario 2 - Final - March 21, 2016

At Inflation = 2.0% and Interest = 3.0%



Actual annual values for contribution, forecast expenditures, and balance can be found in the Cash Flow Table and Plan

CCC 60
Contribution Table
Scenario 2 - Final - March 21, 2016

Year	Annual Contribution*	Percent Increase over Previous Year	Other Contribution	Total Contribution
2015	113,266		281,438	394,704
2016	163,266	44.1%	660,000	823,266
2017	186,123	14.0%	660,000	846,123
2018	212,180	14.0%	660,000	872,180
2019	216,424	2.0%		216,424
2020	220,753	2.0%		220,753
2021	225,168	2.0%		225,168
2022	229,671	2.0%		229,671
2023	234,264	2.0%		234,264
2024	238,950	2.0%		238,950
2025	243,729	2.0%		243,729
2026	248,603	2.0%		248,603
2027	253,575	2.0%		253,575
2028	258,647	2.0%		258,647
2029	263,820	2.0%		263,820
2030	269,096	2.0%		269,096
2031	274,478	2.0%		274,478
2032	279,968	2.0%		279,968
2033	285,567	2.0%		285,567
2034	291,278	2.0%		291,278
2035	297,104	2.0%		297,104
2036	303,046	2.0%		303,046
2037	309,107	2.0%		309,107
2038	315,289	2.0%		315,289
2039	321,595	2.0%		321,595
2040	328,027	2.0%		328,027
2041	334,587	2.0%		334,587
2042	341,279	2.0%		341,279
2043	348,105	2.0%		348,105
2044	355,067	2.0%		355,067

* The term "annual contribution" refers to the amount contributed each year to the reserve fund from the monthly expenses.

APPENDIX E

Elevator Report

1.0 PURPOSE

In March 2015 a review of the elevator systems at 333 Chapel Street, Ottawa, was performed. The purpose of the review and this report is to determine the capital costs likely to be encountered by the Condominium, assess the operation of the elevator, note upgrades required to meet current Code[1], and to itemize maintenance deficiencies to be corrected.

2.0 DESCRIPTION OF ELEVATOR SYSTEM

The elevator system consists of two (2) traction passenger elevators operating as a duplex system.

2.1 TECHNICAL DATA

A description of technical and nameplate data is as follows:

Installation Numbers:	28528	28529
Elevator Numbers:	1	2
Class:	Passenger	
Capacity:	2,000 lbs.	1500 lbs.
Speed:	150 fpm	
Floors Served:	B, 1 - 11	
Car Door Opening:	36" wide x 84" high Single slide, side opening	
Car Door Re-opening Device:	Solid state detector	
Power Supply:	600 Volt, 3 Phase, 60 Hz	
Machine:	Geared Overhead Traction Hollister Whitney	
Hoist Motor:	*Reuland, AC* 10 HP	7.5 HP

[1] ASME A17.1-2010/CSA-B44-10 Safety Code for Elevators and Escalators

Electrical Controller:	*GAL* Magnatek, non-regenerative
Roping:	1:1
Hoist Ropes:	½", Wedge Clamp fastenings
Aux. Brake:	Hollister Whitney rope brake
Modernization Date:	Circa 2009 Regional Elevator
Maint. Contractor:	*Regional Elevator*

2.2 EXISTING CONDITIONS

The original elevator system was upgrade modern codes and standards by Regional Elevator circa 2009.

As part of this modernization the original controllers, geared machines, hoistway locking door locking equipment, car door operators, operating fixtures, overspeed governors and cab interiors were all replaced.

Fully non proprietary elevator controls were implemented meaning the condominium has a choice as far as elevator maintenance supplier. The GAL control system utilized is of very high quality.

The elevator systems are equipped with emergency recall and in-car emergency service operation. These features were not tested as a part of this review although the log books are signed to verify their operation.

The existing elevator cab interiors are in very good condition.

The elevator door protection system is a multi-beam solid state edge. Contact with the edge is not required to initiate a door re-open cycle.

3.0 MAINTENANCE

The elevators are maintained by *Regional Elelvator*, presumably under the terms of their standard full service preventive maintenance contract. As all major components of the elevator system are covered under the terms of a full maintenance program, no major capital expenditures should arise to repair these components. Exceptions to full maintenance coverage detailed in the contract, such as vandalism, mis-use etc. should be noted.

Several provisions typical to elevator contractor written documents could lead to extra costs to the equipment owner. For example:

- The obsolescence clause effectively undermines parts coverage due to vague wording including “usual sources”. Historically, elevator contractors have been reasonably fair in the application of this clause. However, occasionally elevator contractors have used similar clauses to avoid responsibility for high cost repairs. The obsolescence clause should not require the property owner to pay any more than the extra costs of replacing obsolete components;

- The contract fails to address such fundamental issues as the frequency of preventative maintenance visits, the time to be spent doing preventative maintenance monthly, a description of the preventative maintenance that the contractor will complete and the maximum permissible response time for the contractor to repair an out of service elevator or free a trapped passenger. The maintenance contract also should address the issue of elevator performance as measured by running speed, flight times, door times and noise levels. This information should be quantified now as a benchmark against which the contractor’s work can be evaluated. By failing to do so, many property owners find that they have no recourse in the instance of the maintenance contractor’s allowing the elevators to gradually deteriorate over the contract’s multi-year term.

- The document employs an “evergreen” clause that will result in the Condominium being contractually obligated for subsequent five year terms, should cancellation notice be given less than 90 days in advance of the fifth anniversary of the contract term.

Our recommendation is that the Board renegotiate the terms at the next opportunity. A better alternative would be the use of a maintenance specification and contract written to reflect the interests of the Board.

MAINTENANCE - con't

MAINTENANCE DEFICIENCIES

Listed below are deficiencies that should be corrected by the maintenance contractor under the terms of the current maintenance contract, at no additional cost to the Condominium.

Deficiencies Common to both Elevators

1. Clear cobwebs and dust from inside of the controllers.

2. Make the monitoring system operative for the controllers.

3. Confirm the in car emergency phone is operative.

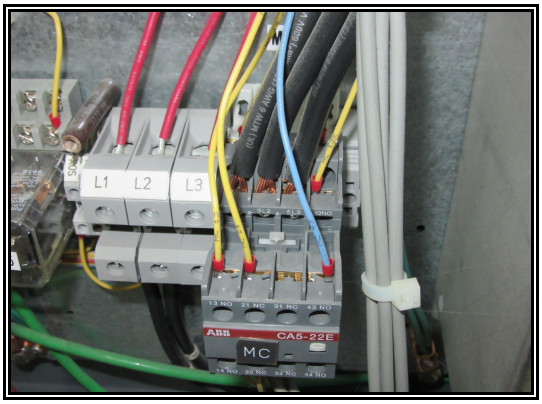
4. Apply car apron plate conformance sticker on crosshead in vicinity of the crosshead data plate.

5. Keep an up to date log of occurrences in the machine room (callback log).

6. Simplify MCP; remove tasks that are not specific to the site.

Elevator 1 Deficiencies

7. Minimize exposed conductors of high power connections at MC relay and L1, L2, L3.



4.0 VARIANCES TO CURRENT ASME A17.1-2010/CSA-B44-10 SAFETY CODE

The elevators were installed in compliance with the then-existing CAN/CSA-B44 Safety Code For Elevators. Since the date of installation, there have been only minor revisions to the Code.

5.0 PERFORMANCE DATA

The performance parameters defined on the following page below were measured. Any found not to reasonably fall within the normal range of values are listed as deficiencies in Section 3.2 of this report.

TRACTION ELEVATORS PERFORMANCE DATA

PARAMETER	REQUIRED	ELEVATOR 1	ELEVATOR 2
Car Speed UP	**150 fpm ± 5%**	138	141
Car Speed DOWN	**150 fpm ± 5%**	139	142
Average Accel. UP	**0.03 g**	0.05	0.05
Maximum Jerk Rate	≤ **8 f/s_3**	5	7
Flight Time UP	≤ **13.0 sec.**	14.0	13.5
Flight Time DOWN	≤ **13.0 sec.**	14.1	13.9
Door Time-out	**20 sec.**	19	20
Door Stall Force	≤ **30 lbs**	23	24

TABLE DEFINITIONS

Car Speed:
The normal maximum running speed of the elevator, measured in both the up and down directions. The measured value is compared to the design speed of the elevator system.

Flight Time:
The time elapsed for an elevator to serve two consecutive floors, in either the up or down direction, measured from the time the elevator doors begin to close until they are 3/4 open at the next floor. The flight time measurement is compared to a maximum suggested value which is determined by parameters such as car speed, elevator door type and building floor heights.

Average Acceleration:
The average acceleration experienced in the car when approaching top speed. The acceleration measurement is compared to a suggested value which is dependent on the type of elevator system - hydraulic, geared or gearless.

Maximum Jerk:
The maximum change in acceleration experienced in the car over the ride including start, acceleration, deceleration and stop. The Jerk measurement is compared to a suggested value which is dependent on the type of elevator system - hydraulic, geared or gearless.

Door time-out:
The time elapsed from the initiation of a door re-open cycle until the time any light activated door protection device times itself out. The door time-out setting should be 20 seconds.

Door Stall Force:
The force exerted by the elevator car door, during a door close cycle but after the door has been manually brought to a stop. The force is measured while the door is approximately 1/3 closed. The measured force is compared to the maximum force allowed by The CSA Safety Code For Elevators.

6.0 RECOMMENDATIONS AND COSTS

Short Term

The Ministry of Labour (MOL) in Ontario has increased its roster of field inspectors resulting in increased attention on elevator machine rooms. Reliance upon a locked elevator machine room door or restricted access policy is no longer considered sufficient safeguard against the hazards presented by unguarded elevator machinery. Regardless of a building's age or function the elevator machine room equipment requires guarding to OHSA standards, in the view of MOL. This standard exceeds the usual guarding provided on even new projects by the elevator industry and as accepted by the elevator safety authority – The TSSA. There is no specific deadline for conformance and appears to be little active enforcement of the standard, however we would caution building owners that non-conformance represents increased liability in case of an injury sustained in the elevator machine room. Guarding of elevator machine room hazards to OHSA / MOL standards and including the required TSSA paperwork is likely to cost $7,500 per elevator.

We recommend that the deficiencies of Section 3 of this report be referred to the maintenance contractor for their corrective action. We would suggest 90 days as a reasonable time frame for them to complete the deficiencies. The elevators were operating as designed and should not require any upgrades in the foreseeable future.

Long Term

As almost all of the major components of the existing elevator system are covered under the terms of a full maintenance program, there should be no major capital expenditures to replace or repair these components. Notable exceptions are vandalism and replacement of obsolete parts. Another common source of extra costs occurs when one maintenance contractor’s services are terminated by the property owner (or the contractor themselves terminate their contract). This can lead to a new contractor requiring extras to the monthly maintenance fee to cover major components left in poor condition by the outgoing contractor. Vigilant ongoing policing of the performance of the maintenance contractor is an effective method of avoiding this source of extra costs.

If these elevators are properly maintained under the terms of full maintenance contract, they should continue to operate in a safe and acceptable manner for approximately another twenty (20) years. At such time the existing drive control system, machine and controllers may require replacement. A modernization typically involves the installation of a new micro-processor based controller, the installation of a solid-state motor drive and machine, and other renewals of the wiring and fixtures. This modernization would cost approximately $150,000 per elevator (total $300,000). This upgrading cost for the existing elevator includes all associated work to ensure the elevator fully comply with the latest edition of the CSA Safety Code for Elevator (Section 4.0 of this report).

Normally, cab interiors are renewed periodically for aesthetic reasons. We recommend allowing funds for cab work in approximately fifteen years. A full cab "modernization" could cost $14,000 per cab if done without particularly expensive materials such as bronze or marble.

Periodically the Technical Standards and Safety Authority (TSSA) mandates remedial work that must be carried out on various types of elevator. As these rulings become enforced, the cost to ensure the elevator comply with the Rulings is the responsibility of the condominium. A contingency fund of $3,000 every five years should be established to cover the cost of any future mandatory work.

7.0 PROJECTED CAPITAL COST TABLE

Year / Predicted Work	1-5	6-10	11-15	16-20	21-25	26-30
Future mandatory work required by B44 Safety Code	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
Complete modernization of existing elevators including B44 Code upgrades and cab interiors				$ 300,000		
Upgrade of cab interior finishes (discretionary)				$ 28,000		

Notes of Costs: HST not included;
Based on year 2015 dollars;
Work not the responsibility of the elevator trade not included.

- end of report -