Building Condition Assessments

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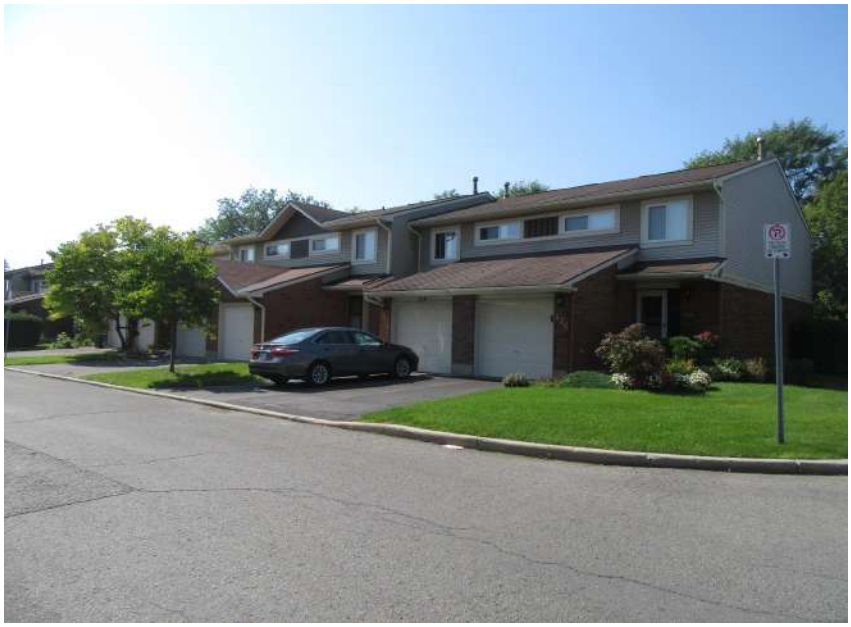
Comprehensive
Reserve Fund Study
for
Carleton Condominium Corporation No. 276



Draft Report Prepared For

Carleton Condominium Corporation No. 276
% Mr. Stefan Novak, Condominium Management Group

October 5, 2017

Project L2690

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EXECUTIVE SUMMARY

Overall, the common elements of CCC 276 are in satisfactory condition. However, several elements will require major repair or complete replacement within the next several years, due to normal life cycle renewal of aging common elements.

Based on the predicted expenditures listed in the spreadsheet and the current reserve fund finances, the corporation is adequately funded such that only inflationary increases in annual contributions should be required to pay for all foreseeable major expenditures, as they occur over the next 30 years.

The following table lists the major common element renewal work scheduled for completion over the next ten years, excluding sewer contingencies, repairs to wood balcony decks, and allowances for as-required driveway reconstruction and entrance door replacement.

Item Description	Projected Years of Work
Asphalt Shingle Roof Replacement	2018
Grounds Lighting Replacement	2020
Reconstruction of Asphalt Roadway and Visitor Parking	2020
Reconstruction of Remaining Driveways	2020
Reconstruction of Asphalt Walkways	2020
Concrete Curb Repairs	2020
Repairs to Isolated Paver Stone Walkways and Precast Concrete Steps	2020
Replacement of Wood Privacy Fences	2021 to 2022
Exterior Painting	2021
Front Entrance Door Replacement	2023

All of the above major capital expenditures reflect normal replacement of common elements as they age.

CONTENTS

1. INTRODUCTION

This Reserve Fund Study is a technical and financial assessment of the common elements of the condominium corporation for the purpose of:

- assessing the condition of the common elements
- forecasting and planning for major capital expenditures over the short and long term
- recommending annual reserve fund appropriations.

In this Reserve Fund Study, we outline our findings regarding the current condition and immediate maintenance and repair requirements for all of the common elements. In addition, we outline the repair and replacement work that we expect will be required over the 30-year period that we examine in this report, including all associated costs. Included in the repair/replacement data is an inventory of the quantities of all common elements that will be subject to replacement work over the life of the corporation. Finally, all anticipated expenditures over the next 30 years are outlined in a detailed spreadsheet, and we provide our recommendation for annual reserve fund appropriations. While this report includes our recommendations for the timing of repair/replacement work and for annual reserve fund contributions, these decisions are ultimately made by the Board of Directors of the condominium corporation.

2. DESCRIPTION OF COMPLEX

Carleton Condominium Corporation No. 276 is a 33-year old complex consisting of 79 two-storey townhouses in twelve blocks of four to eight units per block, plus a small condominium office building. The complex is located on Sandhamm Private, in the east Hunt Club area of Ottawa.

The townshouses consist of cast-in-place concrete foundation walls and footings, with wood-framed walls, floors, and roofs. Brick masonry veneer clads the first floor fronts of the houses while all other walls are clad with a combination of aluminum siding, hardboard siding and wood trim. The roof system consists of gable-style roofs covered with asphalt shingles, while many of the units also have mansard roofs at the front and rear. The roofs are trimmed with aluminum soffits and fascias, and roof drainage is provided by aluminum eavestroughs and downspouts. Windows, patio doors and front entrance doors complete the exterior of the buildings. Most units have wood porches at the rear, although only the standard 5' x 8' decks are common elements, as larger custom decks are the responsibility of the individual unit owners. The common elements of each unit also include water taps and exterior electrical fixtures, such as lights and outlets.

The common property elements also include all site services (such as water supply, electrical supply, sewer systems, and grounds lighting), paved driveways, visitors' parking lots, walkways, concrete curbs, landscaped grounds, and wood privacy fences.

3. DESCRIPTION OF WORK ACTIVITIES

3.1 Review of Background Information

The first step of a Reserve Fund Study is to become familiar with the complex, and reviewing all available background information about the corporation is a key part of this first step. Before each project begins, we review (as applicable) all drawings and specifications, the current budget, the Auditor's Reports from past years, the past Reserve Fund Study (if one exists), past consultants' reports prepared over the previous several years, the corporation's Declaration and By-laws, warranties for repair and replacement work completed, the repair and maintenance schedule and records, any lists that the Board may have prepared regarding concerns and/or planned repair/replacement work.

3.2 Condition Assessment and Forecasting of Renewal Work

After the background information is reviewed, we carry out visual inspections of readily accessible common elements. The main purpose of the site inspections is to determine the current condition of the common elements. Assessing the current conditions leads directly to determining the maintenance, repair and replacement work that will be required in the near future. In addition, the site assessment of the common elements provides key information regarding when repair and replacement work will be required over the medium to long term. Such information could include the type and quality of materials, the quality of maintenance, the past rate of deterioration, and the expected rate of deterioration in the future. Together, this information enables us to predict approximately when future repair and replacement work will be required. In addition to assessing when work will be required, the site inspections help establish what type of work will be required, what special conditions will affect the work, and how much the work should cost.

3.3 Calculation of Repair and Replacement Costs

After determining the major repair and replacement work to be required over the next 30 years, next we estimate the costs of all projected work. After determining the nature of each work item, the next step is to take an inventory of the common elements. This inventory work is accomplished by measuring the quantities of the common elements using the drawings and, where necessary, by taking site measurements. For each type of renewal work that is forecasted, the total quantity of the common element is determined (such as area of roofing or siding) so that the total value of this element can be determined later. For an Updated Study, the majority of the quantities would have been determined during completion of an earlier Study, so an Updated Study normally will require quantity calculations only for new findings and recommendations.

Once the type and quantities of the renewal work are known, the last step is to calculate the costs of all renewal work. For most items, the total construction costs are determined by multiplying the total quantity of the element by the expected unit price for the work of concern. For example, if the area of asphalt paved roadway at the corporation is 6,000 m^2 and the typical unit price for a pavement overlay is \$15/m^2, then the total estimated costs for roadway overlay will be \$90,000. While this seems simple, the key part of reliable cost estimation is that the unit price must be an accurate reflection of what the costs will be for the particular work of concern and at that particular condominium corporation.

To ensure that the unit prices used in the calculations are appropriate, we compare the work at the complex to a data base listing of unit prices that we have compiled from many projects that we have been involved with over several years of experience. This list was compiled, and is regularly updated, using actual contract prices and job specific cost estimates for all types of work that are typically required at a condominium complex. If there is a unique type of repair work for which costs must be estimated, we determine the general nature of the work and employ the assistance of an experienced contractor to estimate the costs of the work that we have laid out. All major capital expenditures outlined in the spreadsheet are estimated according to the current year's costs. In addition, all budget estimates account for HST at it's current rate.

3.4 Development of the Spreadsheet

The main purpose of the spreadsheet is to determine the recommended annual contributions that should be made to the reserve fund. The spreadsheet assists with this recommendation by providing a vehicle for which all important data can be combined into a calculation of all future costs and contributions.

Reserve Fund Data and Calculations:

The first step in preparing the spreadsheet is to enter all startup financial information, such as year reserve fund balance and the current annual contributions. Since the spreadsheet also requires an amount input as the recommended future contributions, we set that amount to equal the current contributions; simply as an initial trial figure.

Next, we input all budgeted expenditures into the spreadsheet, with each figure placed according to the work to be performed and the year the work is expected to be required. To make the spreadsheet easier to follow, all costs included in the spreadsheet are in today's dollars, with inflation accounted for only after the total yearly expenditures are calculated. (The figure below the first double-line is the total yearly expenditures before inflation, while the next figure down is the total after accounting for inflation.)

With the above data entered, the formulae within the spreadsheet automatically calculates the cash flow for the corporation. For each year, the total amount of money remaining in the reserve fund is shown in two ways. The second figure from the bottom is the amount remaining in future dollars - that is, the "actual" amount remaining in that year if all assumptions are correct. To relate all of these figures to today's value of the funds, the bottom figure represents today's equivalent of that future amount, with inflation removed. (The earned interest for each year is calculated using iteration formulae by applying the interest rate to the average reserve fund balance over each year.)

As stated previously, the current contributions are first tried as the future contributions. If this funding level sufficiently covers all anticipated expenditures, then contributions do not need to be increased. Where sufficient funds do not exist using the current contribution level, then the contributions must be increased to a level that does cover all anticipated costs. Sometimes contributions are immediately increased to the required level, while in other cases the increase may be phased in over a few years.

Often a situation occurs where the contribution level is adequate, on average, but there are certain years when there are insufficient funds. In such cases, priorities have to be established that results in some work being delayed until there will be sufficient funds to pay for the work, but without increasing funding levels further.

In extreme cases, the corporation may be significantly short of funds and the only way to raise such funds in time is to recommend a special assessment. While a special assessment is a last resort, it is sometimes required. As with phasing in increases in contributions, it is sometimes possible to levy a special assessment that is collected gradually over a few years.

Explanation of Inflation and Interest Rates:

To ensure that the recommendation for annual contributions is as reliable as possible, inflation and earned interest are accounted for in the spreadsheet. Prior to 1992, inflation rates have been hard to predict, with inflation averaging 1.4% from 1952 to 1965, then averaging over 4% for several years before averaging over 10% from '74 to '82 and then back to averaging over 4% from '83 to '91 (when the GST was introduced). However, since 1991, inflation has averaged less than 2%, with only three years having inflation greater than 2.5% (including 2.9% in 2011). Based on this 20-year average of inflation under 2%, our standard approach is to assume an inflation rate of 2.0% for use in the spreadsheet. Even though inflation surpassed this level a few times in the last several years, inflation has averaged less than 2% over the past 20 years, so assumed inflation of 2.0% is used to account for typical trends over the long term. Furthermore, it is generally believed that inflation is slightly over-reported due to the review not fully reflecting our modern economy (with Statistics Canada currently reviewing and revising the formulae to determine the Consumer Price Index), so we believe that an assumed inflation rate of 2.0% should be slightly conservative over the long term.

Interest also is accounted for in the spreadsheet because unused reserve funds are invested, earning interest that is added to the reserve fund. Even on the low risk investments allowed by The Condominium Act, interest earned historically has generally been greater than inflation. As such, earned interest generally "should" be greater than 2% over the long term, even though, in recent years, interest earned by reserve funds has been less than inflation. Based on these factors, our standard approach is to assume that earned interest will also average 2.0%, as a balance between recent experience with low earned interest and the historical trend of interest being greater than inflation.

While an inflation rate of 2.0% and an interest rate of 2.0% may not apply over the long term, or may not even reflect the exact conditions that exist today, these rates should represent reasonable long term averages, and therefore, any variations in actual inflation and interest rates should not have a significant effect on the spreadsheet. Furthermore, with this Study being updated every three years, any effect caused by differing interest and inflation rates can be accounted for in the next Study Update. However, where desired, we will account for client requests to include rates more reflective of current rates.

3.5 Assumptions and Limitations

This report is based only upon visual inspections and a review of the available background information. No quantitative performance testing of any kind has been performed. Therefore, no review has been made regarding the specific performance level of the common elements, or whether individual building elements meet the Ontario Building Code requirements that applied at the time of construction. Furthermore, it is important to note that the review of drawings is not a review of the project design.

Because of the above limitations of this Study, the accuracy of the findings, cost estimates, repair forecasts, life expectancy projections, and our recommendations are limited to the information available at the time of preparing this report. In addition, the timing and costs for all expenditures are based on the assumption that all common elements will be well maintained over the life of the corporation and that all elements will perform according to normal standards. If the complex is not well maintained, the corporation is likely to suffer reduced building element performance and life expectancy, thereby increasing and accelerating repair and replacement costs.

4. FINDINGS AND RECOMMENDATIONS

In this section of the report, we outline our findings and recommendations regarding the common elements, with each category of common element discussed within separate subsections. Specifically, each subsection outlines the following information about the common elements:

- findings regarding their current condition
- quantities (as appropriate)
- description of the expected repair and replacement work that will be required
- estimates of when repair and replacement work will be required
- estimates of the costs of repair and replacement work
- advice regarding general repair or replacement procedures that should be followed.

4.1 Site Services

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Catch Basins & Sewer Covers	Good	repairs / adjustments included in costs of complete repaving				
Main Utilities	N/A	no major repairs expected during life of complex				
Sewer System	Assumed as Good	N/A	$6,000 every six years, starting in 2018		N/A	N/A
Grounds Lighting	Satisfactory	7 light standards	as required using general contingencies allowance		2020	$14,000
Exterior Building Light Fixtures	Excellent	237			2029 & 2030	$18,000 (total cost)

Catch Basins, Sewer Covers, Sewer System and Main Utilities

The major site services contained within the limits of the corporation's property include the supply of all utilities as well as the storm and sanitary sewer systems. Unless conditions indicate that problems exist, such that there is the potential for eventual major repair or replacement, it is expected that these elements should last the life of the complex (i.e. potentially up to 100 years), without any major work required. Since there are currently no reported problems with the site services, no costs are budgeted specifically for major repair or replacement of these elements during the 30-year period examined in the spreadsheet. Nevertheless, the sewers should not be ignored based on the assumption that problems do not exist and that no problems will develop over time, because minor sewer problems are not uncommon. Instead, sewers should be inspected periodically using a remote camera to ensure that everything is functioning properly, and to ensure that minor sewer problems that might develop are detected early, so that major problems are averted or at least minimized. If the sewer inspection reveals problems, repairs should be carried out or a program of periodic sewer flushing should be implemented. That said, we budgeted for periodic sewer inspections to be carried out every six years starting in 2018, at an estimated cost of $6,000 each time.

Typical sewer problems that can develop include minor sumps (i.e. sags that cause ponding in the sewer lines, thereby impeding proper flow) or breaks in the sewer line. Sumps are generally addressed through regular pumping of problem areas. It is especially important to consider that if inspections are not conducted, major problems may develop that go unnoticed. These problems could increase to the point that major repairs are required, instead of only minor repairs had the problems been detected earlier.

Grounds Lighting

The grounds lighting system is in generally satisfactory condition but should be renewed in conjunction with the asphalt paved roadway and parking lot reconstruction. That way, access to underground wiring is easily achieved without disturbing any newly placed asphalt. Renewal of the grounds lighting will likely include as required replacement of the posts, fixtures, and some of the wiring. Complete renewal of the grounds lighting is expected to cost $14,000, and this work is budgeted in 2020, to coincide with the asphalt renewal work.

Exterior Building Light Fixtures

Most of the exterior building light fixtures are in satisfactory condition. While exterior light fixtures are often replaced by individual owners, this owner replacement approach typically occurs in an ad hoc manner over many years, and is not done at all by many owners. However, in order to achieve consistency in appearance, we recommend that all exterior building light fixtures be replaced when the siding is replaced in 2029 and 2030, at an estimated total cost of $18,000.

4.2 Pavement and Concrete

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Asphalt Roadways and Visitor Parking	Fair	2,650 m^2	as required using general contingencies allowance		2020 2035	$145,000 (reconstruct) $70,000 (overlay)
Asphalt Driveways	Very Good to Poor	1, 475 m^2	2017 2018 & 2019	$6,500 $5,000 (each time)	2020 2040	$40,000 $70,000
Asphalt Walkways	Fair to Poor	400 m^2	as required using general contingencies allowance		2020 & 2040	$24,000 (each time)
Concrete Curbs	Satisfactory	700 m	2020 & 2035	$20,000 (each time)	beyond 2047	$70,000
Paver Stone Walkways & Precast Concrete Steps	Satisfactory	N/A	2020 & 2040	$15,000 (each time)	N/A	N/A

Asphalt Roadways & Visitor Parking

The asphalt paved roadways and visitor parking is in overall fair condition. As such, we budgeted $145,000 to reconstruct the pavement in 2020. This work generally involves excavating the existing pavement, adding new granular base as required, compacting and grading the base, and installing new pavement. The reconstructed pavement should provide 15 years of reliable service, after which time an overlay will likely be required. Accordingly , we budgeted $70,000 to overlay the pavement in 2035.

Asphalt Driveways

The paved driveways vary from very good to poor condition. Approximately five driveways each year have been replaced over the last few years, and these driveways are in good condition. However, the remaining driveways are in fair condition as they display deterioration, cracking and settlement. Therefore, to continue with the Board's approach, we budgeted $5,000 in 2018 and 2019, to replace around five driveways each year. In 2020, we budgeted $40,000 to replace all remaining driveways in conjunction with the asphalt roadway reconstruction work. The new driveways should provide about 20 years of reliable service when reconstruction will again be required. Therefore, we budgeted $70,000 to replace all driveways a second time in 2040.

Asphalt Walkways

The asphalt walkways are in fair to poor condition as they exhibit cracking, heaving and deterioration. Therefore, in conjunction with the pavement reconstruction in 2020, we budgeted $24,000 to reconstruct the asphalt walkways. The reconstructed pavement should provide a service life of 20 years when another renewal will be required. As such, we budgeted another $24,000 in 2040, to reconstruct the asphalt walkways a second time.

In between pavement renewal/reconstruction, asphalt maintenance repairs should be carried out as required in order to prolong the life of the pavement. No funds are included in the reserve fund spreadsheet for these minor maintenance repairs, as it is assumed that the cost of this work will be covered using funds from the general contingencies allowance.

Concrete Curbs

The cast-in-place concrete curbs are in overall satisfactory condition, but with isolated sections in poor condition due to damage and/or deterioration. To properly repair major curb damage, deteriorated sections must be cut out and replaced, which also involves repairing adjacent areas of asphalt pavement. As such, concrete curb repairs should be performed in conjunction with the roadway reconstruction work. Therefore, we budgeted an allowance of $20,000 in 2020 and 2035, for replacement of damaged sections of concrete curb.

Paver Stone Walkways & Precast Concrete Steps

Both the precast concrete entrance landings at front entrances, and the paver stone walkways that lead from the landings to the driveways are in generally good condition, and should provide many more years of service. However, to cover the cost for the replacement of occasional cracked pavers stones and to repair isolated concrete steps, we budgeted $15,000 in 2020 and 2040.

4.3 Landscaping

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Drainage Patterns	Good	no major costs expected during life of complex				
Trees, Shrubs and Sod	Good	N/A	as required using contingencies allowance		N/A	N/A

Drainage Patterns, Trees, Shrubs and Sod

The landscaped grounds are in overall good condition. All maintenance costs for the landscaping should be covered by the general contingencies allowance, including tree pruning, isolated sod and topsoil replacement.

4.4 Wood Balcony Decks and Privacy Fences

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Wood Balcony Decks and Guardrails	Fair to Satisfactory	31	$6,000 every three years starting in 2018		beyond 2047	$50,000
Wood Privacy Fences	Fair	15 m^2	as required using general contingencies allowance		2021 & 2022 2041 & 2042	$90,000 (total each time)

Wood Balcony Decks and Guardrails

It was reported that only the standard 5' x 8' decks are original and part of the common elements, whereas the larger custom decks were installed by owners and are now the responsibility of the individual unit owners. It was further reported that only 31 original decks remain. These wood decks were found to be in fair to satisfactory condition, so with as-required maintenance and repairs performed, including replacement of posts and framing members, the decks could be made to last many more years. Therefore, in keeping with this approach, we budgeted an allowance of $6,000 every three years, starting in 2018, to maintain and replace deck elements, as required.

Wood Privacy Fences

The stained wood fences are in fair condition, since they exhibit deteriorated boards and loose and/or leaning posts. In addition, the fences are not of a sturdy design and significant post bottom deterioration was observed due to grass trimmers and wood decay. Therefore, we budgeted for the fences to be replaced in 2021 and 2022, at a total cost of $90,000. The new fences should provide around 20 years of service before replacement will again be required, so we budgeted another $90,000 to replace the fences a second time in 2041 and 2042.

4.5 Foundation Walls

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Foundation Walls and Parging	Satisfactory	N/A	as required using general contingencies allowance		N/A	N/A

The foundation walls and parging are in satisfactory condition and should provide service throughout the life of the complex. Parging and isolated foundation repairs should be carried out as required using funds from the contingencies allowance.

4.6 Cladding

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Brick Masonry Veneer	Satisfactory	N/A	as required using general contingencies allowance		N/A	N/A
Siding & Trim	Satisfactory	4,100 m^2			2029 & 2030	$500,000 (total cost)

Brick Masonry Veneer

Overall, the brick masonry veneer is in satisfactory condition, and only minor deteriorated mortar joints and isolated spalled bricks were observed in localized areas. Brick masonry repairs should be conducted, as required, using funds from the contingencies allowance. With minor repair and maintenance work performed on the brick masonry, no significant masonry expenditures are anticipated in the 30-year scope of the Study.

Siding & Trim

The existing aluminum siding, hardboard siding and wood trim was observed to be in satisfactory condition, as the siding is well maintained. If diligent maintenance continues, the siding and trim should provide another 10 to 15 years of service before complete replacement is required. As such, we budgeted a total of $500,000 during 2029 and 2030, to replace the aluminum siding and hardboard siding with vinyl siding, and to cap the wood trim with metal flashing.

4.7 Painting and Caulking

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Painting	Satisfactory	N/A	as required using general contingencies allowance		2021	$30,000
Caulking	Fair to Good	N/A	as required using general contingencies allowance			

Painting

Exterior painted and stained common elements include hardboard siding, wood trim and wood privacy fences. Although the stain on the fences is in fair condition, the fences will be replaced within the next few years, so we did not budget any funds to re-stain the fences. The exterior paint on the hardboard siding and wood trim is in satisfactory condition and painting of these elements will not be required for another few years. Therefore, we budgeted $30,000 for complete repainting of building elements in 2021. After 2021, repainting and staining needs will be eliminated, as fences and siding will be replaced with PT pre-treated or pre-finished products that will not require painting, thereby eliminating painting and staining costs.

Caulking

Exterior caulking ranges from fair to satisfactory condition. Caulking around the perimeter of windows and patio doors was noted to be in satisfactory to good condition, while the caulking at cladding joints is in fair condition. Therefore, during the next painting program, as required caulking replacement should be conducted using funds from the general contingencies allowance. Once caulking touch-ups are conducted, only a limited amount of caulking will require renewal, as most of the caulking will be replaced with the siding and window replacement work. Therefore, no funds for replacement of caulking are budgeted in the spreadsheet. Localized calking repairs should be carried out using funds from the general contingencies allowance.

4.8 Windows and Doors

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Windows	Satisfactory	328	as required using general contingencies allowance		2033 & 2034	$276,000 (total cost)
Sliding Glass Patio Doors	Good	79			2036	$145,000
Front Entrance Doors	Fair to Excellent	79			2017 2018 to 2022 2023	$10,075 $18,000 (each time) $135,000
Garage Doors	Satisfactory	79			2033	$80,000

Windows

The vinyl framed windows were replaced in 2005 and are in overall satisfactory condition. Vinyl framed windows should provide 25 to 30 years of service, after which time replacement will be required. Therefore, we budgeted a total of $276,000 to replace the windows in 2033 and 2034.

Sliding Glass Patio Doors

The vinyl framed sliding glass patio doors were replaced in 2010 and are in good condition. Normally, patio doors will provide about 25 years of service, after which time replacement will be required. Therefore, we budgeted $145,000 to replace the sliding glass patio doors in 2036.

Front Entrance Doors

A few front entrance doors have been replaced in recent years and are in excellent condition. However, the remaining original front entrance doors are approaching the end of their expected service life and will require replacement within the next ten years. Therefore, we budgeted $18,000 per year between 2018 and 2022, for as required replacement of front entrance doors. In addition, $135,000 is budgeted in 2023 to replace all remaining original doors. The new doors will provide 35 to 40 years of service before replacement is again required, so no further amounts for replacement have been budgeted in the 30-year period of this Study.

Garage Doors

The overhead garage doors are in satisfactory condition and should provide about 15 years of reliable service, so we budgeted $80,000 to replace all garage doors in 2033. Normally, overhead garage doors will provide about 25 years of service, so no further amounts for replacement have been budgeted in the 30-year period of this Study.

4.9 Asphalt Shingle Roofs and Attics

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Asphalt Shingle Roofing	Poor to Excellent	8,700 m^2	as required using general contingencies allowance		2017 2018 beyond 2047	$80,075 $70,000 $400,000
Attics	Satisfactory	N/A			N/A	N/A

Asphalt Shingle Roofing

The main asphalt shingle roofs and mansard roofs are being replaced in a phased approach, and therefore range from fair to excellent condition. The final phase is budgeted for replacement in 2018, at an estimated cost of $70,000. Since a 40-year fibreglass shingle is being installed, the shingle roofs should provide about 35 years of service before replacement is again required. As such, no further funds have been budgeted for replacement of the asphalt shingle roofs in the spreadsheet.

In order to maintain the roofs in satisfactory condition such that they provide reliable service throughout their life, the roofs should be inspected every spring to look for and repair minor wear and tear issues, before these issues result in leaks and/or major repairs. Hiring a contractor to conduct these basic inspections and repairs will be fairly inexpensive, and the preventative work will extend the service life of the roofs and will likely prevent most major problems.

Attics

Several attic spaces were inspected and noted to be in overall satisfactory condition, with only minor deficiencies of concern. All attics inspected had relatively low insulation levels in comparison to today's Ontario Building Code standard of R50, which has an insulation depth of about 18". As such, some owners may want to upgrade insuolation to today's standard. All attic hatches were well insulated, but some perimeter gaskets were noted to be in poor condition. Based on our observations inside these attics, no significant moisture problems were noted during our review, and no issues were reported by owners. Therefore, no major attic work is anticipated throughout the remaining life of the complex. If any maintenance related work is required, such work should be paid for using funds from the general contingencies allowance.

4.10 Soffits and Fascias

Item Description	General Condition	Estimated Quantities	Major Repair		Complete Renewal	
			Year	Costs	Year	Costs
Aluminum Soffits	Satisfactory	1,050 m^2	as required using general contingencies allowance		2029 & 2030	$54,000 (total cost)
Aluminum Fascias	Satisfactory	3,450 m			2029 & 2030	$70,000 (total cost)

Aluminum Soffits & Fascias

The aluminum soffits and fascias are in satisfactory condition and should provide many more years of service before replacement is required. Therefore, in conjunction with the siding replacement in 2029 and 2030, we budgeted at total of $124,000 to replace the aluminum soffits and fascias.

4.11 General Contingencies Allowance

In order to cover regular repair costs that are difficult to predict and budget for, an annual contingency allowance is budgeted in the reserve fund. The contingency allowance is intended to cover isolated and unpredictable costs relating to important reserve fund repair and replacement work. Based on past reserve fund expenditures and the upcoming major renewal work, an annual contingency allowance of $3,000, starting in 2018, is budgeted throughout the 30-year forecast of this Study. It is recommended that the actual amount of funds used for contingencies be monitored over the next few years to determine if the amount budgeted actually reflects the corporation's requirements. If it is deemed that the contingency allowance is either too high or too low, then adjustments can be made to the contingency contribution level during future updates.

4.12 Engineering Fees

Potential costs for engineering fees also are included in the spreadsheet. Engineering fees related to the major repair or replacement of common elements should be paid out of the reserve fund, since such fees are directly related to the common element renewal. To account for such costs, a ballpark cost estimate of such fees is included in the spreadsheet for repair items where the services of an engineer are likely to be used. **It is very important to note that the budgeted amounts are only very rough "guesstimates" of fees, based on what the scope of work might be, but actual scopes of work are likely to vary from that assumed.** Therefore, the Board should not expect quotations for services to match the estimates provided, even for work due within the next few years. The intent of including engineering fees is only to ensure that there is some allowance for such fees, because ignoring engineering fees in budgeting could cause the corporation to be underfunded over the long term.

Budgeted amounts for engineering fees are as follows:

- 2020: $20,000 for specifications, tendering and site review of the roadway and driveway pavement reconstruction, and concrete curb repair.
- 2029: $15,000 for architectural design, specifications and drawings for siding replacement.
- 2029-30: $10,000 per year for site review of the siding replacement program.
- 2033: $5,000 for specifications, details and tendering of the window replacement program.
- 2033-34: $10,000 per year for site review of the window replacement program.
- 2035: $7,000 for specifications, tendering and site review of the asphalt roadway overlay.
- 2036: $10,000 for specifications, tendering and site review of the sliding glass patio door replacement program.

4.13 Reserve Fund Study Updates

The Condominium Act requires full Reserve Fund Study Updates (updates based on inspection) be completed no later than every six years, with a Spreadsheet Update (update without inspection) within three years of completing the Full Study Update. In essence, two types of Reserve Fund Study Updates will be required at maximum six-year intervals, with types of the study required alternating. The estimated $5,400 costs for a full Study Update are budgeted in the spreadsheet at six-year intervals in 2017, 2023, 2029, 2035, 2041 and 2047. To reflect the need for a Spreadsheet Update within three years of completing a full Study Update, we have budgeted an estimated $3,200 for a Spreadsheet Update every three years after each full Study Update, in 2020, 2026, 2032, 2038 and 2044.

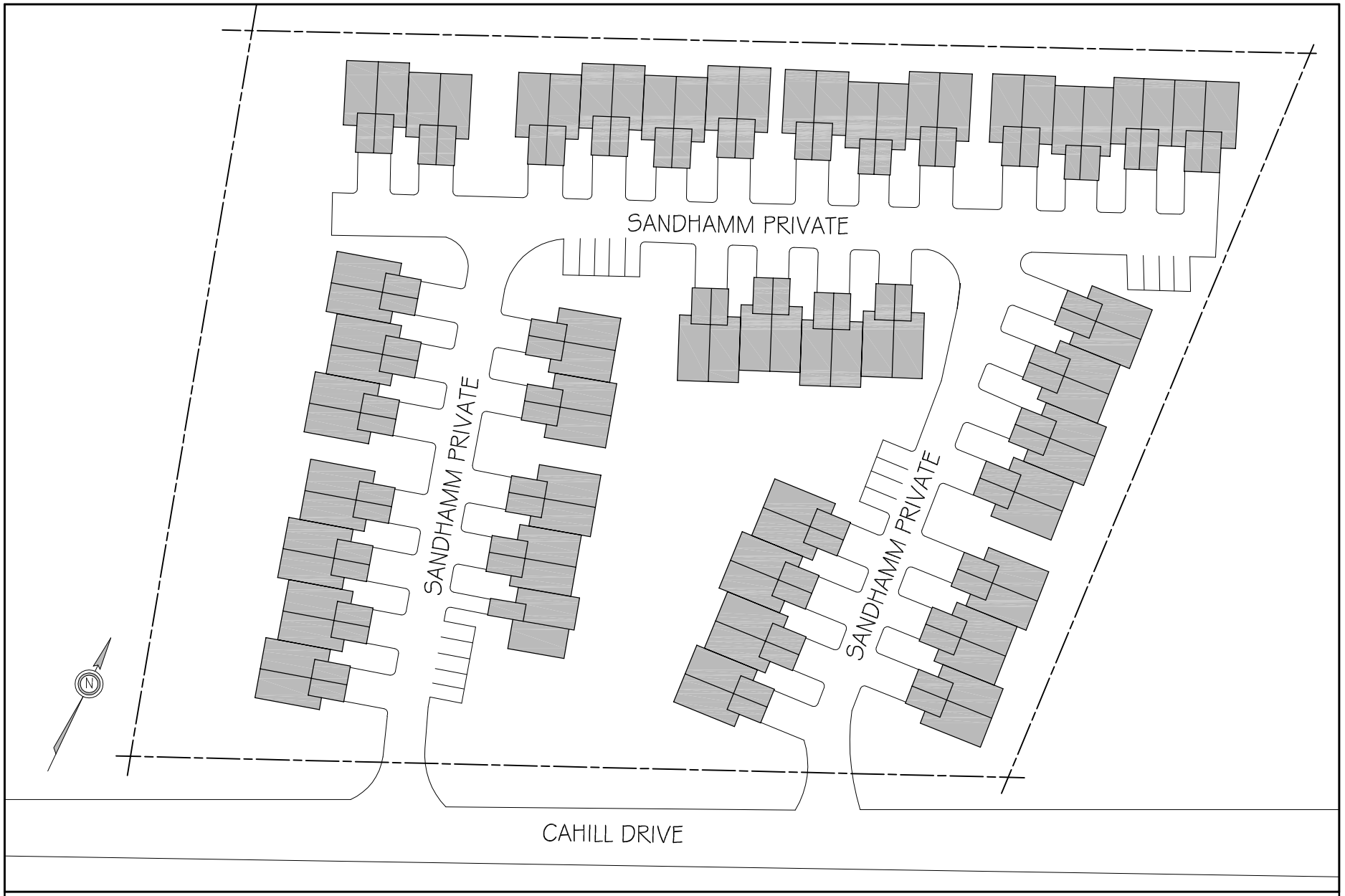
5. CONCLUSIONS & SUMMARY COMMENTS

Overall, the common elements of CCC 276 are in satisfactory condition. However, several elements will require major repair or complete replacement within the next several years, due to normal life cycle renewal of aging common elements.

Based on the predicted expenditures listed in the spreadsheet and the current reserve fund finances, the corporation is adequately funded such that only inflationary increases in annual contributions should be required to pay for all foreseeable major expenditures, as they occur over the next 30 years.

Denise Proulx, C.E.T.	Christopher Lyons, A.Sc.T	Steven Laviolette, P.Eng.

APPENDIX A: SITE PLAN FOR CCC 276



CCC 276 - SITE PLAN

APPENDIX B: PHOTOGRAPHIC CATALOGUE

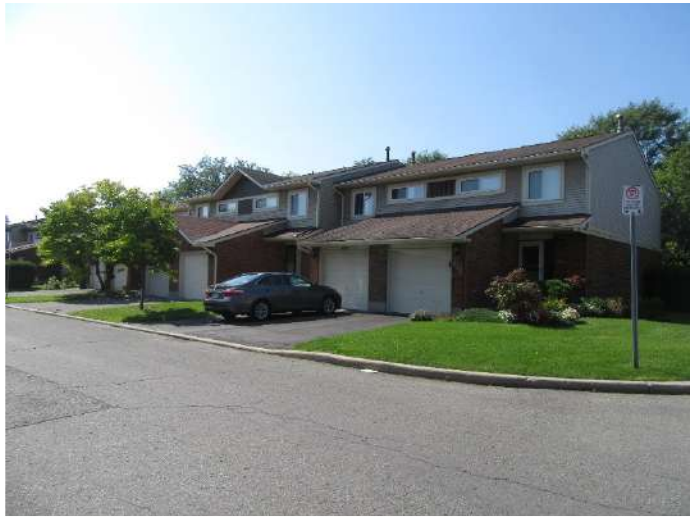


Photo B.1 – Typical front elevation.

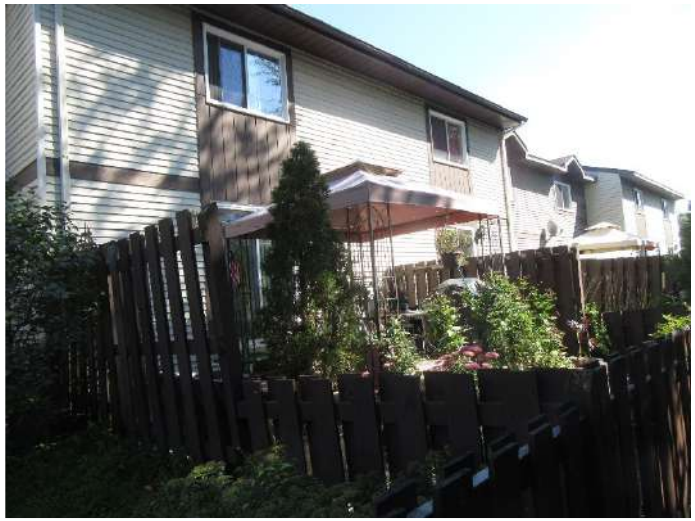


Photo B.2 – Typical rear elevation.

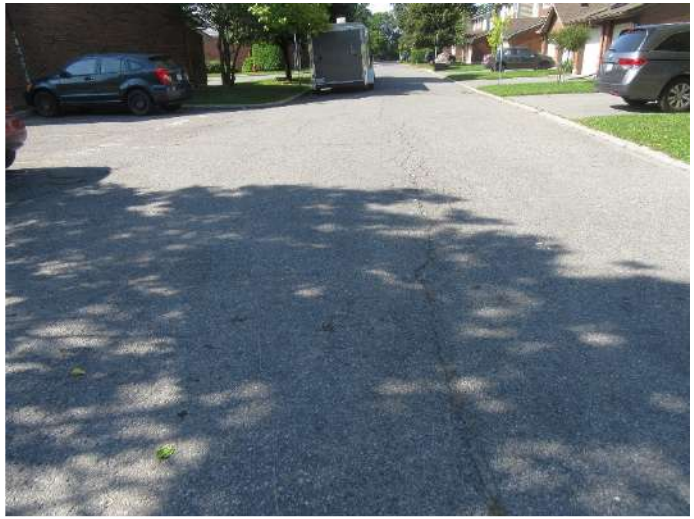


Photo B.3 – Showing longitudinal cracking through roadway asphalt pavement.

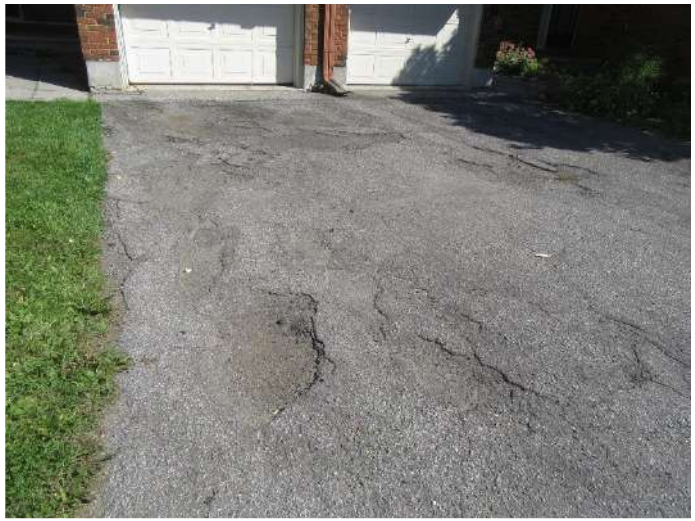


Photo B.4 – Showing depressions and deterioration of the asphalt pavement at a driveway.

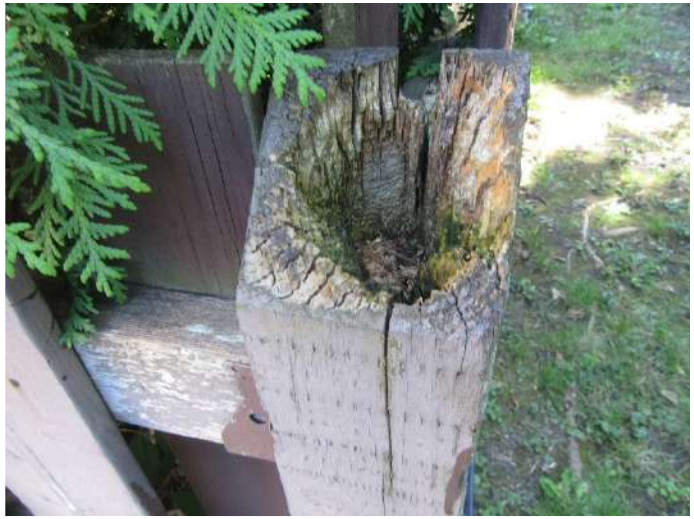


Photo B.5 – Deteriorated post at a privacy fence.

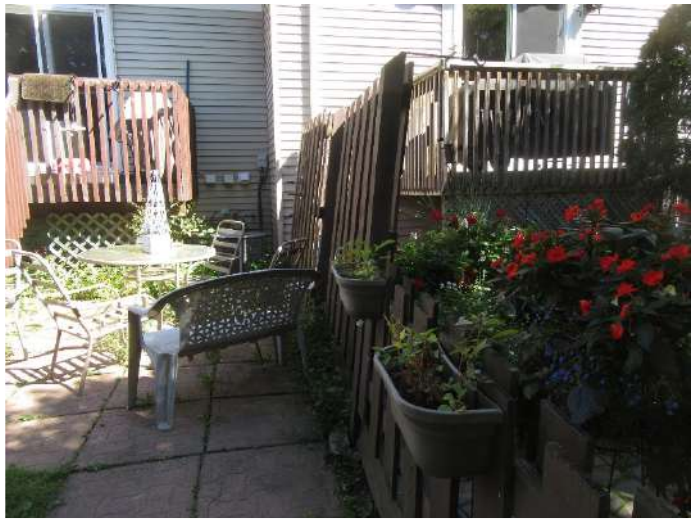


Photo B.6 – Showing fence posts that are leaning.

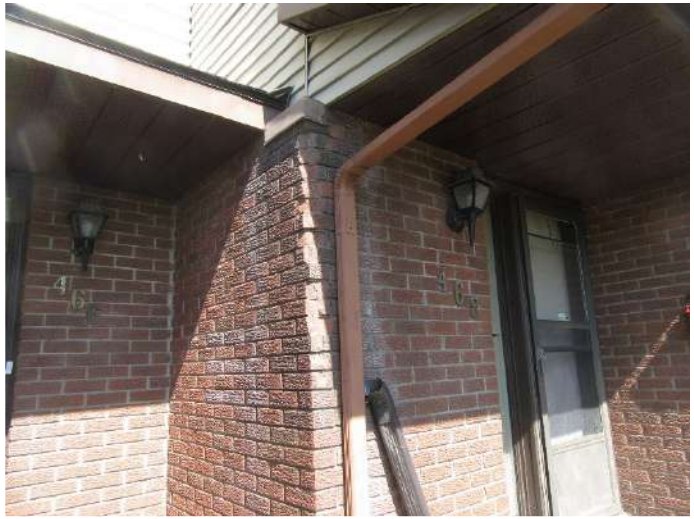


Photo B.7 – Showing spalled bricks.

Photo B.8 – Showing deteriorated caulking at cladding junction.

APPENDIX C: RESERVE FUND STUDY SPREADSHEET

CCC 276: RESERVE FUND SPREADSHEET (Draft No. 1)

SPREADSHEET ESSENTIALS:

- THE END OF THE FISCAL YEAR IS DECEMBER 31 OF EACH YEAR
- THE RESERVE FUND BALANCE AS AT DECEMBER 31, 2016 WAS: $188,554
- FOR THIS YEAR (2017), RESERVE FUND CONTRIBUTIONS ARE: $109,251
- FOR NEXT YEAR (2018), WE RECOMMEND CONTRIBUTIONS OF: $111,436 (2% increase)
- AFTER 2018, ONLY REGULAR INFLATIONARY INCREASES SHOULD BE REQUIRED

SPREADSHEET ASSUMPTIONS:

2.0% IS THE ASSUMED INFLATION RATE FOR EXPENDITURES & CONTRIBUTIONS

2.0% IS THE ASSUMED RATE OF INTEREST EARNINGS FOR RESERVE FUND INVESTMENTS, BASED ON THE AVERAGE BALANCE FOR EACH YEAR

- INFLATION AND INTEREST RATES ARE ASSUMED TO BE CONSTANT OVER THE 30-YEAR PERIOD EXAMINED IN THIS SPREADSHEET

	AGE OF COMPLEX (start of fiscal year)	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
ITEM	WORK DESCRIPTION / CALENDAR YEAR	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
4.1	Sewers		$6,000						$6,000						$6,000		
4.1	Grounds Lighting				$14,000												
4.1	Exterior Building Light Fixtures													$9,000	$9,000		
4.2	Asphalt Roadways & Visitor Parking				$145,000												
4.2	Asphalt Driveways	$6,500	$5,000	$5,000	$40,000												
4.2	Asphalt Walkways				$24,000												
4.2	Concrete Curbs				$20,000												
4.2	Paver Stone Walkways & Precast Steps				$15,000												
4.4	Wood Balcony Decks and Guardrails		$6,000			$6,000			$6,000			$6,000			$6,000		
4.4	Wood Privacy Fences					$45,000	$45,000										
4.6	Siding & Trim													$250,000	$250,000		
4.7	Painting					$30,000											
4.8	Windows																
4.8	Sliding Glass Patio Doors																
4.8	Entry Doors, incl. Sidelights	$10,765	$18,000	$18,000	$18,000	$18,000	$18,000	$135,000									
4.8	Garage Doors																
4.9	Asphalt Shingle Roofs	$80,075	$70,000														
4.10	Soffits													$27,000	$27,000		
4.10	Fascia													$35,000	$35,000		
4.11	General Contingencies Allowance	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000
4.12	Engineering Fees				$20,000									$25,000	$10,000		
4.13	Reserve Fund Study Updates	$5,370			$3,200			$5,400			$3,200			$5,400			$3,200
N/A	EXPENDITURES, BEFORE INFLATION	$105,710	$108,000	$26,000	$302,200	$102,000	$66,000	$143,400	$15,000	$3,000	$6,200	$9,000	$3,000	$354,400	$346,000	$3,000	$6,200
N/A	EXPENDITURES, AFTER INFLATION	$105,710	$110,160	$27,050	$320,697	$110,408	$72,869	$161,492	$17,230	$3,515	$7,410	$10,971	$3,730	$449,465	$447,588	$3,958	$8,344
N/A	ANNUAL CONTRIBUTIONS	$109,251	$111,436	$113,665	$115,938	$118,257	$120,622	$123,034	$125,495	$128,005	$130,565	$133,176	$135,840	$138,557	$141,328	$144,154	$147,037
N/A	EARNED INTEREST	$3,845	$3,971	$4,939	$3,846	$1,934	$2,535	$2,680	$3,439	$5,860	$8,480	$11,130	$13,923	$12,398	$6,415	$4,867	$7,782
N/A	REMAINING FUND: FUTURE DOLLARS	$195,940	$201,187	$292,741	$91,827	$101,611	$151,898	$116,121	$227,825	$358,175	$489,811	$623,145	$769,178	$470,669	$170,824	$315,887	$462,362
N/A	REMAINING FUND: 2017 DOLLARS	$195,940	$197,242	$281,373	$86,531	$93,872	$137,579	$103,112	$198,336	$305,699	$409,852	$511,196	$618,622	$371,119	$132,052	$239,403	$343,542

OTHER SPREADSHEET INFORMATION:
- ALL COSTS LISTED IN THE ROWS BESIDE WORK DESCRIPTIONS (I.E. ABOVE THE FIRST DOUBLE-LINE) ARE THE ACTUAL COST ESTIMATES OUTLINED IN THE MAIN BODY OF THE REPORT
- INFLATION IS ACCOUNTED FOR ONLY AFTER YEARLY EXPENDITURES ARE TOTALLED
- ALL COSTS LISTED IN THE SPREADSHEET ARE IN 2017 DOLLARS AND INCLUDE HST

49	50	51	52	53	54	55	56	57	58	59	60	61	62	63			
2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	TOTALS	ITEM	WORK DESCRIPTION
			$6,000						$6,000						$30,000	4.1	Sewers
															$14,000	4.1	Grounds Lighting
															$18,000	4.1	Exterior Building Light Fixtures
		$70,000													$215,000	4.2	Asphalt Roadways & Visitor Parking
							$70,000								$126,500	4.2	Asphalt Driveways
							$24,000								$48,000	4.2	Asphalt Walkways
		$20,000													$40,000	4.2	Concrete Curbs
							$15,000								$30,000	4.2	Paver Stone Walkways & Precast Steps
$6,000			$6,000			$6,000			$6,000			$6,000			$60,000	4.4	Wood Balcony Decks and Guardrails
								$45,000	$45,000						$180,000	4.4	Wood Privacy Fences
															$500,000	4.6	Siding & Trim
															$30,000	4.7	Painting
$138,000	$138,000														$276,000	4.8	Windows
			$145,000												$145,000	4.8	Sliding Glass Patio Doors
															$235,765	4.8	Entry Doors, incl. Sidelights
$80,000															$80,000	4.8	Garage Doors
															$150,075	4.9	Asphalt Shingle Roofs
															$54,000	4.10	Soffits
															$70,000	4.10	Fascia
$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$93,000	4.11	General Contingencies Allowance
$15,000	$10,000	$7,000	$10,000												$97,000	4.12	Engineering Fees
		$5,400			$3,200			$5,400			$3,200			$5,400	$48,370	4.13	Reserve Fund Study Updates
$242,000	$151,000	$105,400	$170,000	$3,000	$6,200	$9,000	$112,000	$53,400	$60,000	$3,000	$6,200	$9,000	$3,000	$8,400	$2,540,710	N/A	EXPENDITURES, BEFORE INFLATION
$332,214	$211,436	$150,537	$247,658	$4,458	$9,397	$13,914	$176,613	$85,891	$98,436	$5,020	$10,583	$15,669	$5,328	$15,215	N/A	N/A	EXPENDITURES, AFTER INFLATION
$149,978	$152,978	$156,037	$159,158	$162,341	$165,588	$168,900	$172,278	$175,723	$179,238	$182,823	$186,479	$190,209	$194,013	$197,893	N/A	N/A	ANNUAL CONTRIBUTIONS
$7,500	$5,220	$4,791	$4,049	$4,832	$8,102	$11,409	$13,161	$14,290	$16,303	$19,244	$23,206	$27,214	$31,433	$35,819	N/A	N/A	EARNED INTEREST
$287,626	$234,387	$244,678	$160,227	$322,942	$487,235	$653,630	$662,456	$766,579	$863,683	$1,060,729	$1,259,831	$1,461,585	$1,681,703	$1,900,200	$1,900,200	N/A	REMAINING FUND: FUTURE DOLLARS
$209,520	$167,391	$171,314	$109,985	$217,331	$321,466	$422,793	$420,100	$476,599	$526,441	$633,870	$738,087	$839,497	$946,988	$1,049,045	**$1,049,045**	N/A	REMAINING FUND: 2017 DOLLARS