MORRISON HERSHFIELD

Lifecycle Assessment Report

The Lake at Heritage Pointe Owners Association

Heritage Pointe, Alberta

Presented to:

The Lake at Heritage Pointe Owners Association
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1. INTRODUCTION

Morrison Hershfield is pleased to present you with your Lifecycle Assessment report and to assist you in your task of maintaining the fiscal and physical health of your Association. This assessment has been prepared in accordance with our proposal dated December 15, 2022, and your authorization form dated January 15, 2023.

1.1 Objectives

The purpose of this lifecycle assessment (LCA) report is to establish an opinion of condition and probable cost and timing of the renewal requirements for the building and/or site amenities above a capital threshold cost of **$3,000** over a **25-year** term. This report also includes a cash flow scenario that establish the required annual contributions to the reserve fund so that the balance remains positive, and so that there are sufficient funds for the identified expenditures.

1.2 Property Description

The Lake at Heritage Pointe is a community of 490 single family homes in a hamlet just south of the Calgary city limits. The property is largely comprised of resident-owned lots with some of the property and components shared by all community members.

The Lake at Heritage Pointe Owners Association (LAHPOA) is responsible for maintenance and replacement of some of the shared community assets. These assets are generally as follows:

- Lakehouse with two levels of facility space
- Detached garage building
- Upper and lower lake complete with a circulation system, aeration system, creek, fountain and three common docks
- Landscaping and pedestrian walkways in and around the lake house and throughout the community
- Sand-filled beach area
- Children’s playgrounds (3)
- Sports court
- Parking lot
- Exterior lighting in and around the lake house
- Fencing and gates around the Lake House and the lakes
- Various sport and facility maintenance equipment
- Mechanical and electrical equipment serving the Lake House, garage, lake equipment, and other site components that are the responsibility of the LAHPOA

These assets were originally constructed in 2001.

1.3 Terms of Reference

The LCA is subject to the Exclusions, Limitations and Assumptions included in Appendix C and addressed the following scope of service:

- Reviewed documentation (e.g. drawings or plans of the site, recent condition assessments or lifecycle plans, investigation reports etc.) provided to MH, where available, that would be related to budgeting for the replacement of major items.
- Interviewed the site personnel regarding maintenance history and concerns.
- Performed a non-intrusive visual sampling review of the following building systems / components:
    - Exterior site features (vehicular and pedestrian paving, soft landscaping, and other site features listed in the description)
    - Man-made lake and lake improvements
    - Lakehouse and Garage:
        - building structural systems, where visible
        - building envelope (roofing, wall cladding, exterior windows, doors and sealants)
        - mechanical systems (heating, ventilating and air conditioning (HVAC) systems, utilities, plumbing, drainage)
        - electrical systems (normal and emergency power and interior and exterior lighting)
        - security systems
        - active fire safety systems (suppression systems, fire alarm systems, exit signage)
        - emergency lighting
        - interior common area finishes and built-in furnishings (for operational performance, not aesthetic issues)
    - Equipment over a capital threshold cost of $3,000
- Accessed representative common and service areas to extent required to collect the information needed for the assessment. We only accessed areas where access was provided by the owners representative.
- Took photographs of representative facility systems and components, and of noted deficiencies (may exclude minor deficiencies).
- Provided a report with component descriptions, observations and recommended actions within a report term of 25 years, opinions of probable cost for the recommendations (i.e. preliminary, “order of magnitude” costs), and priority rankings for the recommendations (mandatory, recommended action/repair and discretionary upgrade; further outlined below). Where further evaluation is required to determine the extent of problems found and the scope and estimated cost of remedial action required, a cost has been included for the further evaluation only.

- Included “high-level” discussion of good maintenance practices for the major assets only. Discussion of maintenance practices for equipment has been excluded as this should be completed per manufacturer recommendations.

1.4 Project Team

This Report has been prepared and reviewed by various personnel within Morrison Hershfield.

The visual review and interviews were completed on February 2, 2023, and May 11, 2023, by Julie Malmberg, Dipl. Arch. Tech., Dipl. Civil Tech., of Morrison Hershfield. During our review of the complex, we were accompanied by Les Turner, Community Manager. We reviewed representative areas of the complex, as requested, including the Lake House and detached garage and the “common” (LAHPOA) areas of the site (representative areas).

Senior report staff and senior reviewers were as follows, all of Morrison Hershfield:

- Tara Ersser, B.Arch.Sc. (structure, building envelope and miscellaneous systems).
- Brian Fanson, P.Eng. (lake and lake equipment).

1.5 Reference Documents/Information

We reviewed the following documents provided by the Client for general background and to inform ourselves about the layout and intended construction:

Documents

- LAHPOA Audited Financial Statements for 2018 to 2021.
- December 2022 financial information, provided by LAHPOA.
- LAHP and County of Foothills land use areas map, provided by LAHPOA.
- 2018 to 2022 reserve fund expenditures list, provided by LAHPOA.
- 2023 reserve fund budget, provided by LAHPOA.
- 2021 inventory list, provided by LAHPOA.

Drawings

- N/A

1.6 Report Terms and Definitions

Terms used within our report are defined below.

TERM	DESCRIPTION
Description/History/Condition	A brief description of the component, deficiencies observed by Morrison Hershfield (if any), and problems or previous repairs reported by site staff.

TERM	DESCRIPTION
Year of Installation	This is assigned based on available data from drawings or reports, readily accessible nameplate information on equipment, or interviews with site staff. Where the year is not known, Morrison Hershfield provides an estimate based on observed condition.
Typical Life Cycle	Standard lifespan, assuming normal maintenance, based on our experience and manufacturer's recommendations. A component / piece of equipment may have a typical lifespan for complete replacement, as well as a typical lifespan for a recommended repair with a much shorter frequency. A lifecycle of 99 indicates a one-time project. A life cycle of 100 is used where the component is expected to last the life of the building.
Component Condition	Excellent – Functioning as intended; as new condition. Good – Functioning as intended; limited (if any) deterioration observed. Fair – Function and operation exhibiting wear or minor deterioration, normal maintenance frequency. Poor – Function and operation failing; significant deterioration and distress observed; increased maintenance attention has been required. Not Visible –applicable to concealed systems, such as buried services, or where access was not provided to MH to review a component Not Applicable – used for Evaluations/Studies/Reports/Surveys

TERM	DESCRIPTION
Priority (Table 1)	A Priority Rating is provided to each recommendation to assist you with budgeting of expenses, and to assess where deferral of an expense may be appropriate. 1. Immediate: items that require immediate repair or replacement because of either a code deficiency, legislative requirement or a safety concern 2. Restore Functionality: items that currently show signs of failure, requiring repair or replacement to restore functionality in the near future. 3. Future Renewal: items that will require future repair or replacement to maintain functionality (i.e. “life cycle replacement”). Most expenditures will fall under this category. 4. Discretionary Renewal: items where the timing, scope of work and phasing is at the owner’s discretion. This is typically limited to cosmetic issues.
Recommendations	Based on Morrison Hershfield’s assessment. A single component can have multiple recommendations.
Item No.	In the expenditures table, this is the item number that corresponds to the main body of the report (#.#.#.#).
System	High-level system to which the component belongs.
Present Age	Based on current year and the known or estimated year of installation. Provided in years.
Adjustment to Life Expectancy	An adjustment (in the number of years) to the “typical service life” based on actual current condition of the component.
Years over which Expenditure is phased	Normally projects are completed in one year. However, larger projects may be phased over several consecutive years.

TERM	DESCRIPTION
Expenditure Budget	This represents our opinion of probable cost, in current fiscal year dollars, including consulting services (design, tendering and construction review) and contingencies where we believe it is appropriate. The cost for these services can vary significantly depending on the size, scope and degree of complexity of the project. Applicable taxes are also included. 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, information provided by the owner, and our professional judgment. More precise opinions of probable cost would require more detailed investigation to define the scope of work. The costs in this report are typically referred to as Class D estimates (±50%), defined by the Budget Guidelines for Consulting Engineering Services as: “A preliminary estimate which, due to little or no site information, indicates the approximate magnitude of cost of the proposed project, based on the client's broad requirements. This overall cost estimate may be derived from lump sum or unit costs for a similar project. It may be used in developing long term capital plans and for preliminary discussion of proposed capital projects.” 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. All costs in the Condition Assessment and Capital Plan tables are identified in 2023 Canadian dollars.

1.7 Summary of Findings

Based on our visual review and as-constructed conditions, the property is of acceptable condition.

We recommend budgeting approximately $715,337 for the following renewal projects and/or studies over the next five years (2023 to 2028). Recommend studies / evaluations are highlighted.

Item No.	Recommendations	Fiscal Year of Expenditure	Expenditure Budget (in current fiscal year dollars)
2.7.8.2a	Replace the playground equipment and surfacing at Heritage Isle (1 playground)	2023	$315,000
2.7.8.2b	Relocated playground equipment	2023	$29,000
2.7.1.1	Asphalt paving repair allowance (Parking Lot)	2024	$3,000
2.7.7.1	Repair/replacement allowance for irrigation system	2024	$3,000
2.7.9.3b	Rebuild air compressors serving aeration diffusers (9 compressors)	2024	$4,000
2.7.9.6c	Resurface the docks, including allowance for local repairs	2024	$4,000
2.8.2.1a	Replace (11) inflatable stand-up paddleboards	2024	$9,000
2.8.2.1h	Replace 10' row boats (2)	2024	$7,000
2.2.1.1.b	Wall cladding repair allowance at Lake House and garage	2025	$2,000
2.7.1.2c	Asphalt paving repair allowance (community walkways)	2025	$5,000
2.7.1.4	Repair allowance for concrete paving (at driveway and north and south sides of Lake House)	2025	$4,000
2.7.5.1	Repair the retaining walls	2025	$5,000
2.7.8.4a	Replace the gas fire pit burner	2025	$3,000
2.7.9.3a	Replace some aeration diffusers (20) for lake	2025	$5,000
2.3.1.1	Replace rubber tiles at the Lake House	2026	$13,000
2.3.1.3	Replace resilient floor on main floor in the Lake House	2026	$13,000
2.4.2.1	Replace furnace serving the Lake House	2026	$12,000
2.4.5.2	Replace natural gas fireplace at Lake House	2026	$10,000
2.5.2.2b	Replace transformer at end of service life	2026	$6,000
2.7.1.5	Reset concrete unit pavers	2026	$15,000
2.8.2.1d	Replace aluminum boat motor	2026	$5,000
2.8.2.1f	Replace stand-up paddle boards (4 boards currently in use)	2026	$3,000

Item No.	Recommendations	Fiscal Year of Expenditure	Expenditure Budget (in current fiscal year dollars)
2.9.1.2	Allowance for consultant evaluations	2026	$5,000
2.7.8.3c	Replace plastic waste, recycling, and compost bins (for homes throughout the site)	2027	$8,000
2.3.2.1c	Replace casework and counters in washrooms at Lake House	2028	$10,000
2.3.2.1d	Replace wood millwork and shelving in main downstairs room, Lake House	2028	$23,000
2.3.2.1e	Replace metal washroom partitions in Lake House	2028	$7,000
2.4.6.4	Replace washroom plumbing fixtures	2028	$33,000
2.5.3.1a	Replace interior light fixtures at Lake House	2028	$11,000
2.5.3.3	Replace exterior soffit and wall-mounted light fixtures at Lake House	2028	$13,000
2.5.3.5	Replace exterior pole-mounted light fixtures	2028	$9,000
2.7.6.1	Allowance for replacement of mature trees	2028	$3,000
2.7.8.1	Allowance to replace site furniture	2028	$5,000
2.7.9.6a	Replace the floating and stationary dock at the Lake House	2028	$39,000
2.9.1.1	Update lifecycle assessment	2028	$14,000

1.8 Expenditures Table

Table 1 – Expenditures Table, in Appendix A shows Morrison Hershfield's opinion of the probable costs to carry out the recommendations during the planning horizon in 2023 dollars.

A Lifecycle Plan "typical life cycle", and therefore life expiry date, is a theoretical number arrived at with much estimation and an assumption of level of use, exposure and maintenance; approach of the theoretical life expiry date should trigger a detailed condition inspection only and not automatic replacement. The detailed inspection may indicate need for maintenance or refurbishment only, or may indicate adequate condition for an extended period, instead of replacement.

1.9 Funding Plan

Our findings indicate that your current level of annual reserve fund contributions ($135,803), increased yearly by inflation, will result in a positive balance throughout the next 25 years.

One cash flow scenario is presented in Appendix B.

We recommend that you review this funding plan and create a funding plan that is best suited to the Association.

TABLE 2 FUNDING PLAN SUMMARY

This funding plan maintains the current contribution increased annually by inflation (2%). It appears this contribution level will provide adequate funding for the anticipated capital expenditure through the 25-year report term. In this plan, a recommended minimum reserve fund balance is maintained over the report term (see Appendix D for discussion about minimum balance). The lowest balance in the plan is anticipated in year 24 (2046), which is approximately 70% of the anticipated capital expenditures for this year.

This plan was limited to a 25-year report term and does not account for capital expenditures beyond this time. We recommend periodic updates to this plan to account for future expenditures. A full life plan could be considered in the future if you would like a longer term cashflow projection.

2. CONDITION ASSESSMENT

2.1 Structure

2.1.1 Substructure

2.1.1.1 Foundations (Lake House and Garage)

Description/History/Condition

Structural drawings were not available for review and the foundation type(s) were not confirmed. The foundation walls are cast-in-place concrete at the Lake House and garage, with parging at the exterior surface above grade (per sample areas seen during our visual review). The Lake House foundation walls are concealed by interior finishes at the interior of the building. Based on exposed foundation walls below the exterior deck, we believe the foundation walls of the Lake House are waterproofed with a spray-applied protective foundation coating.

We noted normal, isolated, fine cracking. Evidence of major settlement or heaving of the foundations was not reported or observed.

Year of Installation	Lake House - 2001 Garage - 2017
Typical Life Cycle of Component	100
Component Condition	Good

Photo 2.1.1.1-1 Concrete foundation wall at Lake House

Recommendations

The foundations and foundation walls are expected to last the life of the building with isolated repairs only. Major capital expenditures are not anticipated to be required.

2.1.1.2 Slab on Grade (Lake House and Garage)

Description/History/Condition

The lower floor at the Lake House and the garage floor are concrete slabs-on-grade. At the Lake House, most of the slabs were covered with floor finishes.

Where the slabs were exposed, we noted normal, isolated, fine cracking. At the garage, ponding water was noted at the area between the overhead doors. It was reported that this is due to snow melting off of the snow removal equipment that is stored in the garage. No evidence of major settlement or heaving of the concrete was reported or observed.

Year of Installation	Lake House – 2001 Garage – 2017
Typical Life Cycle of Component	100
Component Condition	Good

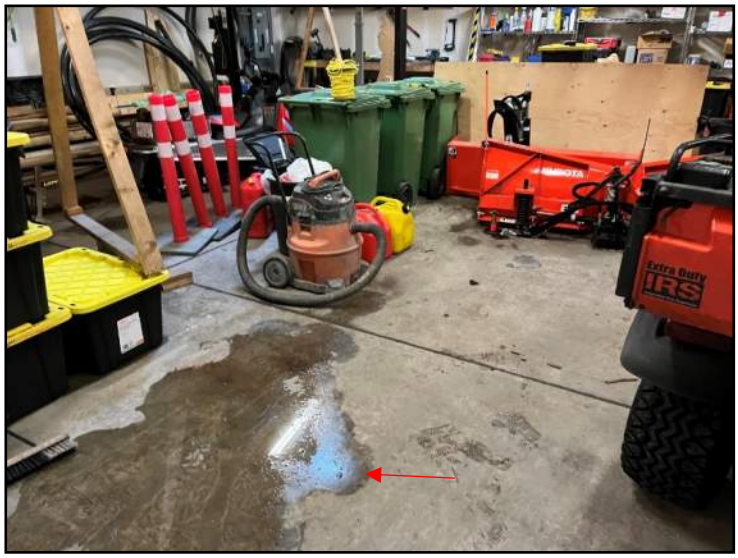


Photo 2.1.1.2-1 Ponding water at garage slab on grade

Recommendations

The slabs-on-grade are expected to last the life of the complex with regular maintenance. Major capital expenditures are not anticipated to be required.

2.1.2 Superstructure

2.1.2.1 General (Lake House and Garage)

Description/History/Condition

The Lake House and garage are of light wood-frame construction, per site observations. Most of the superstructure was concealed by cladding or interior finishes. There are engineered roof trusses in the garage and at the Lake House.

Excessive deflection, cracking or other evidence of structural distress was not observed or reported. There was no evidence or reports of long-term leakage that would lead us to expect concealed structural damage.

Year of Installation	Lake House - 2001 Garage - 2017
Typical Life Cycle of Component	100
Component Condition	Good

Photo 2.1.2.1-1 Attic at Lake House

Recommendations

Interior protected structural components are expected to last the life of the buildings. Major capital expenditures are not anticipated to be required.

2.1.2.2 Exposed Structure – Wood Structure (Lake House)

Description/History/Condition

There are exposed wood corbels supporting the roof at the Lake House. There is also exposed wood shelving that holds recreation equipment under the soffit of the lower level of the Lake House.

Local damage was noted at one corbel (see photo below).

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Good

Photo 2.1.2.2-1 Damage at wood corbel

Photo 2.1.2.2-2 Wood shelving

Recommendations

The corbels and shelving are located such that they are protected by large roof overhangs, and we expect these elements will have a long service life. We recommend you budget to repair and repaint the corbels as needed. A budget for painting has been included with the exterior cladding in Section 2.2.1.1. Local repairs are expected to be completed as part of regular maintenance.

We also recommend you budget to replace the corbels and shelving at the end of the component's useful life. As this is expected to be beyond the study term, a budget has not been included in Table 1.

2.1.2.3 Raised Deck and Stair Construction – Wood Structure (Lake House)

Description/History/Condition

There is a raised wrap-around deck at the Lake House. The raised deck topsides are protected with a rubberized traffic coating and the undersides are protected with metal soffit cladding. The traffic coating was replaced in 2019 for a cost around $27,000, as reported by site staff.

The structure of the raised deck is dimensional lumber framing. The structure includes wood posts supported on poured concrete footings, which extend below grade. The wood posts are finished with painted engineered wood cladding. The structural elements of the raised deck are concealed from view by finishes. We assume the condition of the deck structure to be good given that we did not note signs of settlement or movement.

There are prefinished aluminum picket-style guards at the deck perimeter (see section 2.7.2.1 for further discussion).

There are two sets of wood-framed stairs and a wood-framed ramp that provide access to and from the raised deck. One set of stairs are at the front of the building, replaced in 2017, and the other is at the east side of the building, original to building construction. The ramp is located at the southwest side of the deck, original to building construction.

At the base of the ramp, we noted a damaged flashing with surface corrosion that has caused the wood ramp structure to become exposed to the elements (see photo below).

Previous issues with movement and ponding at the east stairs was reported at the time of the previous report. It was reported during our site visit that repairs have been completed and there are no current issues with these stairs.

Deck, Stair and Ramp Structure

Year of Installation	2001
Typical Life Cycle of Component	75
Component Condition	Good

Deck Traffic Coating (Waterproofing)

Year of Installation	2019
Typical Life Cycle of Component	20 (replacement)
Component Condition	Good

Photo 2.1.2.3-1 Raised deck

Photo 2.1.2.3-2 Damaged flashing with surface corrosion, exposing the wood structure at the base of the ramp

Recommendations

Deck/Stair/Ramp Structures:

We recommend that you replace the deck/stair/ramp structures at the end of components' service life. A long service life is assumed, given the structure is waterproofed and assuming the waterproofing will be maintained in good condition. Full replacement is not anticipated to be required during the study term. Allowances for isolated structural repairs are included in the waterproofing repair and replacement projects (as described below).

Waterproofing:

We recommend you plan for replacement of the traffic coating at the end of the component's service life. A replacement budget has been included in Table 1.

Minor deficiencies may require repairs in the interim; however, we assume such repairs will be completed as a maintenance activity.

2.2 Building Envelope

2.2.1 Above Grade Walls

2.2.1.1 Exterior Walls – EIFS (Lake House and Garage)

Description/History/Condition

The exterior walls of the Lake House and garage are generally clad with EIFS (exterior insulation finishing system). We believe the EIFS at the Lake House is a face-sealed system and the EIFS at the garage is a rain-screen system (based on site observations).

The EIFS at the Lake House was reported to have been painted in 2019. We are not aware of what paint product was applied. If the product was not selected in accordance with the original EIFS manufacturer's guidelines, the performance of the coating will be unknown.

Signs of previous local repairs were noted at the south wall of the garage. There is also local impact damage at the garage throughout the walls, some of which appears to be the result of bird-inflicted damage.

Year of Installation	Lake House - 2001 Garage - 2017
Typical Life Cycle of Component	60
Component Condition	Good

Photo 2.2.1.1-1 Painted EIFS at Lake House

Photo 2.2.1.1-2 Repairs at EIFS at south wall of garage

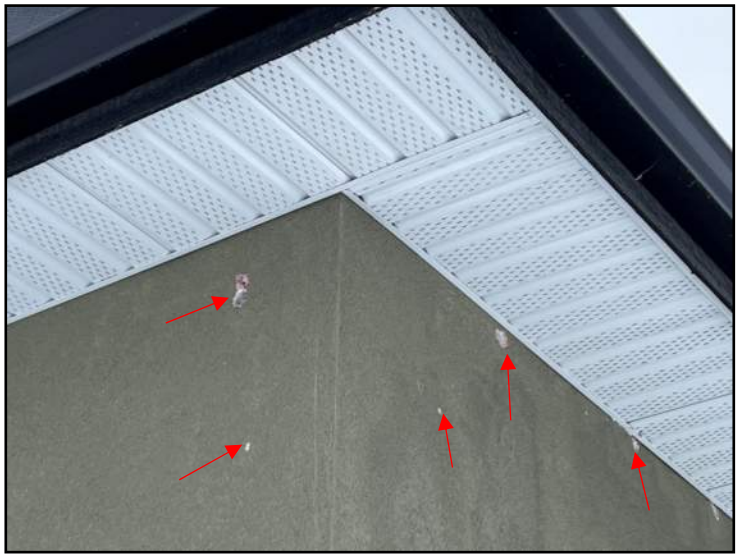


Photo 2.2.1.1-3 Impact damage at garage EIFS

Recommendations

We recommend you plan to replace the EIFS cladding at the end of the component's useful life. As replacement is anticipated to be beyond the report term, and budgets have not been included in Table 1.

As the EIFS at the Lake House has been re-painted since original construction, we recommend you budget for ongoing periodic re-painting of the EIFS cladding. A re-painting budget has been included in Table 1. The budget allows for re-painting the EIFS and the following components at the Lake House: engineered wood cladding and trim, exterior doors, and corbels. We also assume painting at the garage will be completed similar to the Lake House; therefore, we have included for painting of the garage EIFS, engineered wood

cladding and trim, and exterior doors as part of this project. The timing of the painting project has been extended to coincide with replacement of the wood cladding and trim at the Lake House.

We recommend monitoring the condition of the Lake House EIFS paint annually. If adhesion issues arise, the paint may need to be removed prior to the next coating. Future coating products should be selected in accordance with the original EIFS manufacturer's guidelines to help ensure performance.

In general, we recommend completion of periodic local repairs to the EIFS to help achieve a full service life. A general "cladding repair allowance" is included in Table 1 and intended to cover all wall cladding types. The timing of the first occurrence has been included in the near term to address current deficiencies noted.

Regarding the bird damage, you may want to consider installing bird deterrent devices or a specialty EIFS coating that discourages birds from causing further damage to the cladding. A budget has not been included as the course of action is unknown at this time. However, repairs can be completed as part of the general cladding repair project.

2.2.1.2 Exterior Walls – Wood Cladding (Lake House and Garage)

Description/History/Condition

There is painted shiplap wood siding and engineered wood decorative trim, including around columns and beams, featured at the Lake House and garage. The wood trim and shiplap were reported to have been repainted in 2019 at the Lake House. Paint at the garage is assumed to be original to the time of construction (2017).

Year of Installation	Lake House - 2001 Garage - 2017
Typical Life Cycle of Component	Cladding – 30 Paint - 10
Component Condition	Good

Photo 2.2.1.2-1 Wood cladding and trim at the Lake House

Recommendations

We recommend you plan to replace the wood siding and trim at the end of the component's service life. Replacement budgets have been included in Table 1. We have aligned the replacement at the Lake House with the window replacement project.

We also recommend periodically re-painting the wood cladding and trim to maintain protection of the wood. Repainting is budgeted in Section 2.2.1.1. We anticipate the service life of the paint at the garage can be slightly extended for painting at the garage and Lake House to be completed as one project.

2.2.1.3 Exterior Walls – Manufactured Stone (Lake House and Garage)

Description/History/Condition

There is adhered manufactured stone veneer featured at the Lake House and garage.

At the Lake House, we noted local damage, including cracked mortar and stones and locally missing stones with exposed wire mesh.

Year of Installation	Lake House - 2001 Garage - 2017
Typical Life Cycle of Component	60
Component Condition	Good

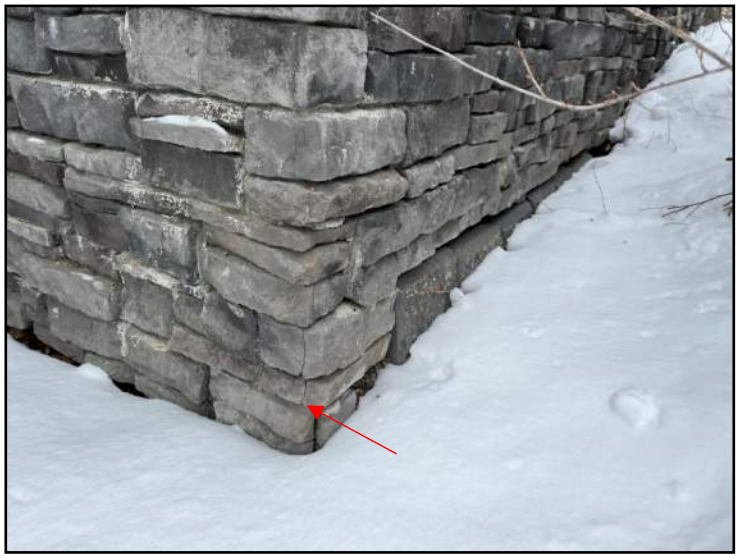


Photo 2.2.1.3-1 Cracked veneer at corner of ramp at Lake House

Photo 2.2.1.3-2 Missing veneer with exposed wire mesh at north wall of Lake House

Recommendations

We recommend you plan to replace the manufactured stone cladding at the end of the component's useful life. As replacement is anticipated to be beyond the report term, a budget has not been included in Table 1.

We also recommend that repairs to the damaged veneer be completed out of the wall cladding repair allowance included in Section 2.2.1.1, or as a regular maintenance activity.

2.2.1.4 Exterior Soffits – Prefinished Metal (Lake House and Garage)

Description/History/Condition

There are soffits at the Lake House at the underside of the roof eaves and the underside of the raised deck. There are also soffits at the underside of the roof eaves at the garage. The soffits are clad with perforated prefinished aluminum cladding.

We noted local areas with minor damage.

Year of Installation	Lake House: 2001 Garage: 2017
Typical Life Cycle of Component	60
Component Condition	Good

Recommendations

We recommend you plan to replace the soffit cladding at the end of the component's service life. As replacement is anticipated to be beyond the report term, a budget has not been included in Table 1.

We also recommend that repairs be completed as needed, out of the wall cladding repair allowance included in Section 2.2.1.1 or using operating funds.

2.2.1.5 Exterior Walls – Joint Sealants (Lake House and Garage)

Description/History/Condition

There are sealant joints at window and door frame perimeters and EIFS-to-trim interface joints.

Sealants were generally soft and well bonded where randomly reviewed. Local areas of split and crazed sealants were noted. No leaks through the exterior walls were reported by building staff.

Year of Installation	Lake House: 2001 Garage: 2017
Typical Life Cycle of Component	20
Component Condition	Fair/Good

Recommendations

Due to the limited number of sealants, we anticipate the sealants can be replaced as a regular maintenance activity, at a cost below the report capital threshold.

2.2.2 Windows and Doors

2.2.2.1 Exterior Windows – Vinyl – Punched (Lake House)

Description/History/Condition

There are punched windows throughout all elevations of the Lake House. The windows are vinyl-framed and include fixed glazing and casement operable windows. The glazing at windows is clear or frosted double-glazed sealed insulating glass units (IGUs) with desiccant-filled spacers.

Major issues, such as water leakage, were not noted nor reported.

Year of Installation	2001
Typical Life Cycle of Component	30
Component Condition	Fair

Recommendations

We recommend that you plan to replace the windows at the end of the component's useful life. A replacement budget has been included in Table 1. We have applied an extension until the time of window replacement, based on current condition and given that the windows are well-sheltered by overhangs.

We assume weather-stripping replacement and operable window hardware repairs and replacements will be completed on an as-needed basis as part of regular maintenance. Therefore, repair allowances have not been included in Table 1.

2.2.2.2 Exterior Doors – Main Entrances (Lake House)

Description/History/Condition

The main entrance includes one set of double-swing wood-framed glass doors. There are also two sets of double-swing wood-framed glass doors at the north elevation, one leading from the main level to the raised deck and one from the walkout level to the at grade patio. The glazing at windows is clear double-glazed sealed insulating glass units (IGUs) with desiccant-filled spacers. Aftermarket interior image film is used for privacy at the main entrance doors.

We noted local minor damage and peeling paint at the doors. No current leaks or issues with operations were reported nor observed.

The expected life of the IGUs at the main entrance doors may be shortened with the aftermarket film as the IGUs may experience overheating that they were not originally designed for. When replacing the main doors, we recommend the desired IGU finish be part of the door replacement package directly from the manufacturer.

Year of Installation	2001
Typical Life Cycle of Component	30
Component Condition	Fair

Photo 2.2.2.2-1 Lower main change room exterior doors

Recommendations

We recommend you plan to replace the entrance doors at the end of the component's useful life. A replacement budget has been included in Table 1.

We assume hardware adjustments will be completed as a regular maintenance activity. Re-painting has been allowed for as part of the exterior painting project in Section 2.2.1.1

2.2.2.3 Exterior Doors – Service Doors (Garage)

Description/History/Condition

There is a prefinished painted steel service door at the garage.

No current leaks nor issues with operations were reported nor observed.

Year of Installation	2017
Typical Life Cycle of Component	30
Component Condition	Fair

Recommendations

We anticipate the door can be replaced at a cost below the report capital threshold. Therefore, a replacement budget has not been included in Table 1.

2.2.2.4 Exterior Doors – Overhead Door (Garage)

Description/History/Condition

There are two, power-operated, painted and insulated metal overhead doors at the garage (one double-car width and one single-width, over height).

Issues with operations were not reported nor observed.

Year of Installation	2017
Typical Life Cycle of Component	30
Component Condition	Good

Photo 2.2.2.4-1 Insulated metal overhead doors at garage

Recommendations

We recommend you plan to replace the overhead doors at the end of the component's service life. A replacement budget has been included in Table 1.

Repairs to address local damage or weather-stripping are assumed to be considered a maintenance cost.

2.2.3 Roofs

2.2.3.1 Sloped Roofs with Asphalt Shingles (Lake House and Garage)

Description/History/Condition

The sloped roofs at the Lake House and garage are finished with asphalt shingles. Shingles at the garage are original to the building and shingles at the Lake House were replaced in 2020 for a cost of $19,769, as reported by site staff.

Lake House attic areas were noted to be insulated and vented to the exterior with a perforated aluminum soffit and button vents near the ridge (per our observations from the attic hatch accessed). We were unable to review the attic in the garage.

At sample attic areas accessed, we noted no apparent accumulation build-up of moisture, water ingress, or deterioration of the roof framing members.

Year of Installation	Lake House: 2020 Garage: 2017
Typical Life Cycle of Component	20
Component Condition	Good

Photo 2.2.3.1-1 Shingled roof at garage

Photo 2.2.3.1-2 Shingled roof at Lake House

Recommendations

We recommend you plan to replace the shingles at the end of the component's useful life, including all associated work such as local sheathing replacement, flashing replacement, and joint sealing. Replacement budgets have been included in Table 1.

2.2.3.2 Sloped Roofs – Eavestroughs and Downspouts (Lake House and Garage)

Description/History/Condition

Roof drainage at the Lake House and garage is managed via prefinished aluminum eavestroughs and downspouts discharging at grade level. It was reported the eavestroughs at the Lake House were replaced in 2020 with the shingles.

We noted downspouts at the garage are terminated along the foundation walls of the building.

Year of Installation	Lake House: 2020 Garage: 2017
Typical Life Cycle of Component	20
Component Condition	Good

Recommendations

We recommend you plan to replace the eavestroughs and downspouts at the end of the components' useful life. A budget has not been included as replacement of the eavestroughs and downspouts at the garage is expected to be at a cost below the capital expense threshold.

A replacement budget for the Lake House has been included in Table 1, timed to occur with the next shingle replacement.

We recommend extensions be added to the downspouts as needed to keep water away from the foundations. We expect repairs to the downspouts will be completed as a maintenance activity.

2.2.3.3 Sloped Roofs – Fascia (Lake House and Garage)

Description/History/Condition

The fascia cladding is a prefinished aluminum trim installed over wood framing at both the Lake House and garage.

Year of Installation	Lake House: 2001 Garage: 2017
Typical Life Cycle of Component	40
Component Condition	Good

Recommendations

We recommend you plan to replace the fascia cladding at the end of the component's useful life. A budget has not been included as replacement of the fascia cladding at the garage is expected to be at a cost below the capital expense threshold. A replacement budget for the Lake House has been included in Table 1, timed to occur with the next shingle replacement.

2.2.3.4 Roofs – Aluminum-Framed Skylights (Garage)

Description/History/Condition

There are two residential style skylights at the garage. The skylights are rectangular in shape and mounted on roof curbs. The skylight sizes are approximately 0.6m x 1.2m.

Issues with leakage were not observed nor reported.

Year of Installation	2017
Typical Life Cycle of Component	20
Component Condition	Good

Recommendations

We recommend you plan to replace the skylights at the time of the roof replacement project, including all associated work such as local sheathing replacement, flashing replacement, and joint sealing as required. A replacement budget has been included in Table 1 accordingly.

2.3 Interiors

2.3.1 Interior Finishes

2.3.1.1 Floor Finishes – Rubber Tile (Lake House)

Description/History/Condition

There is rubber tile as a floor finish at the stairs, downstairs main room and men's and women's washrooms at the Lake House.

Year of Installation	2001
Typical Life Cycle of Component	25
Component Condition	Fair

Recommendations

We recommend you plan to replace the rubber tile at the end of the component's useful life. A replacement budget has been included in Table 1.

2.3.1.2 Floor Finishes - Ceramic Tiles

Description/History/Condition

There is ceramic tile as a floor finish at the downstairs shower areas and main entrance at the Lake House. There is also ceramic tile as a wall finish at the shower areas.

We noted small, stepped areas in the downstairs men's shower area that poorly marks the change in elevation and could be a tripping hazard. There was also evidence of improperly sloped mortar bed tile installation in the men's shower area.

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Recommendations

We recommend you plan to replace the ceramic tiles at the end of the component's useful life. A replacement budget has been included in Table 1.

At the men's shower, we recommend marking the tripping hazard with a contrasting color to warn users of the hazard or repairing the area. A budget has not been included as we anticipate this can be completed at a cost below the capital expense threshold. At the time of tile replacement, we recommend reconfiguring the area as needed.

2.3.1.3 Floor Finishes – Resilient Flooring (Lake House)

Description/History/Condition

Floor finishes at the Lake House upstairs hall, kitchen, and washrooms are generally sheet resilient flooring. There is also resilient tile flooring located at the front desk area, which appears to have been replaced since the time of the previous report. We have assumed the replacement was completed during the kitchen renovations in 2019. It was reported by the LAHPOA that the floor was refinished in 2017.

Signs of wear were noted throughout the resilient flooring.

Year of Installation	2001 – general 2019 – front desk area
Typical Life Cycle of Component	25
Component Condition	Fair

Photo 2.3.1.3-1 Typical resilient flooring

Recommendations

We recommend you plan to replace the sheet resilient flooring at the end of the component's useful life. A replacement budget has been included in Table 1 for the general upstairs.

Replacement of the flooring at the front desk has not been included in Table 1 as we anticipate the flooring can be replaced as needed at a cost below the capital expense threshold.

2.3.1.4 Paint Finishes (Lake House)

Description/History/Condition

Most of the walls and the ceilings at the Lake House are finished with paint. The Lake House was last re-painted in 2019.

We noted stained ceilings at the mechanical room. Staff reported the staining is not from active water leakage and is likely the result of historic water damage from the plumbing located above the room.

Year of Installation	2019
Typical Life Cycle of Component	15
Component Condition	Good

Photo 2.3.1.4-1 Historic water damage at the ceiling of the mechanical room at the basement

Recommendations

We recommend you budget an allowance to repaint the walls and ceilings periodically to maintain aesthetics. A budget has been included in Table 1.

2.3.2 Built-In Furnishings

2.3.2.1 Built-In Furnishings (Lake House)

Description/History/Condition

There are built-in furnishings in the Lake House as follows:

- built-in cabinets with a laminated counter at the upstairs service desk
- built-in kitchen cabinets (lower and upper, with a laminated counter)
- built-in lower cabinets with a laminated counter in the upstairs washrooms and lower level women's washroom
- built-in laminated counters in downstairs men's washroom
- built-in wood millwork/ shelving in the downstairs main area
- built-in prefinished metal toilet partitions in washrooms

Most of the built-in furnishings are original to the building. The cabinets and countertop at the kitchen and the service desk were replaced in 2019.

Minor damage including scrapes and loose trim was noted at the washroom and changeroom cabinets and front desk.

Casework and Counters (Service Desk)

Year of Installation	2019
Typical Life Cycle of Component	15
Component Condition	Fair

Casework and Counters (Kitchen)

Year of Installation	2019
Typical Life Cycle of Component	20
Component Condition	Good

Casework and Counters (Upstairs Washrooms, Downstairs Women's Washroom)

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Counter (Downstairs Men's Washroom Counter)

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Wood Millwork and Shelving (Main Downstairs Room)

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Metal Washroom Partitions

Year of Installation	2001
Typical Life Cycle of Component	30
Component Condition	Fair

Photo 2.3.2.1-1 Built-in cabinets at kitchen

Photo 2.3.2.1-2 Local damage at service desk

Recommendations

We recommend you plan to replace the built-in furnishings at the end of the component's service life. Most of the casework and counters have exceeded a typical service life; however, we anticipate the service lives can be extended as the condition remains fair. Budgets have been included in Table 1 accordingly.

Replacement of the washroom casework and counters is timed with washroom plumbing fixture replacements.

2.3.3 Interior Doors and Glazing

2.3.3.1 Interior Doors (Lake House)

Description/History/Condition

Interior doors are generally wood veneer or painted wood slabs in wood frames.

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Good

Recommendations

The interior doors are expected to last beyond the study period. We anticipate repairs to interior doors will be completed as needed as a maintenance activity.

2.3.4 Interior Equipment

2.3.4.1 Moveable Partitions (Lake House)

Description/History/Condition

There is a manually operated moveable metal security partition at the base of the stairs in the Lake House.

The handrail had been cut back to install the partition. The date of installation is unknown.

Year of Installation	Unknown
Typical Life Cycle of Component	25
Component Condition	Good

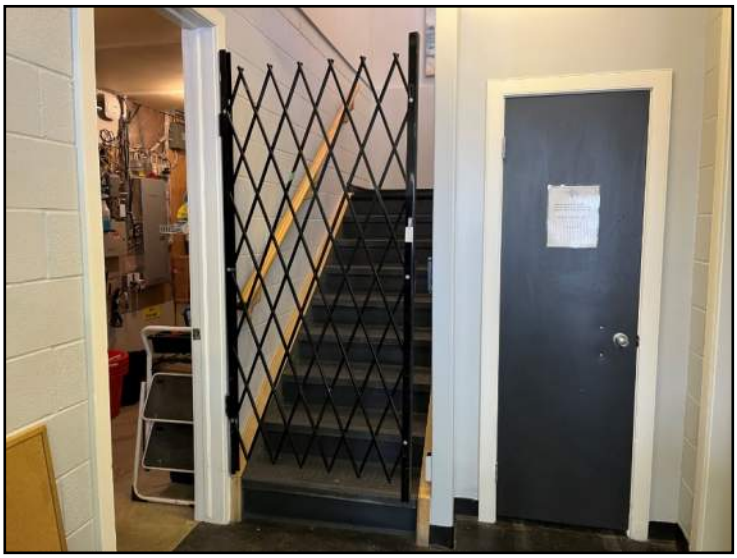


Photo 2.3.4.1-1 Metal security partition at base of stairs

Recommendations

We recommend you plan to replace the partition at the end of the component's service life. The estimated replacement cost is below the capital expense threshold; therefore, a replacement cost has not been included.

2.3.5 Interior Guards and Handrails

2.3.5.1 Interior Guards and Handrails (Lake House)

Description/History/Condition

There are stained wood guards and handrails with metal and wood spindles at the Lake House interior stairs.

We noted areas where the stain finish was worn down to bare wood. A portion of the handrail at the bottom of the stairs was noted to have been removed to facilitate the installation of the security partition.

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Recommendations

The handrails are expected to last the life of the building. Therefore, a replacement budget has not been included in Table 1.

We recommend regular refinishing to maintain aesthetics and protection of the wood. Refinishing is assumed to be a normal maintenance activity.

2.4 Mechanical Systems

2.4.1 Gas Supply System

2.4.1.1 Natural Gas Distribution System (Lake House)

Description/History/Condition

Natural gas is supplied to the Lake House by a buried line. There is a meter at the outside of the building, and the supply line enters the basement mechanical room.

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Recommendations

The buried natural gas distribution lines are expected to last the life of the building. No capital expenditures are included. Replacement of components such as the main gas regulator or meter would be the responsibility of the utility provider.

We recommend you repaint the exterior gas lines periodically. We assume this will be completed as part of regular maintenance activities.

2.4.2 Air System(s) – Main Equipment

2.4.2.1 Furnace (Lake House)

Description/History/Condition

Heating and ventilation is provided to the Lake House by one forced air furnace, located in the mechanical room, at the lower level. Details: "Lennox", model # G26Q3/4-100-6, serial # 5801J25656, with natural gas-fired heating (100,000 BTU/hr input heating capacity).

No issues were noted or reported.

Year of Installation	2001
Typical Life Cycle of Component	25
Component Condition	Fair

Photo 2.4.2.1-1 Furnace serving the Lake House

Recommendations

We recommend you plan to replace the furnace at the end of the component's useful life. A replacement budget has been included in Table 1.

2.4.3 Air System(s) – Distribution and Terminal Units

2.4.3.1 Ductwork (Lake House)

Description/History/Condition

Air from the furnace is distributed throughout the Lake House by overhead supply, return air ductwork and related components (supply and return air registers, etc.).

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Recommendations

The ductwork is expected to last the life of the building. Capital expenditures are not anticipated to be required.

2.4.4 Exhaust System(s)

2.4.4.1 Exhaust Fan(s) (Lake House)

Description/History/Condition

Exhaust fans at the Lake House for ventilation include:

- one residential-style exhaust fan in each washroom, controlled by wall switches (five total).
- one over the range microwave with hood fan that provides ventilation to the kitchen.

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.4.4.1-1 Typical washroom exhaust fan

Photo 2.4.4.1-2 Microwave with hood fan

Recommendations

We anticipate the washroom exhaust fans will be replaced individually as needed, each at a cost below the capital expense threshold.

We also anticipate the microwave will be replaced at its end of life at a cost below the capital expense threshold.

2.4.5 Other HVAC Terminal Units

2.4.5.1 Ceiling-Hung Electric Heaters (Garage)

Description/History/Condition

Two horizontal discharge ceiling-hung electric heaters provide heat to the garage.

No service issues were reported.

Year of Installation	2017
Typical Life Cycle of Component	20
Component Condition	Good

Photo 2.4.5.1-1 Ceiling-mounted electric heater at garage

Recommendations

We recommend you plan to replace the heaters at the end of the component's useful life. A budget to replace the heaters has been included in Table 1.

2.4.5.2 Natural Gas Fireplace (Lake House)

Description/History/Condition

There is a natural gas fireplace at the upper-level open area of the Lake House.

At the time of our site visit, the fireplace was not operating. Site staff reports they are in the process of repairing the fireplace as part of regular maintenance, and the issue is likely related to a switch.

Year of Installation	2001
Typical Life Cycle of Component	25
Component Condition	Good

Photo 2.4.5.2-1 Natural gas fireplace at Lake House upper level

Recommendations

We recommend you plan to replace the fireplace at the end of the component's useful life. A replacement budget has been included in Table 1.

We recommend repairs, periodic cleaning, and inspections are completed as needed. We assume these are completed as part of regular maintenance.

2.4.6 Plumbing Systems

2.4.6.1 Water Supply – Domestic

Description/History/Condition

Corix Utilities provides domestic water service to the homes at The Lake at Heritage Pointe, and other nearby communities. Corix pumps raw water from the Bow River to a water treatment plant on the golf course at Heritage Pointe and distributes the treated potable water by pipeline to the communities. Infrastructure related to supply of water to the communities is owned and managed by Corix.

Water supply to the irrigation system and lake is described in other report sections (2.7.7.1 and 2.7.9.2 respectively).

There are water meters at each house and at the basement mechanical room of the Lake House. No backflow preventer is present at the Lake House.

Year of Installation	2001
Typical Life Cycle of Component	N/A
Component Condition	N/A

Photo 2.4.6.1-1 Incoming water line and meter at Lake House

Recommendations

It is understood that water supply is the responsibility of the utility provider, Corix; therefore, budgets have not been included.

2.4.6.2 Domestic Water Piping (Lake House)

Description/History/Condition

The domestic cold and hot water piping for the Lake House is a combination of copper and PVC, where observed (i.e. at the mechanical room and some sinks).

No leakage issues were reported.

Year of Installation	2001
Typical Life Cycle of Component	Hot and recirculation: ~35

	Cold: ~45
Component Condition	Good

Recommendations

Given the limited extent of piping, we expect you can complete local repairs and replacements as the building ages as part of regular maintenance.

2.4.6.3 Domestic Hot Water Tank Heater(s) (Lake House)

Description/History/Condition

Domestic hot water is generated and stored in two “Bradford White” natural gas-fired water heaters (model #: RG2PV50H6N, serial #’s: XD47735098 / XD47735095). The heaters each have a heating capacity of 58,500 BTU/hr and holding capacity of 181.7L. The tank heaters were replaced in 2021 for a cost of $8,868.

Service problems were not reported.

Year of Installation	2021
Typical Life Cycle of Component	12
Component Condition	Good

Photo 2.4.6.3-1 Domestic hot water tank heaters for Lake House

Recommendations

We recommend you plan to replace the hot water heaters at the end of the component’s useful life. A replacement budget has been included in Table 1.

2.4.6.4 Plumbing Fixtures (Lake House)

Description/History/Condition

Plumbing fixtures at the Lake House include the following.

Men's washroom, upper level:

- One urinal, wall mounted with flushometer and sensor flush.
- One water closet, floor mounted with tank and lever flush.
- One lavatory (sink), counter mounted with push button metering faucet.

Women's washroom, upper level:

- Two water closets, floor mounted with tank and lever flush.
- One lavatory, counter mounted with push button metering faucet.

Men's washroom, lower level:

- One urinal, wall mounted with flushometer and sensor flush.
- One water closet, floor mounted with tank and lever flush.
- One lavatory, counter mounted with push button metering faucet.
- One shared shower with three shower valve sets

Women's washroom, lower level:

- Two water closets, floor mounted with tank and lever flush.
- One lavatory, counter mounted with push button metering faucet.
- Three shower stalls each with a shower valve set.

Barrier-free washroom, lower level:

- One water closet, floor mounted with tank and lever flush.
- One lavatory, wall mounted with push button metering faucet.
- One accessible shower with a shower valve set.

Kitchen, upper level:

- One stainless steel sink with single level faucet.

Mechanical room, lower level:

- One plastic wash sink with dual handle faucet.

Signs of historic leakage were noted below the sink at the men’s lower-level washroom. As issues were not reported, we assume the leak is not active.

The plumbing fixtures are mostly original with the kitchen sink replaced in 2019.

Year of Installation	2001 – general 2019 – kitchen sink
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.4.6.4-1 Typical water closet

Photo 2.4.6.4-2 Typical lavatory

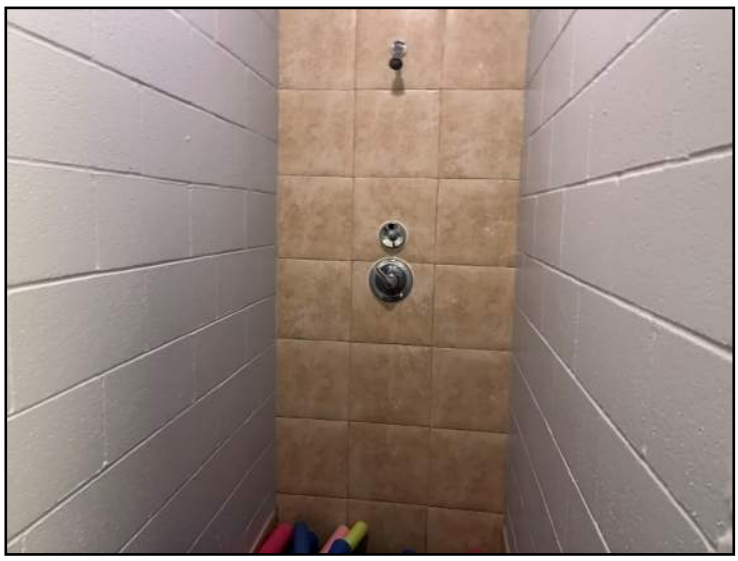


Photo 2.4.6.4-3 Typical shower fixtures

Recommendations

Most of the plumbing fixtures have exceeded a typical service life; however, we expect the service life can continue to be extended based on conditions. A replacement budget has been included in Table 1.

We also recommend replacing the kitchen sink at the end of the component's service life. As the replacement cost is anticipated to be below the capital expense threshold, a budget has not been included in Table 1.

Further, we have not included a budget for replacement of the plastic wash sink as we assume this sink will be replaced on its own when needed at a cost below the capital expense threshold amount.

Replacement of the washroom fixtures is timed with the washroom casework and counter replacement projects.

2.4.7 Drainage Systems

2.4.7.1 Sanitary Drainage System

Description/History/Condition

Sanitary outflow from the houses and Lake House are carried by underground lines to sanitary sewers, likely located below roadways throughout the site.

The sanitary sewers are owned and maintained by Corix. We assume the lines from the houses to the sewers are the unit owner's responsibility, while the line from the Lake House to the sewer is LAHPOA's responsibility.

Reoccurring issues with settlement / heaving was reported to be occurring at curb stomps (where lines from the houses meet the main lines); however, it was reported that it is the utility owners (Corix) responsibility to repair these issues.

Year of Installation	2001
Typical Life Cycle of Component	N/A
Component Condition	N/A

Recommendations

It is understood that the sewer lines are the responsibility of Corix; therefore, budgets have not been included.

The buried line from the Lake House is expected to last the life of the complex. However, if a repair or replacement is required the cost is typically very high given the need for excavation and replacement of overburden and site finishes. Pending ongoing monitoring, repair allowances and replacement budgets have not been included in this study.

We recommend the main buried sanitary drain lines be cleaned (i.e., power flushed or augured) and camera scoped periodically (at minimum, every five years or so). Cleaning helps to clear and prevent blockage and achieve a long service life. Scoping allows for pipe conditions to be monitored. A budget for cleaning and camera scoping has not been included in Table 1, as the cost for the Lake House line is estimated to be below the capital expense threshold amount.

Further, we recommend the LAHPOA consult with the drain cleaning contractor and keep track of conditions noted from camera scopes over time. This will help determine the approach to buried sanitary line repairs. If local or full replacement is determined to be required, budgets should be added to the life cycle assessment accordingly.

2.4.7.2 Stormwater Drainage System (Lake House and Garage)

Description/History/Condition

Storm water from roofs drain via eavestroughs and downspouts to lawns for soil absorption. Eavestroughs and downspouts for the Lake House and garage are covered in the roof section of this report (section 2.2.3.2).

Asphalt-paved areas of the site are drained by catch basins. Catch basins are connected to underground stormwater sewer lines, likely located below roadways throughout the site.

The stormwater sewers are reported to be owned and maintained by Corix.

Stormwater at landscaped areas appears to be managed by ground absorption, swales and runoff to lower lying vegetated areas. Site servicing drawings were not available for review.

Previous issues with ponding water at the “Heritage Isle” and with stormwater runoff at the Lake House causing soil erosion was reported at the time of the previous report. It was reported that repairs have been completed at these locations.

Year of Installation	2001
Typical Life Cycle of Component	N/A
Component Condition	N/A

Recommendations

Catch basins and sewer lines are the responsibility of Corix, so no related capital expenditures are included.

2.4.7.3 Stormwater Sump Pit and Pump (Lake House)

Description/History/Condition

There is one stormwater sump pit with a single submersible pump, located in the mechanical room of the Lake House. We estimate that the pump is fractional HP and original to the building.

No service issues were reported.

Year of Installation	2001
Typical Life Cycle of Component	15
Component Condition	Unknown

Photo 2.4.7.3-1 Stormwater sump pit

Recommendations

Sump pits are expected to remain in service for the life of the building.

We recommend that you plan to replace the pump as needed. As the replacement cost is anticipated to be below the capital expense threshold, a replacement budget has not been included in Table 1.

2.5 Electrical Systems

2.5.1 Main Electrical Equipment

2.5.1.1 Main Electrical Transformer(s)

Description/History/Condition

Power is provided by underground conductors to the houses, Lake House and various equipment from several pad-mounted transformers located throughout the site. The transformers are owned by the electrical utility company (Fortis). It is assumed that the buried conductors, up to the electrical meters, are also a Fortis responsibility.

No electrical distribution issues were reported.

Year of Installation	2001
Typical Life Cycle of Component	N/A
Component Condition	N/A

Photo 2.5.1.1-1 Typical utility pad-mounted transformer

Recommendations

Capital expenditures are not included as the transformer, buried lines, and meters are assumed to be owned by the utility supplier.

2.5.2 Electrical Distribution

2.5.2.1 Branch Circuit Panels (Lake House and Garage)

Description/History/Condition

There is one branch circuit panel in the Lake House and one in the garage.

- Lake House Panel: Manufactured by “Cutler Hammer”, rated at 200A max, 120/240V, single phase, three wire. This panel includes a main breaker rated at 200A, and other branch circuit breakers.
- Garage Panel: Manufactured by “Siemens”, rating not indicated. This panel includes two main breakers rated at 100A, and other branch circuit breakers.

No service issues were reported.

Lake House Branch Circuit Panel

Year of Installation	2001
Typical Life Cycle of Component	45
Component Condition	Good

Garage Branch Circuit Panel

Year of Installation	2017
Typical Life Cycle of Component	45
Component Condition	Good

Photo 2.5.2.1-1 Electrical branch circuit panel for Lake House

Recommendations

We recommend you plan to replace the panels at the end of the component's service life. A budget has been included for the Lake House in Table 1. A budget has not been included for the garage as replacement is not anticipated to be required within the report term.

2.5.2.2 Electrical Equipment Serving Lake Equipment

Description/History/Condition

Electrical distribution equipment serving lake equipment is located outdoors within a fenced enclosure, just south of the area where the creek from the upper lake enters the lower lake. The equipment is mounted to a painted plywood board, supported by a painted metal frame, and is listed below. The equipment was installed in 2001, except as noted below.

- Main fused disconnect switch (manufactured by "Federal Pioneer", 200A, 600V, 3 phase, 3 wire)
- Electrical meter (owned by the utility provider)
- Fused disconnect switch for Compressors (manufactured by "Federal Pioneer", amp rating not confirmed, 600V, 3 phase, 3 wire). This appears to have been replaced when the compressors were replaced in 2017.
- Fused disconnect switch, labelled "do not turn off" (manufactured by "Federal Pioneer", 30A, 600V, 3 phase, 3 wire)

- Fused disconnect switch for Irrigation (manufactured by “Federal Pioneer”, 100A, 600V, 3 phase, 3 wire)
- Motor starter controller for Fountain
- Motor starter controller for Compressors
- Transformer (manufactured by “Marcus”; kVA rating not confirmed)
- One splitter box
- Disconnect switch not labeled
- Surge Protection Device (manufactured by “Surge Pure”), reported to have been installed in 2017 at a cost of $3,000
- Irrigation variable frequency drive (VFD) (manufactured by “Schneider”), reported to have been replaced in 2022 for approximately $10,000

No service issues were reported.

Year of Installation	2001 / 2017 / 2022
Typical Life Cycle of Component	General equipment – 35 Transformer – 25 Surge protection, VFD – 15
Component Condition	Good

Photo 2.5.2.2-1 Electrical distribution equipment for lake equipment

Recommendations

We recommend you plan to replace the main fused disconnect switch, transformer, splitter box, disconnect switches, VFD, and surge protection device at the end of the component's useful life. Replacement budgets have been included in Table 1 for components expected to reach the end of service life within the report term.

We anticipate the fused disconnect switches and motor controllers will be replaced along with the equipment being served, and so replacement costs are included in the equipment replacement costs.

2.5.3 Lighting

2.5.3.1 Interior Light Fixtures – Lake House

Description/History/Condition

- Upper level, main area: 3 suspended chandeliers with 13 lamps each, 12 recessed downlight (potlight) fixtures, 1 ceiling-mounted decorative fixture over the fireplace, and 2 small recessed downlight (potlight) fixtures over the sink
- Upper level washrooms: 4 ceiling-mounted and wall-mounted decorative fixtures
- Stairwell: 1 suspended chandelier fixture with 5 compact fluorescent lamps
- Lower-level open area: 7 ceiling mounted wrap-around moisture-resistant linear fluorescent fixtures
- Lower-level washrooms: 4 ceiling-mounted wrap-around moisture-resistant linear fluorescent fixtures, and 5 recessed downlight (potlight) fixtures
- Mechanical room: 3 ceiling-mounted lamp holders

The light fixtures are estimated to be mostly original to the building. At the time of the previous report, the linear fixtures were reported to have been replaced around 2016.

Locally discolored and flickering lamps were noted at the lower-level linear fixtures.

Year of Installation	Generally 2001 Linear fixtures ~2016
Typical Life Cycle of Component	20
Component Condition	Good

Photo 2.5.3.1-1 Chandelier and recessed downlight (potlight) fixtures at upper level

Photo 2.5.3.1-2 Typical linear fluorescent fixtures at lower level

Recommendations

We recommend you plan to replace the light fixtures at the end of the component's useful life. Most of the light fixtures have exceeded a typical service life; however, we anticipate the service life can continue to be extended based on conditions. Replacement budgets have been included in Table 1 accordingly. We have assumed replacement with LED fixtures, as these are current industry standard.

We assume that lamps and ballasts are replaced individually when needed as part of regular maintenance. Therefore, allowances for these components have not been included in Table 1.

2.5.3.2 Interior Light Fixtures – Garage

Description/History/Condition

There are nine ceiling-mounted linear fluorescent fixtures (including caged and wrap-around covers) in the garage.

Year of Installation	2017
Typical Life Cycle of Component	20
Component Condition	Good

Recommendations

We recommend you plan to replace the light fixtures at end of useful life. A budget has been included in Table 1.

We assume lamps and ballasts are replaced individually when needed as part of regular maintenance. Therefore, allowances for these components have not been included in Table 1.

2.5.3.3 Exterior Light Fixtures – Soffit and Wall-Mounted (Lake House and Garage)

Description/History/Condition

Exterior wall and soffit-mounted light fixtures include the following:

- 26 recessed downlight (potlight) soffit fixtures at the Lake House
- Six wall-mounted light fixtures with compact fluorescent lamps at the Lake House.
- Three decorative wall-mounted light fixtures at the garage.

No issues were reported.

Lake House Exterior Light Fixtures

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Garage Exterior Light Fixtures

Year of Installation	2017
Typical Life Cycle of Component	20
Component Condition	Good

Photo 2.5.3.3-1 Typical soffit recessed downlight (potlight) fixture at Lake House

Photo 2.5.3.3-2 Wall-mounted light fixture at garage

Recommendations

We recommend you plan to replace the light fixtures at the end of the component's service life. Light fixtures at the Lake House have exceeded a typical service life; however, based on conditions we anticipate the service life can continue to be extended. A replacement budget has been included in Table 1 accordingly.

Based on the limited amount, we anticipate the exterior lights at the garage can be replaced as needed, at a cost below the capital expense threshold.

We also assume that lamps and ballasts are replaced individually when needed as part of regular maintenance. Therefore, allowances for these components have not been included in Table 1.

2.5.3.4 Exterior Light Fixtures –Ground-Mounted

Description/History/Condition

There are ground-mounted spotlight fixtures to illuminate the “heritage tree” (two HID light fixtures), and the “Heritage Isle” sign (six LED fixtures).

Other signs are illuminated with small solar-powered lights which are assumed to be replaced as a maintenance cost.

No issues were reported.

Year of Installation	Estimated 2001
Typical Life Cycle of Component	20
Component Condition	Fair

Recommendations

We recommend you plan to replace the ground-mounted light fixtures on an as-needed basis. As individual replacement costs are estimated to be below the capital expense threshold, we have not included replacement budgets in Table 1.

2.5.3.5 Exterior Light Fixtures – Poles with Fixtures

Description/History/Condition

There are five, pole-mounted light fixtures (three decorative and two spotlight) located near the Lake House. These are controlled by a timeclock located in the Lake House mechanical room.

The exterior light poles are painted metal, supported on poured concrete bases (estimated 15 feet tall).

No issues were noted nor reported.

Fixtures

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Poles

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Good

Photo 2.5.3.5-1 Pole-mounted light fixtures

Recommendations

The pole-mounted light fixtures (light fixtures only) have remained in service beyond a typical service life for this component; however, based on current conditions we anticipate the service life can continue to be extended. A replacement budget has been included in Table 1 after an extended service life.

We also recommend you plan to replace the light poles at the end of the components service life. As this is beyond the report term, a budget has not been included in Table 1.

We assume that lamps and ballasts are replaced individually when needed as part of regular maintenance. Therefore, allowances for these components have not been included in Table 1.

2.5.4 Communications and Security

2.5.4.1 Data Systems (Lake House)

Description/History/Condition

There is internet service to the Lake House, with central modem and router equipment in the mechanical room at the lower level. We understand that internet service is provided by Telus and was installed in 2017.

Year of Installation	2017
Typical Life Cycle of Component	10
Component Condition	Good

Recommendations

We recommend that you plan to replace data equipment as needed. The cost for this residential-type equipment is expected to be below the capital expense threshold, therefore a replacement budget has not been included in Table 1.

2.5.4.2 Security Cameras (Lake House and Garage)

Description/History/Condition

The Lake House, garage, and surrounding areas are monitored by a security camera system. The system includes software (installed on a CPU, with a monitor located at the front desk), a digital video recorder (also located at the front desk), and approximately 11 cameras (including wired and wireless models).

Upgrades to the system were completed in 2021; however, most of the system is estimated to have been installed in 2017. It was reported that maintenance is completed regularly to replace batteries and damaged cameras as needed.

No issues were reported.

Year of Installation	2017
Typical Life Cycle of Component	15
Component Condition	Good

Photo 2.5.4.2-1 Indoor security camera

Recommendations

We recommend you plan to replace the security camera system at the end of the system's useful life. A budget has been included in Table 1. Service life has been assigned as 15 years based on changing technology.

We also recommend continuing regular maintenance. A budget has not been included as we assume this is completed as a regular maintenance activity.

2.5.4.3 Intrusion Monitoring System (Lake House and Garage)

Description/History/Condition

There is an intrusion monitoring and alarm system for the Lake House and garage, including a control panel in the Lake House mechanical room, field devices, and keypads at the Lake House and garage main entrance doors. The system is monitored by the security company.

According to the previous LCA report, the system was last upgraded in 2017.

Issues with the system were not reported.

Year of Installation	2017
Typical Life Cycle of Component	15
Component Condition	Good

Recommendations

We recommend you plan for replacement of the intrusion monitoring system at the end of the useful life for this component. A replacement budget has been included in Table 1. Service life has been assigned as 15 years based on changing technology.

2.5.4.4 Access Control System

Description/History/Condition

There is an access control system for secure access through gates located throughout the site (including the gate to the Lake House, gate to the tennis court, and gates at the various entrances to the pathways around the lake, approximately eight total).

The access control system includes card readers and locking mechanisms (magnetic locks). Some of the magnetic locks are hard-wired, and others are powered remotely by small solar panels.

The LAHPOA reports that the security access control system was replaced in 2019 for a cost of $58,831.

Year of Installation	2019
Typical Life Cycle of Component	15
Component Condition	Good

Photo 2.5.4.4-1 Access control card reader at Lake House

Photo 2.5.4.4-2 Access control card reader with solar panel at tennis court

Recommendations

We recommend you plan for replacement of the access control system at the end of the useful life for this component. A replacement budget has been included in Table 1. Service life has been assigned as 15 years based on changing technology.

2.6 Fire and Life Safety Systems

2.6.1 Suppression System(s)

2.6.1.1 Fire Extinguishers (Lake House and Garage)

Description/History/Condition

The Lake House is protected with three fire extinguishers, two on the upper floor and one on the lower floor. There is also a fire extinguisher at the garage.

The fire extinguisher near the front door of the Lake House was sitting on the floor.

Year of Installation	Lake House: 2001 Garage: 2017
Typical Life Cycle of Component	12
Component Condition	Good

Recommendations

We assume individual extinguishers are replaced individually as needed as part of regular maintenance. Therefore, replacement budgets have not been included in Table 1.

Annual inspections are required by the Fire Code and are assumed to be completed as a maintenance activity. Therefore, allowances for inspections have not been included in Table 1.

We recommend the fire extinguisher on the floor be mounted to the wall, as is required by the Alberta Fire Code.

2.6.2 Fire Alarm and Detection

2.6.2.1 Smoke/Heat Alarms (Lake House)

Description/History/Condition

The Lake House is equipped with hard-wired smoke/heat alarms at each level for fire detection and signaling. The detectors are connected to the intrusion alarm and detection system.

Year of Installation	Not confirmed
Typical Life Cycle of Component	10
Component Condition	Good

Photo 2.6.2.1-1 Typical smoke/heat alarms

Recommendations

We recommend you budget to replace the alarms at the end of the component's useful life and test monthly. We expect that individual replacements will be completed as a maintenance activity.

2.6.3 Emergency Power and Lighting

2.6.3.1 Emergency Lighting (Lake House)

Description/History/Condition

Emergency lights are located throughout the Lake House to help with egress in emergency situations. They consist of remote head fixtures (throughout the upper and lower levels) powered by battery packs (located in the mechanical room at the lower level).

Year of Installation	Not confirmed
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.6.3.1-1 Typical remote head emergency light

Photo 2.6.3.1-2 Emergency lighting battery packs

Recommendations

We recommend you plan to replace the batteries and the light fixtures at the end of the component's useful life. We expect individual replacements will be completed as needed as part of regular maintenance.

2.6.3.2 Exit Lighting (Lake House)

Description/History/Condition

Illuminated exit lights are located over exit doors at the Lake House and at the garage.

No issues were noted nor reported.

Year of Installation	Not confirmed
Typical Life Cycle of Component	20
Component Condition	Good

Photo 2.6.3.2-1 Exit sign at Lake House

Recommendations

We recommend you plan to replace the exit signs at the end of the component's service life. Given the limited amount, we expect that individual replacements will be completed as needed, as part of regular maintenance.

Lamps (bulbs) will also require periodic replacement; we also assume this to be a maintenance expense.

2.6.4 Other

2.6.4.1 Fire Separation Repairs

Description/History/Condition

A Code review was excluded from the scope of this assessment; however, the 2017 life cycle assessment had reported the local fire department identified areas requiring remediation. One being the areas of the walls and ceilings in the basement mechanical room were not originally finished with gypsum board required finishing. The second issue was the wall and ceiling penetrations required fire stop sealing (caulking) for fire separation purposes. It appears these repairs were completed since the last LCA; however, we saw isolated portions of the walls without gypsum board finish, several gypsum board joints without tape or mud, and several mechanical penetrations without firestopping (see photos below).

Year of Installation	Not confirmed
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.6.4.1-1 Mechanical penetration without firestopping, and gypsum board joints without tape or mud

Recommendations

We recommend completion of the firestopping repairs. The cost for remaining repairs is estimated to be below the capital expense threshold.

2.7 Site Improvements

2.7.1 Paving

2.7.1.1 Asphalt Paving – Parking Lot

Description/History/Condition

Parking near the Lake House is on grade in a lot across the street and to the southwest of the Lake House and north of the garage. There are approximately 40 parking stalls. The parking area is paved with asphalt with parking stall markings throughout.

It was reported by the LAHPOA the parking lot was repaved in 2019 for a cost of $112,111.

We noted local areas of dense cracking and settlement throughout the paving.

Year of Installation	2019
Typical Life Cycle of Component	30
Component Condition	Good

Photo 2.7.1.1-1 Local dense cracking and settlement at asphalt parking lot

Photo 2.7.1.1-2 Settlement / heaving at north side of garage

Recommendations

We recommend you plan for replacement of the asphalt at the end of the useful life for this component. As this is beyond the report term, a replacement budget has not been included in Table 1.

In the interim (between full replacement projects), we recommend budgeting for local repairs to address problem areas (i.e., extensive settlement, heaving, or potholes). A periodic asphalt paving repair allowance has been included in Table 1. Long cracks can be hot pour-sealed as part of ongoing maintenance or out of this allowance. The first occurrence of this allowance has been included in the near term to help address the settlement / heaving causing water ingress to the garage.

Repainting of the parking stalls may be required as often as every two years. We assume this is completed as a maintenance activity.

2.7.1.2 Asphalt Paving – Walkways

Description/History/Condition

There are on-grade asphalt walkways located around the Lake House and at various walking paths around the community.

It was reported by the LAHPOA that walkways near the Lake House and walking paths near the lake were milled and overlayed in 2020 for a cost of $54,301. The walkways at the "Heritage Isle" are estimated to be original to the site.

We noted local dense cracking throughout the paving. There were also some areas of heaved paving (possibly from tree roots) that may be tripping hazards.

Year of Installation	Near the lake House and Lake – 2020 Heritage Isle – 2001
Typical Life Cycle of Component	30
Component Condition	Fair

Photo 2.7.1.2-1 Raised asphalt sidewalk areas that may be tripping hazards

Recommendations

We recommend you plan for full replacement of the asphalt walkways at the end of the useful life for this component. Based on the condition at the Heritage Isle and as the other walkways

have been milled and overlayed, we anticipate the paving can provide additional service life. Budgets for full replacement have been included in Table 1, after the extended life.

In the interim (between full replacement projects), we recommend you budget for local repairs to address problem areas (i.e., extensive settlement, heaving, or potholes). A periodic asphalt paving repair allowance has been included in Table 1. Long cracks can be hot pour-sealed as part of ongoing maintenance, or out of this allowance.

2.7.1.3 Asphalt Paving - Sports Court

Description/History/Condition

There is asphalt paving at the exterior sports court covered with a modular sport traffic surface. The paving appears to be older than the adjacent parking lot, and we estimate the paving and sports surface are original to the site.

Some of the sports surface tiles were noted to be lifting and/or displaced and may be a tripping hazard. Review of the paving was limited due to the sports surface; no major heaving nor settlement was noted.

Asphalt Paving

Year of Installation	2001
Typical Life Cycle of Component	30
Component Condition	Fair

Sport Traffic Surface

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.7.1.3-1 Lifting and displaced sports surface tiles

Recommendations

We recommend you plan to replace the asphalt paving at the end of the component's useful life. A budget has been included in Table 1.

In the interim (between full replacement projects), we recommend you budget for local repairs to address problem areas (i.e., extensive settlement, heaving, or potholes). We expect repairs can be completed as part of the parking lot asphalt repair project included in Section 2.7.1.1.

The sports surface has remained in service beyond a typical service life for this component; however, we anticipate the service life can continue to be extended as the condition remains fair. A replacement budget has been included in Table 1, after an extended service life. We have allowed for replacement to coincide with the asphalt replacement project.

Local repairs or replacements of the sports surface tiles to limit tripping hazards should be completed as needed as part of regular maintenance.

2.7.1.4 Concrete Paving

Description/History/Condition

There are various on-grade concrete walkways and pads located to the north and south of the Lake House, including concrete steps accessing the beach from the Lake House. The paving is estimated to be mostly original to the site; the concrete steps accessing the beach were replaced in 2019 for a cost of $4,269.

We noted isolated fine cracks at the concrete paving. It was reported that water ponds at the concrete pad to the north of the Lake House.

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Fair

Photo 2.7.1.4-1 Crack at concrete pad at north side of Lake House

Recommendations

We recommend you plan for replacement of the concrete paving at the end of the component's useful life. As this is beyond the report term, a replacement budget has not been included in Table 1.

We also recommend planning for regular repairs to help the paving reach a full service life, and to address any tripping hazards that arise. A repair budget has been included in Table 1.

2.7.1.5 Paving – Interlocking Concrete Unit Pavers

Description/History/Condition

There are interlocking concrete unit pavers at the exterior fire pit and sitting area to the east of the Lake House. Access to both these areas is by stairs also constructed of concrete unit pavers.

Local minor settlement was noted at the unit pavers.

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Good

Photo 2.7.1.5-1 Interlocking concrete unit pavers to fire pit

Recommendations

We recommend you plan for replacement of the unit pavers at the end of the component's service life. As this is beyond the report term, a replacement budget has not been included in Table 1.

Interlocking unit pavers typically require periodic local re-setting and replacements in between general replacement. A periodic allowance has been included in Table 1 to re-set the pavers.

2.7.2 Exterior Guards and Handrails

2.7.2.1 Guards

Description/History/Condition

Guards are present at the perimeter of the Lake House raised deck and are prefinished aluminum-framed pickets and rails, fastened to wood posts.

Peeling finish was noted locally.

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Photo 2.7.2.1-1 Typical guard rail at Lake House

Photo 2.7.2.1-2 Peeling finish at guard rail

Recommendations

We recommend you plan for replacement of the guards at the end of the component's useful life. A replacement budget has been included in Table 1. Timing has been adjusted slightly to coincide with replacement of the deck waterproofing (see Section 2.1.2.3).

If needed, local repairs and touch-up painting are anticipated to be completed as a maintenance activity.

2.7.3 Signage

2.7.3.1 Exterior Signs

Description/History/Condition

Site signs (and flagpoles) include the following:

- A freestanding main community entrance sign (south entrance) clad with manufactured stone and "roofed" with cedar shingles. There are also eight decorative stone-clad "pylons" along the roadway near the front entrance sign, and some adjoined wrought iron fencing. Some letters may have been replaced in 2019, as reported by site staff.
- Five street entrance signs clad with manufactured stone (two of these integrate fencing). There are also some decorative stone-clad "pylons" along the roadway near these signs (eight total), and fencing adjoined to some of the signs. Some letters may have been replaced in 2019, as reported by site staff.
- One large billboard sign facing Macleod Trail. We estimate this was installed in 2018 during the $13,350 community signage repair/replace project.
- Two "Community and Events" freestanding sign at the front of the Lake House and at the west entrance. We estimate these were installed in 2018 during the $13,350 community signage repair/replace project.
- Ten decorative banners suspended off M.D. power poles. These were last replaced in 2022 for a cost of $1,440.
- Approximately 40 metal panel signs around the lake and community, mostly mounted on fences or gates, some mounted on metal poles.

We noted vegetation growth at the stone cladding at the south entrance sign and some of the street entrance signs. Peeling paint was noted at the wood fascia at the south entrance sign.

Stone Clad Signs (south entrance and street entrances)

Year of Installation	2001
Typical Life Cycle of Component	60
Component Condition	Good

Billboard

Year of Installation	2018
Typical Life Cycle of Component	25
Component Condition	Good

Community and Events Signs

Year of Installation	2018
Typical Life Cycle of Component	20

Component Condition	Good

Decorative Banners

Year of Installation	2022
Typical Life Cycle of Component	5
Component Condition	Good

Metal Panel Signs

Year of Installation	2001
Typical Life Cycle of Component	30
Component Condition	Good

Photo 2.7.3.1-1 Stone-clad sign at south entrance

Photo 2.7.3.1-2 Billboard sign

Photo 2.7.3.1-3 Community and Events sign

Photo 2.7.3.1-4 Vegetation growth at stone cladding

Recommendations

We recommend you plan to replace the various signs at the end of the components' useful life. Budgets have been included in Table 1 for signs that are expected to reach the end of service life within the report term.

Local repairs including cleaning the stone cladding, repair and repainting the wood "roofing", and local replacement of letters are expected to be completed as needed as part of regular maintenance.

We assume the decorative banners will be replaced individually as needed at a cost below the capital expense threshold.

2.7.4 Fences and Gates

2.7.4.1 Fences – Chain-link

Description/History/Condition

There are prefinished chain-link fences located around the sports court. There is also one entry gate within this fence.

Peeling finish and local detachment at the base of fence posts was noted.

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Photo 2.7.4.1-1 Peeling finish at chain link fence

Recommendations

We recommend you plan to replace the chain link fence and gate at the end of the component's useful life. A budget has been included in Table 1.

We assume local repairs and touch-up painting will be completed as needed as part of regular maintenance.

2.7.4.2 Fences - Metal

Description/History/Condition

There are prefinished metal picket fences located around the Lake House (about 1.8m tall) and at yards that face common asphalt pathways throughout the site (about 1.2m tall). It is unknown if the fences along pathways are the responsibility of LAHPOA.

We noted the finish was chipped and faded at isolated areas. We also noted a damaged picket at one location near the gate to the Lake House.

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Photo 2.7.4.2-1 Chipped fence finish

Photo 2.7.4.2-2 Bent fence picket

Recommendations

We recommend you plan for replacement of the fences at the end of the component's typical service life. A replacement budget has been included in Table 1. We also recommend confirming the responsibility of the fences located along pathways and removal of these fences from the plan if not owned by LAHPOA.

Local repairs and touch-up painting are assumed to be completed as needed as part of regular maintenance.

2.7.4.3 Gates - Metal

Description/History/Condition

There are ten security gates incorporated within the metal fences for access to the Lake House, lake, and pathways. Most of the gates include access control systems, discussed in Section 2.5.4.4.

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Photo 2.7.4.3-1 Typical gate access to lake

Recommendations

We recommend you plan to replace the gates at the end of the component's useful life, with the fences. A replacement budget has been included as part of the fence replacement budget.

Repairs to gate hardware are assumed to be completed as a maintenance activity.

2.7.5 Retaining Walls

2.7.5.1 Retaining Walls – Modular Concrete Blocks

Description/History/Condition

There are modular concrete block retaining walls at the fire pit and on each side of the Lake House. The retaining walls appeared to be generally retaining less than 1m of organic matter.

Evidence of movement is present at the retaining walls at both sides of the Lake House. It is unknown if movement is a new occurrence or the result of previous issues with drainage and settlement that were reported to have been rectified.

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Fair

Photo 2.7.5.1-1 Evidence of movement at retaining wall

Photo 2.7.5.1-2 Evidence of movement at retaining wall

Recommendations

We recommend you plan to replace the retaining wall at the end of the component's typical service life. As this is beyond the report term a replacement budget has not been included in Table 1.

Local repairs will be required periodically to maintain the retaining walls. An allowance for repairs to the current issues, by a qualified contractor, has been included in Table 1. This allowance has been cycled for potential future repairs. Note that a structural engineer is typically required if the retaining wall is retaining 1m of soil or more. Additional costs may apply if a structural engineer is determined to be required.

2.7.6 Landscaping

2.7.6.1 Soft Landscaping

Description/History/Condition

Soft landscaping includes sod, plantings, trees, top soil, and planters.

It was reported by LAHPOA that the garden beds were restored between 2018 and 2022 for a total cost of approximately $37,000.

Current issues with ponding water and site settlement were not reported. Where reviewed, landscaping appeared to be well maintained.

The LAHPOA reports that all the landscaping throughout the community is maintained by the association; however, 24% of the costs are the responsibility of the County.

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Photo 2.7.6.1-1 Typical shrubs and trees

Recommendations

We understand landscaping is maintained by the LAHPOA as part of regular maintenance, and we assume this practice will continue.

Trees typically require escalating care as they mature. Eventually, removal and replacement of some trees will likely be required. An allowance in Table 1 has been included for eventual replacement and maintenance of some trees every year.

2.7.6.2 Hard Landscaping

Description/History/Condition

Hard landscaping includes various boulders and sand at beach located behind the Lake House.

Sand was last added to the beach in 2019 at a reported cost of $5,000.

Sand

Year of Installation	2001
Typical Life Cycle of Component	10 (erosion control)
Component Condition	Fair

Boulders

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Recommendations

The sand and boulders are expected to remain in service for the life of the complex.

Sand will need to be added to the beach periodically to account for erosion. A periodic budget has been included in Table 1.

2.7.7 Irrigation

2.7.7.1 Irrigation System

Description/History/Condition

Green areas throughout The Lake at Heritage Pointe are watered with an irrigation system using water from the lake. The pump that lifts water from the lake into the upper pond also pumps water to and through the irrigation system (this pump is discussed in section 2.7.9.4).

Drawings were not available to confirm exact details; however, the LAHPOA provided the following overview:

- Hunter controllers located as follows: at the Lake House, near the pump station, behind 84 Heritage Lake Blvd., behind the decorative Heritage Pointe sign at start of Heritage Isle, beside 241 Isle.
- Approximately 119 zones
- Estimated 1000 sprinkler heads
- Estimated 10,000m of buried piping

It was reported the irrigation system has undergone major repairs and upgrades over the last five years at a cost of approximately $58,000. Two zones remain to be repaired in 2023. Since repairs have been completed to most of the system, the system was reported to be in good working condition.

Year of Installation	Installation 2001 Major repairs 2018-2023
Typical Life Cycle of Component	50
Component Condition	Good

Photo 2.7.7.1-1 Typical irrigation controller

Recommendations

We recommend you budget for annual repairs or replacement of isolated components. An allowance has been included in Table 1 accordingly. Spring start-up and fall shut-down costs have not been included in this repair allowance and are assumed to be completed as part of regular maintenance.

We also recommend that you budget for eventual full system replacement. Allowances have been included in Table 1 accordingly. Performance should be assessed closer to the time of replacement to see if life can be extended beyond this time.

2.7.8 Other

2.7.8.1 Exterior Site Furniture

Description/History/Condition

Exterior furnishings include:

- Wood benches supported with metal frames
- Composite benches supported with metal frames
- Picnic tables
- Basketball hoop
- Tennis net

We estimate most of the site furniture is original to the site. Some of the benches appear to have been replaced as needed.

Peeling paint was noted at some wood bench boards.

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Recommendations

We recommend that plan to replace the site furniture at the end of the component's useful life. A replacement allowance has been included in Table 1. We have phased the replacement such that all furniture can be replaced in an approximate 20 year period.

We expect that individual repairs and replacements will also be completed as needed, using operating funds.

2.7.8.2 Playground Equipment

Description/History/Condition

There are three playgrounds located throughout the community; at the Lake House, north end of the lake, and Heritage Isle. The playgrounds include numerous playground equipment structures and a pea gravel or mulch surfacing with wood or plastic edging.

It was reported that the equipment at Heritage Isle is planned to be replaced in 2023 and that the current equipment will be repurposed to the other playgrounds.

Signs of age and general wear and tear was noted at the playground equipment. Areas of missing mulch and loose exposed landscaping fabric was noted at Heritage Isle. The loose landscaping fabric may be a tripping hazard.

Playground Equipment

Year of Installation	2001
Typical Life Cycle of Component	25
Component Condition	Fair

Playground Surfacing

Year of Installation	2001
Typical Life Cycle of Component	25
Component Condition	Fair

Photo 2.7.8.2-1 Typical playground equipment

Photo 2.7.8.2-2 Loose landscaping fabric

Recommendations

In the immediate term we recommend securing any loose landscaping fabric to limit tripping hazards. We anticipate this will be completed as part of regular maintenance.

We recommend you plan for replacement of the equipment and surfacing at Heritage Isle as planned. A budget of $300,000 was provided by LAHPOA and has been carried in Table 1. A budget of $25,000 has also been included to repurpose the equipment to the other playgrounds, as provided by LAHPOA.

We also recommend you plan to replace the playground equipment and surfacing at the north end of the lake and Lake House at the end of the components' service life. Based on current

condition, and as equipment from Heritage Isle is being repurposed into these playgrounds, we anticipate that the service life can be extended. We have included replacement budgets in Table 1 at the end of an extended service life.

2.7.8.3 Waste and Recycling Bins

Description/History/Condition

The following waste and recycling bins were noted on site:

- Metal exterior waste and recycling bins mounted to concrete slabs located at walking paths throughout the complex (approximately 15).
- Four composite waste collectors mounted to concrete slabs for waste, recycling, and compost collection; three of the collectors are located at the exterior of the Lake House and one is located at the interior.
- Each house has three plastic bins for waste, recycling, and compost collection that are reported to be owned by LAHPOA (~1470 total). There are also approximately 10 bins located at the Lake House.

The composite waste collectors were installed in 2019 for a cost of $12,895 and approximately 100 plastic bins were replaced in 2022 for a cost of $7,877.

Metal Waste and Recycling Bins

Year of Installation	2001
Typical Life Cycle of Component	40
Component Condition	Good

Composite Waste Collectors

Year of Installation	2019
Typical Life Cycle of Component	25
Component Condition	Good

Plastic Waste Bins

Year of Installation	Average: 2015
Typical Life Cycle of Component	15
Component Condition	Good

Photo 2.7.8.3-1 Metal recycling and waste bins

Photo 2.7.8.3-2 Composite waste collector

Photo 2.7.8.3-3 Plastic recycling and waste bins

Recommendations

We recommend you plan to replace the various types of waste and recycling bins at the end of the component's service life. Replacement budgets have been included in Table 1. The replacement budget for the plastic bins has been included in a phased manner, per budgets provided by the Association.

Local repair or replacements, if required in the interim, are expected to be completed as a normal maintenance activity.

2.7.8.4 Natural Gas Fire Pit

Description/History/Condition

There is a natural gas fire pit to the northwest of the Lake House. The pit includes concrete unit masonry walls, a burner, a buried gas service line, a steel grille, and a painted steel frame around the pit.

Surface corrosion was noted at the firepit grille.

Year of Installation	2001
Typical Life Cycle of Component	General – 30 Burner – 10
Component Condition	Good

Photo 2.7.8.4-1 Natural gas fire pit

Recommendations

We recommend you plan for replacement of all fire pit components and the burner at the end of the components' useful life. Replacement budgets have been included in Table 1. We expect the grille can be replaced as needed at a cost below the capital expense threshold.

2.7.9 Lake and Related Components

2.7.9.1 Manmade Lakes and Creek

Description/History/Condition

There is a manmade lower and upper lake of the following approximate specifications (per measurements and information provided by the LAHPOA at the time of our previous report):

- Lower lake: Surface area of ~23 acres, perimeter distance of ~5,590 feet (1704m), average depth of 14 feet (4.3m), estimated volume of around 402,000 cubic metres.
- Upper lake: Surface area of ~1.3 acres, perimeter distance of ~960 feet (293m), average depth of 5 feet (1.5m), estimated volume of around 8,200 cubic meters.

There is also a creek that runs from the upper lake to the lower lake to help with aeration of the water.

The Association does not have any documentation showing the details of the lake construction, however, it is known the two lakes each have a membrane liner covered by organic material. According to the association, the creek bed linear is 0.88mm (35mils) thick HDPE and believes it is reasonable to assume the lakes are of similar construction. It was also reported that the Association plans to conduct further investigation of the lake liners over the next year.

It is reasonable to assume the lakes and creek were designed for a very long service life, and so a “life of facility” service life has been applied. This approach can be re-assessed during future LCA updates.

Year of Installation	2001
Typical Life Cycle of Component	100
Component Condition	Good

Photo 2.7.9.1-1 Lake

Recommendations

Replacement of the lake membrane linear is not expected to be required within report term. A replacement budget has not been included in Table 1.

2.7.9.2 Water Supply to the Lake

Description/History/Condition

Corix Utilities provides raw water from the Bow River to The Lake at Heritage Pointe on an as-required basis to top up the lake. Corix also provides raw water to other communities for irrigation and for top up of water features. Infrastructure related to water supply to the lake is owned and maintained by Corix.

The LAHPOA reported that water for the lake is topped off as needed by Corix as a maintenance cost.

The association also reports that the water is tested during the summer months and treated for algae, as a maintenance cost.

Year of Installation	2001
Typical Life Cycle of Component	N/A
Component Condition	N/A

Recommendations

No capital expenditures will be required for the water supply system as this is a Corix responsibility.

Lake water top ups and testing/treatment is expected to continue to be completed as part of regular maintenance.

2.7.9.3 Aerators and Compressors

Description/History/Condition

There is an aeration system in the lower lake, including twenty bubbling stations and nine air compressors. These components were not accessible for visual review.

Each bubbling station is a tube-type diffuser, tethered to the bottom of the lake and served by air hoses connected to the air compressors. It is reported by the LAHPOA that the diffusers require maintenance approximately every three years. The diffusers were cleaned and three were replaced in 2022 for a cost of approximately $3,000.

The air compressors are located within a buried concrete vault on land, to the south of the area where the creek from the upper lake meets the lower lake. According to information provided, the compressors are typically 1.2 HP each, manufactured by “Kasco”, model “Tech-Aire KM120”. The eight compressors were last replaced in 2017. Eight of the compressors were reported to have been rebuilt in 2022 and one was replaced at this time for a cost of $830. It is reported by the LAHPOA that the compressors will require a rebuild approximately every two years.

Air is provided from the compressors to the diffusers by PVC lines that run along the bottom of the lake. The LAHPOA reports that there are two 3/4” diameter runs and four 5/8” diameter runs.

No issues were reported.

Diffusers

Year of Installation	2022 (time of last rebuild)
Typical Life Cycle of Component	3 (rebuilding cycle)
Component Condition	Good

Air Compressors

Year of Installation	2017 (seven compressors)

	2022 (one compressor)
Typical Life Cycle of Component	15 (service life) 2 (rebuild cycle)
Component Condition	Good

Air Lines (to diffusers)

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Not visible

Concrete Vault

Year of Installation	2001
Typical Life Cycle of Component	75
Component Condition	Not visible

Recommendations

Continue to maintain / replace aeration diffusers as needed. We have included an allowance for a phased replacement in Table 1, allowing for all diffusers to be replaced every approximately 15 years.

Continue to rebuild the compressors as needed. An allowance has been included in Table 1 every two years.

We recommend you also replace the air compressors at the end of the component's useful life. A replacement budget has been included in Table 1, based on actual cost for replacement in 2022.

Finally, we recommend you budget for eventual replacement of the air lines and concrete vault housing the air compressors. As replacement is anticipated beyond the report term, budgets have not been included in Table1.

2.7.9.4 Lake Pump and Piping

Description/History/Condition

Water is circulated from the lower lake to the upper lake by a submersible pump and buried piping. These components were not accessible for visual review.

The pump was reported to have been replaced in 2017 with the VFD having been replaced in 2021 for around $11,000. Information on the pump was not provided, and we assume the pump is 50Hp in capacity as we assume size and capacity is the same as the previous pump.

The pump is located within a buried wet well that is located to the south of the area where the creek from the upper lake meets the lower lake. We assume the well is constructed of poured concrete.

The buried piping is PVC and estimated to be 300mm in diameter. The outlet from the lower lake is near the location where the creek enters this lake. There are two inlets to the upper lake—one at the south side (toward the east end) and one at the west side. The approximate length of piping is 310m, based on the locations of the outlet and inlets, as discussed with the Community Manager at the time of the previous report.

No current issues were reported with the above components.

Lake Pump

Year of Installation	2017
Typical Life Cycle of Component	15
Component Condition	Good

Lake Pump VFD

Year of Installation	2021
Typical Life Cycle of Component	15
Component Condition	Good

Buried Piping

Year of Installation	2001
Typical Life Cycle of Component	50
Component Condition	Not visible

Concrete Well

Year of Installation	2001
Typical Life Cycle of Component	75
Component Condition	Not visible

Recommendations

We recommend you plan to replace the pump and VFD at the end of the components' useful life. Replacement budgets have been included in Table 1.

We assume that inlet screens are simple metal screens that can be replaced below the report capital threshold, as needed.

We also recommend you budget for eventual replacement of the buried piping and concrete wet well. As replacement is anticipated beyond the report term, budgets have not been included in Table1.

2.7.9.5 Hydraulic Fountain

Description/History/Condition

There is a hydraulic fountain located at the upper pond. The fountain runs off the pressure of the water, as provided by the circulation pump (discussed in 2.7.9.4). It was reported that the pump was replaced in 2022 at a reported cost of around $7,500.

Issues were not reported or observed.

Year of Installation	2020
Typical Life Cycle of Component	50
Component Condition	Good

Photo 2.7.9.5-1 Lake

Recommendations

We recommend you plan to replace the fountain assembly at the end of the component's service life. As this is beyond the report term a replacement budget has not been included in Table 1.

Periodic maintenance, including replacement of the nozzle are assumed to be completed as needed as part of regular maintenance.

2.7.9.6 Wood Docks

Description/History/Condition

The LAHPOA is responsible for two stationary and one floating wood dock at the Lower Lake. The private docks are not the responsibility of the LAHPOA.

The structure of the docks is dimensional lumber. The structure includes wood deck boards over wood beams, supported on metal framework. There is a poured concrete foundation/bearing block on land at each stationary dock. It was reported by the LAHPOA that most of the north dock was rebuilt (replaced deteriorating components, installed a new railing and new coating) in 2022 for a cost around $6,500, and the Lake House beach dock was resurfaced for around $2,500.

The docks are reported to be resurfaced every two years.

Year of Installation	2001
Typical Life Cycle of Component	20
Component Condition	Fair

Photo 2.7.9.6-1 Stationary dock at Lake House

Recommendations

The wood docks have exceeded a typical service life for this component; however, we anticipate the actual service life can continue to be extended as they are well maintained. Replacement budgets have been included in Table 1 accordingly. The condition of any concrete foundations/bearing blocks and stabilization anchors should be confirmed as part of the deck replacement.

We also recommend you continue to repair and resurface the docks regularly. A budget has been included in Table 1.

2.8 Equipment

2.8.1 Major Maintenance Equipment

2.8.1.1 Landscaping Equipment

Description/History/Condition

Major landscaping equipment (i.e., estimated to have a value of over $3,000) is as summarized below.

Item	Manufacturer	Year acquired	Approximate replacement cost	Typical service life	Condition
Side-by-Side	Kubota RTV X1100C	2021	$20,000	15 years	Good
Brush Attachment	Kubota V5266	2021	$4,000	15 years	Good
Blade Attachment	Kubota V5295A	2021	$3,000	15 years	Good
Snow blower attachment	Kubota V5269	2021	$5,000	15 years	Good
Drive movers (2)	Cub Cadet	~2016	$15,000 each	15 years	Good
Snowmobile	Polaris RMK EVO	2020	$10,000	15 years	Good
Snowmobile Tracksetter	Snow-Razor	2020	$3,000	15 years	Good
Vehicle Lift	Direct Lift	2021	$10,000	20 years	Good

Photo 2.8.1.1-1 Kubota side-by-side

Photo 2.8.1.1-2 Snowmobile

Photo 2.8.1.1-3 Club Cadet ride movers

Recommendations

We recommend you plan to replace the landscaping equipment at the end of the component's service life. Budgets have been included in Table 1. The LAHPOA board provided much of the information related to the above equipment, including estimated service lives and estimated replacement budgets.

Maintenance and repairs are assumed to be completed as needed as a maintenance cost.

2.8.2 Major Sporting Equipment

2.8.2.1 Aquatic Sporting Equipment

Description/History/Condition

Major aquatic sports equipment (i.e. estimated to have a value of over $3,000) is as summarized below:

Item	Manufacturer	Year acquired	Approximate replacement cost	Typical service life	Condition
Inflatable Stand-Up Paddleboards (11)	Unknown	2016	$700 each	~5 years	Fair
Canoes (3)	Clipper, 16'8"	2017	$1,200 each	~20 years	Good

Aluminum boat (1)	Tracker	2001	$3,500	~30 years	Fair
Outboard engine (for aluminum boat)	Yamaha	2001	$3,500	~25 years	Fair
Pedal Boats (6)	Unknown	2018	$2,300 each	~15 years	Good
Stand-up Paddle Boards (12 total, 8 not in use yet). *Note: The Association reports that the 8 boards not in service are in inventory to replace other boards if they get damaged.*	Unknown	2021	$700 each	~5 years	Good
Kayaks (4 singles, 2 doubles)	Pelican	2022	$750 each	~15 years	Good
8’ Row Boats (2). *Note: The Association reports that these will not be replaced.*	Walker Bay 8	Unknown, planning to replace in 2024	$2,500 each	~15 years	Fair
10’ Row Boats (2)	Pelican Scorpio	Unknown, planning to replace in 2024	$3,000 each	~15 years	Fair

Photo 2.8.2.1-1 Peddle boats

Photo 2.8.2.1-2 Aluminum boat and motor

Photo 2.8.2.1-3 Canoes and kayaks

Recommendations

We recommend you plan to replace the aquatic sporting equipment at the end of the components' service life. Budgets have been included in Table 1. The LAHPOA board provided much of the information related to the above equipment, including estimated service lives and estimated replacement budgets.

Replacement budgets for the 8' row boats have not been included in Table 1 as it was reported by LAHPOA that they do not plan to replace these boats.

Maintenance and repairs are assumed to be a maintenance cost.

2.9 Professional Services

2.9.1 Consulting Services

2.9.1.1 Lifecycle Assessments

Description/History/Condition

The LCA is a dynamic document, which will change over time as repairs/replacements are carried out, and as construction costs and interest/inflation rates change over time.

Recommendations

We recommend you plan to complete LCA updates periodically; every three to five years is recommended.

2.9.1.2 Miscellaneous Professional Reviews

Description/History/Condition

Periodic reviews of the building components and systems are prudent.

Recommendations

A periodic allowance has been included for professional evaluations, as may be required to help resolve issues or ahead of major capital projects (to help confirm timing, scope of work required, and more accurate budgets).

3. CLOSURE

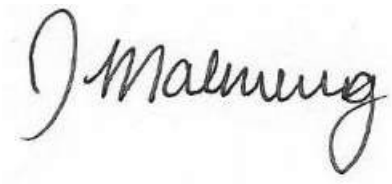
This LCA Report presents possible funding strategies that will provide adequate funding to cover anticipated major repairs and renewals expected in the next 25 years. It has been developed based on the information provided to us by the LAHPOA and our review of the site.

The LCA is a dynamic document that will change over time as repairs/renewals are carried out on the common elements and interest/inflation rates change. The repairs and renewals we have forecasted do not represent a fixed schedule for renewals; repairs or renewals 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 LCA Report are necessary to re-assess the needs of your complex. We recommend updates on a three to five year cycle.

Thank you for trusting Morrison Hershfield to complete this assessment. Please contact us at any time if you wish to update this study or to pursue the recommended investigations and/or capital projects. We would be pleased to provide a proposal to perform any of the additional investigations identified. We also provide full engineering design, tender, construction management and contract administration services for major repair or replacement projects required at your site, and welcome the opportunity to provide Engineering services to assist you with these undertakings.

If you have any questions, please contact the undersigned.

Yours truly,
MORRISON HERSHFIELD LIMITED



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APPENDIX A – TABLE 1 – EXPENDITURES TABLE

Table 1 - Expenditures Table

Lake at Heritage Pointe Resident's Association - October 26, 2023

Item No.	System	Recommendations	Typical Life Cycle (years)	Present Age (years)	Adjustment To Life Expectancy (years)	Time To *Next* Expenditure (years)	Time to *Subsequent* Expenditure (years)	Years Over Which Expenditure is Phased	Expenditure Budget	Priority
2.1.2.3	Structure	Replace deck/stair/ramp traffic surface and waterproofing membrane	20	4	0	16	20	1	$34,000	3
2.2.1.1a	Building Envelope	Re-paint the exterior EIFS, engineered wood cladding and trim, exterior doors, and corbels at Lake House and garage	10	4	2	8	10	1	$6,000	3
2.2.1.1.b	Building Envelope	Wall cladding repair allowance at Lake House and garage	10	22	2	2	10	1	$2,000	3
2.2.1.2a	Building Envelope	Replace wood lap siding and decorative trim at cladding and windows at Lake House	30	22	0	8	30	1	$36,000	3
2.2.1.2b	Building Envelope	Replace wood lap siding and decorative trim at cladding and windows at garage	30	6	0	24	30	1	$3,000	3
2.2.2.1	Building Envelope	Replace windows at Lake House	30	22	10	18	30	1	$68,000	3
2.2.2.2	Building Envelope	Replace exterior doors at Lake House	30	22	0	8	30	1	$13,000	3
2.2.2.4	Building Envelope	Replace overhead door at garage	30	6	0	24	30	1	$11,000	3
2.2.3.1a	Building Envelope	Replace asphalt roof shingles at Lake House	20	3	0	17	20	1	$38,000	3
2.2.3.1b	Building Envelope	Replace asphalt roof shingles at Garage	20	6	0	14	20	1	$14,000	3
2.2.3.2	Building Envelope	Replace eavestroughs and downspouts at Lake House	20	3	0	17	20	1	$4,000	3
2.2.3.3	Building Envelope	Replace fascia at Lake House	40	22	-1	17	40	1	$3,000	3
2.2.3.4	Building Envelope	Replace skylights in Garage	20	6	0	14	20	1	$6,000	3
2.3.1.1	Interiors	Replace rubber tiles at the Lake House	25	22	0	3	25	1	$13,000	3
2.3.1.2	Interiors	Replace ceramic floor and wall tiles at lower level of Lake House	40	22	0	18	40	1	$23,000	3
2.3.1.3	Interiors	Replace resilient floor on main floor in the Lake House	25	22	0	3	25	1	$13,000	3
2.3.1.4	Interiors	Repaint walls and ceilings in Lake House	15	4	0	11	15	1	$8,000	3
2.3.2.1a	Interiors	Replace service desk in Lake House	15	4	0	11	15	1	$10,000	3
2.3.2.1b	Interiors	Replace kitchen cabinets and counters in Lake House	20	4	0	16	20	1	$14,000	3
2.3.2.1c	Interiors	Replace casework and counters in washrooms at Lake House	20	22	5	5	20	1	$10,000	3
2.3.2.1d	Interiors	Replace wood millwork and shelving in main downstairs room, Lake House	20	22	5	5	20	1	$23,000	3
2.3.2.1e	Interiors	Replace metal washroom partitions in Lake House	30	22	-3	5	30	1	$7,000	3
2.4.2.1	Mechanical Systems	Replace furnace serving the Lake House	25	22	0	3	25	1	$12,000	3
2.4.5.1	Mechanical Systems	Replace the unit heaters at the garage	20	6	0	14	20	1	$4,000	3
2.4.5.2	Mechanical Systems	Replace natural gas fireplace at Lake House	25	22	0	3	25	1	$10,000	3
2.4.6.3	Mechanical Systems	Replace domestic hot water tank heaters for Lake House	12	2	0	10	12	1	$19,000	3
2.4.6.4	Mechanical Systems	Replace washroom plumbing fixtures	20	22	5	5	20	1	$33,000	3
2.5.2.1	Electrical Systems	Replace branch circuit panel at Lake House	45	22	0	23	45	1	$7,000	3
2.5.2.2a	Electrical Systems	Replace main fused disconnect switch and splitter box serving lake equipment	35	22	0	13	35	1	$7,000	3
2.5.2.2b	Electrical Systems	Replace transformer at end of service life	25	22	0	3	25	1	$6,000	3
2.5.2.2c	Electrical Systems	Replace surge protection device at end of service life	15	6	0	9	15	1	$4,000	3
2.5.2.2d	Electrical Systems	Replace the irrigation system VFD	15	1	0	14	15	1	$11,000	3
2.5.3.1a	Electrical Systems	Replace interior light fixtures at Lake House	20	22	5	5	20	1	$11,000	3
2.5.3.1b	Electrical Systems	Replace interior ceiling-mounted linear light fixtures at Lake House	20	7	0	13	20	1	$4,000	3
2.5.3.2	Electrical Systems	Replace interior light fixtures at garage	20	6	0	14	20	1	$3,000	3
2.5.3.3	Electrical Systems	Replace exterior soffit and wall-mounted light fixtures at Lake House	20	22	5	5	20	1	$13,000	3
2.5.3.5	Electrical Systems	Replace exterior pole-mounted light fixtures	20	22	5	5	20	1	$9,000	3
2.5.4.2	Electrical Systems	Replace security camera system	15	6	0	9	15	1	$22,000	3
2.5.4.3	Electrical Systems	Replace intrusion monitoring system	15	6	0	9	15	1	$4,000	3
2.5.4.4	Electrical Systems	Replace access control system for gates	15	4	0	11	15	1	$65,000	3
2.7.1.1	Site Improvements	Asphalt paving repair allowance (Parking Lot)	5	4	0	1	5	1	$3,000	3
2.7.1.2a	Site Improvements	Replace the asphalt paving at walkways at "Heritage Isle"	30	22	5	13	30	1	$411,000	3
2.7.1.2b	Site Improvements	Replace the asphalt paving at walkways near the Lake House	30	22	10	18	30	1	$622,000	3

Table 1 - Expenditures Table

Lake at Heritage Pointe Resident's Association - October 26, 2023

Item No.	System	Recommendations	Typical Life Cycle (years)	Present Age (years)	Adjustment To Life Expectancy (years)	Time To *Next* Expenditure (years)	Time to *Subsequent* Expenditure (years)	Years Over Which Expenditure is Phased	Expenditure Budget	Priority
2.7.1.2c	Site Improvements	Asphalt paving repair allowance (community walkways)	5	3	0	2	5	1	$5,000	3
2.7.1.3a	Site Improvements	Replace asphalt paving at sports court	30	22	0	8	30	1	$46,000	3
2.7.1.3b	Site Improvements	Replace modular sport traffic surface at sports court	20	22	8	8	20	1	$25,000	3
2.7.1.4	Site Improvements	Repair allowance for concrete paving (at driveway and north and south sides of Lake House)	10	22	2	2	10	1	$4,000	3
2.7.1.5	Site Improvements	Reset concrete unit pavers	25	22	0	3	25	1	$15,000	3
2.7.2.1	Site Improvements	Replace exterior guards and handrails at Lake House raised deck	40	22	-2	16	40	1	$44,000	3
2.3.7.1a	Site Improvements	Replace billboard sign	25	5	0	20	25	1	$6,000	3
2.3.7.1b	Site Improvements	Replace "Community and Events" signs	20	5	0	15	20	1	$9,000	3
2.3.7.1c	Site Improvements	Replace metal panel signs	30	22	0	8	30	1	$9,000	3
2.7.4.1	Site Improvements	Replace chain-link fencing at sports court	40	22	0	18	40	1	$12,000	3
2.7.4.2	Site Improvements	Replace metal picket fencing	40	17	0	23	40	1	$524,000	3
2.7.5.1	Site Improvements	Repair the retaining walls	10	22	2	2	10	1	$5,000	2
2.7.6.1	Site Improvements	Allowance for replacement of mature trees	1	22	5	5	1	1	$3,000	3
2.7.6.2	Site Improvements	Refill beach sand due to erosion	10	4	0	6	10	1	$12,000	3
2.7.7.1	Site Improvements	Repair/replacement allowance for irrigation system	1	22	1	1	1	1	$3,000	3
2.7.8.1	Site Improvements	Allowance to replace site furniture	5	22	5	5	5	1	$5,000	3
2.7.8.2a	Site Improvements	Replace the playground equipment and surfacing at Heritage Isle (1 playground)	25	22	-3	0	25	1	$315,000	3
2.7.8.2b	Site Improvements	Relocated playground equipment	99	22	-77	0	99	1	$29,000	3
2.7.8.2c	Site Improvements	Replace the playground equipment and surfacing at Lake House and north end of lake (2 playgrounds)	25	22	7	10	25	1	$210,000	3
2.7.8.3a	Site Improvements	Replace metal waste/recycling bins	40	17	0	23	40	1	$42,000	3
2.7.8.3b	Site Improvements	Replace composite waste/recycling/compost bins	25	4	0	21	25	1	$15,000	3
2.7.8.3c	Site Improvements	Replace plastic waste, recycling, and compost bins (for homes throughout the site)	5	1	0	4	5	1	$8,000	3
2.7.8.4a	Site Improvements	Replace the gas fire pit burner	10	22	2	2	10	1	$3,000	3
2.7.8.4b	Site Improvements	Replace the gas fire pit	30	22	0	8	30	1	$3,000	3
2.7.9.3a	Site Improvements	Replace some aeration diffusers (20) for lake	3	1	0	2	3	1	$5,000	3
2.7.9.3b	Site Improvements	Rebuild air compressors serving aeration diffusers (9 compressors)	2	1	0	1	2	1	$4,000	3
2.7.9.3c	Site Improvements	Replace air compressors serving aeration diffusers (8 compressors)	15	6	0	9	15	1	$10,000	3
2.7.9.3d	Site Improvements	Replace air compressors serving aeration diffusers (1 compressor)	15	1	0	14	15	1	$2,000	3
2.7.9.4a	Site Improvements	Replace lake pump	15	6	0	9	15	1	$27,000	3
2.7.9.4b	Site Improvements	Replace the lake pump VFD	15	2	0	13	15	1	$12,000	3
2.7.9.6a	Site Improvements	Replace the floating and stationary dock at the Lake House	20	22	5	5	20	1	$39,000	3
2.7.9.6b	Site Improvements	Replace the stationary dock at the north end of the lake	20	22	15	15	20	1	$9,000	3
2.7.9.6c	Site Improvements	Resurface the docks, including allowance for local repairs	2	1	0	1	2	1	$4,000	3
2.8.1.1.a	Equipment	Replace Kubota side-by-side	15	2	1	14	15	1	$21,000	3
2.8.1.1.b	Equipment	Replace Kubota brush attachment	15	2	5	18	15	1	$5,000	3
2.8.1.1.c	Equipment	Replace Kubota blade attachment	15	2	5	18	15	1	$4,000	3
2.8.1.1.d	Equipment	Replace Kubota snow blower attachment	15	2	5	18	15	1	$6,000	3
2.8.1.1.e	Equipment	Replace (two) Club Cadet drive mowers	15	7	0	8	15	1	$32,000	3
2.8.1.1.f	Equipment	Replace Polaris snowmobile	15	3	0	12	15	1	$11,000	3
2.8.1.1.g	Equipment	Replace Snow-Razor tracksetter	15	3	0	12	15	1	$4,000	3
2.8.1.1.h	Equipment	Replace vechicle lift	20	2	0	18	20	1	$11,000	3
2.8.2.1a	Equipment	Replace (11) inflatable stand-up paddleboards	5	7	1	1	5	1	$9,000	3
2.8.2.1b	Equipment	Replace (3) canoes	20	6	0	14	20	1	$4,000	3
2.8.2.1c	Equipment	Replace aluminum boat	30	22	0	8	30	1	$5,000	3
2.8.2.1d	Equipment	Replace aluminum boat motor	25	22	0	3	25	1	$5,000	3
2.8.2.1e	Equipment	Replace petal boats (6)	15	5	0	10	15	1	$15,000	3

Table 1 - Expenditures Table

Lake at Heritage Pointe Resident's Association - October 26, 2023

Item No.	System	Recommendations	Typical Life Cycle (years)	Present Age (years)	Adjustment To Life Expectancy (years)	Time To *Next* Expenditure (years)	Time to *Subsequent* Expenditure (years)	Years Over Which Expenditure is Phased	Expenditure Budget	Priority
2.8.2.1f	Equipment	Replace stand-up paddle boards (4 boards currently in use)	5	2	0	3	5	1	$3,000	3
2.8.2.1g	Equipment	Replace kayaks (6)	15	1	0	14	15	1	$5,000	3
2.8.2.1h	Equipment	Replace 10' row boats (2)	15	14	0	1	15	1	$7,000	3
2.9.1.1	Professional Services	Update lifecycle assessment	5	0	0	5	5	1	$14,000	3
2.9.1.2	Professional Services	Allowance for consultant evaluations	5	99	3	3	5	1	$5,000	3

APPENDIX B – TABLE 2 and Graph 1 –25-YEAR CASH FLOW PLAN

Table 2 - Cash Flow Plan (25 year term)
Lake at Heritage Pointe Resident's Association - October 26, 2023

Inflation Rate	2.0%
Interest Rate	4.0%
Starting Fund	429,281
Periods per year	12
Starting Annual Contribution	135,803

Starting Balance	429,281	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133
Total Expense	344,000	30,600	28,091	98,692	11,907	202,047	33,785	21,825	227,302	106,363	327,909	141,745	50,730	589,885	117,434	68,639	177,089	96,617	1,101,178	32,050	53,494	62,142	68,023	996,600	152,802
Interest	16,844	17,676	22,805	26,890	31,575	34,498	37,219	43,774	46,845	48,473	48,284	47,510	52,382	48,623	43,519	48,778	53,198	57,384	43,406	30,314	37,808	45,160	52,679	41,975	29,318
Contribution	135,803	138,519	141,289	144,115	146,998	149,937	152,936	155,995	159,115	162,297	165,543	168,854	172,231	175,676	179,189	182,773	186,428	190,157	193,960	197,839	201,796	205,832	209,949	214,148	218,431
Lump Sum Contribution	150,000																								
Ending Balance	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133	795,079

Item		Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
			2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
2.1.2.3	Replace deck/stair/ramp traffic surface and waterproofing membrane																		46,675								
2.2.1.1a	Re-paint the exterior EIFS, engineered wood cladding and trim, exterior doors, and corbels at Lake House and garage										7,030										8,569						
2.2.1.1.b	Wall cladding repair allowance at Lake House and garage				2,081										2,536										3,092		
2.2.1.2a	Replace wood lap siding and decorative trim at cladding and windows at Lake House										42,180																
2.2.1.2b	Replace wood lap siding and decorative trim at cladding and windows at garage																										4,825
2.2.2.1	Replace windows at Lake House																				97,121						
2.2.2.2	Replace exterior doors at Lake House										15,232																
2.2.2.4	Replace overhead door at garage																										17,693
2.2.3.1a	Replace asphalt roof shingles at Lake House																			53,209							
2.2.3.1b	Replace asphalt roof shingles at Garage															18,473											
2.2.3.2	Replace eavestroughs and downspouts at Lake House																			5,601							
2.2.3.3	Replace fascia at Lake House																			4,201							
2.2.3.4	Replace skylights in Garage															7,917											
2.3.1.1	Replace rubber tiles at the Lake House			13,796																							
2.3.1.2	Replace ceramic floor and wall tiles at lower level of Lake House																				32,850						
2.3.1.3	Replace resilient floor on main floor in the Lake House			13,796																							
2.3.1.4	Repaint walls and ceilings in Lake House													9,947													
2.3.2.1a	Replace service desk in Lake House													12,434													
2.3.2.1b	Replace kitchen cabinets and counters in Lake House																		19,219								
2.3.2.1c	Replace casework and counters in washrooms at Lake House					11,041																					
2.3.2.1d	Replace wood millwork and shelving in main downstairs room, Lake House					25,394																					
2.3.2.1e	Replace metal washroom partitions in Lake House					7,729																					
2.4.2.1	Replace furnace serving the Lake House			12,734																							
2.4.5.1	Replace the unit heaters at the garage															5,278											
2.4.5.2	Replace natural gas fireplace at Lake House			10,612																							
2.4.6.3	Replace domestic hot water tank heaters for Lake House													23,161											29,374		

Table 2 - Cash Flow Plan (25 year term)
Lake at Heritage Pointe Resident's Association - October 26, 2023

Inflation Rate	2.0%
Interest Rate	4.0%
Starting Fund	429,281
Periods per year	12
Starting Annual Contribution	135,803

	Starting Balance	429,281	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133
	Total Expense	344,000	30,600	28,091	98,692	11,907	202,047	33,785	21,825	227,302	106,363	327,909	141,745	50,730	589,885	117,434	68,639	177,089	96,617	1,101,178	32,050	53,494	62,142	68,023	996,600	152,802
	Interest	16,844	17,676	22,805	26,890	31,575	34,498	37,219	43,774	46,845	48,473	48,284	47,510	52,382	48,623	43,519	48,778	53,198	57,384	43,406	30,314	37,808	45,160	52,679	41,975	29,318
	Contribution	135,803	138,519	141,289	144,115	146,998	149,937	152,936	155,995	159,115	162,297	165,543	168,854	172,231	175,676	179,189	182,773	186,428	190,157	193,960	197,839	201,796	205,832	209,949	214,148	218,431
	Lump Sum Contribution	150,000																								
	Ending Balance	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133	795,079
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Item		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
2.4.6.4	Replace washroom plumbing fixtures						36,435																			
2.5.2.1	Replace branch circuit panel at Lake House																								11,038	
2.5.2.2a	Replace main fused disconnect switch and splitter box serving lake equipment														9,055											
2.5.2.2b	Replace transformer at end of service life				6,367																					
2.5.2.2c	Replace surge protection device at end of service life										4,780															6,434
2.5.2.2d	Replace the irrigation system VFD															14,514										
2.5.3.1a	Replace interior light fixtures at Lake House						12,145																			
2.5.3.1b	Replace interior ceiling-mounted linear light fixtures at Lake House														5,174											
2.5.3.2	Replace interior light fixtures at garage															3,958										
2.5.3.3	Replace exterior soffit and wall-mounted light fixtures at Lake House						14,353																			
2.5.3.5	Replace exterior pole-mounted light fixtures						9,937																			
2.5.4.2	Replace security camera system										26,292															35,386
2.5.4.3	Replace intrusion monitoring system										4,780															6,434
2.5.4.4	Replace access control system for gates												80,819													
2.7.1.1	Asphalt paving repair allowance (Parking Lot)	3,060						3,378					3,730				4,118					4,547				
2.7.1.2a	Replace the asphalt paving at walkways at "Heritage Isle"														531,672											
2.7.1.2b	Replace the asphalt paving at walkways near the Lake House																			888,369						
2.7.1.2c	Asphalt paving repair allowance (community walkways)		5,202					5,743					6,341					7,001						7,730		
2.7.1.3a	Replace asphalt paving at sports court									53,896																
2.7.1.3b	Replace modular sport traffic surface at sports court									29,291																
2.7.1.4	Repair allowance for concrete paving (at driveway and north and south sides of Lake House)		4,162										5,073											6,184		
2.7.1.5	Reset concrete unit pavers			15,918																						
2.7.2.1	Replace exterior guards and handrails at Lake House raised deck																	60,403								
2.3.7.1a	Replace billboard sign																					8,916				
2.3.7.1b	Replace "Community and Events" signs																12,113									
2.3.7.1c	Replace metal panel signs									10,545																
2.7.4.1	Replace chain-link fencing at sports court																			17,139						

Table 2 - Cash Flow Plan (25 year term)
Lake at Heritage Pointe Resident's Association - October 26, 2023

Inflation Rate	2.0%
Interest Rate	4.0%
Starting Fund	429,281
Periods per year	12
Starting Annual Contribution	135,803

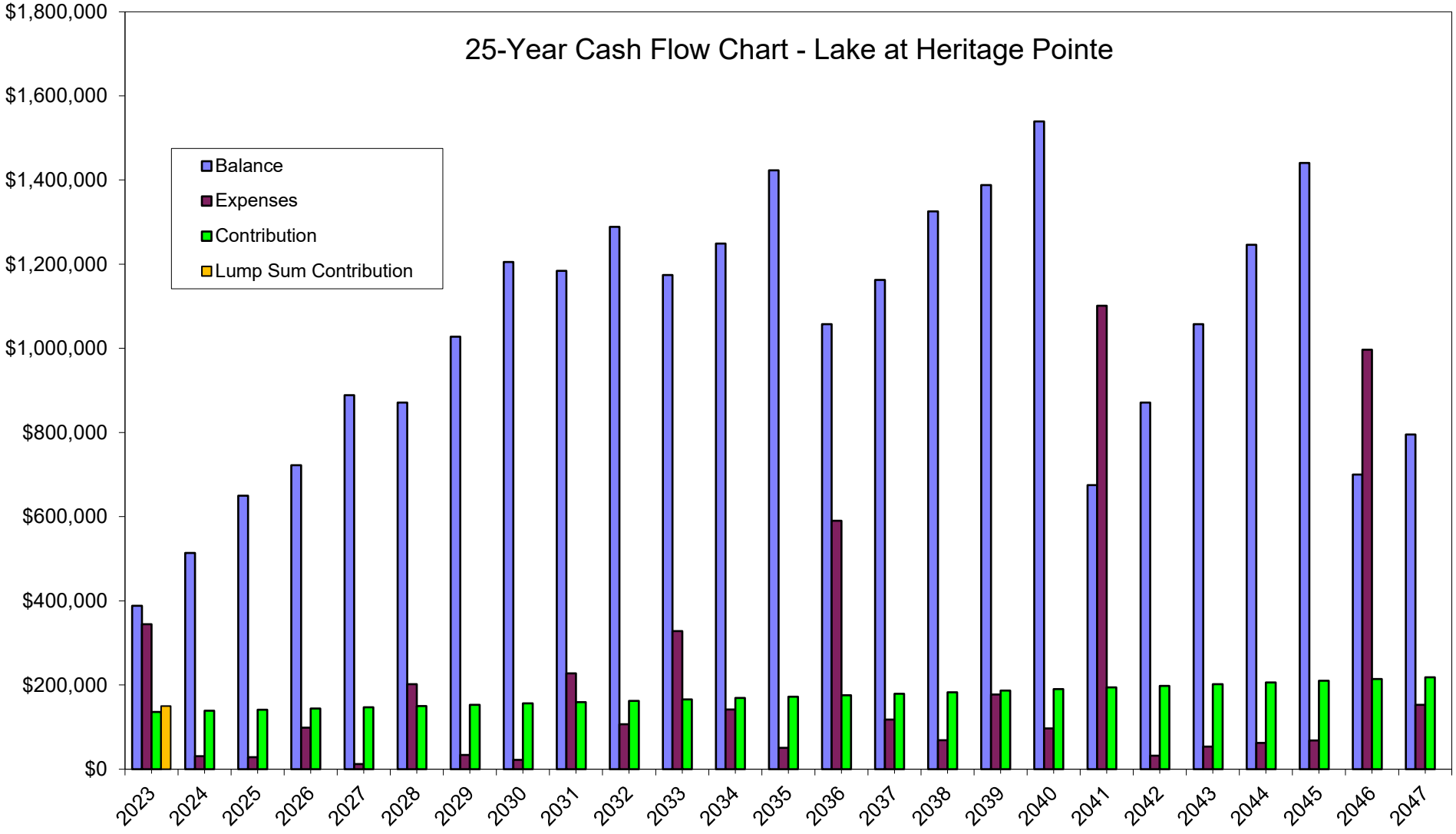
	Starting Balance	429,281	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133
	Total Expense	344,000	30,600	28,091	98,692	11,907	202,047	33,785	21,825	227,302	106,363	327,909	141,745	50,730	589,885	117,434	68,639	177,089	96,617	1,101,178	32,050	53,494	62,142	68,023	996,600	152,802
	Interest	16,844	17,676	22,805	26,890	31,575	34,498	37,219	43,774	46,845	48,473	48,284	47,510	52,382	48,623	43,519	48,778	53,198	57,384	43,406	30,314	37,808	45,160	52,679	41,975	29,318
	Contribution	135,803	138,519	141,289	144,115	146,998	149,937	152,936	155,995	159,115	162,297	165,543	168,854	172,231	175,676	179,189	182,773	186,428	190,157	193,960	197,839	201,796	205,832	209,949	214,148	218,431
	Lump Sum Contribution	150,000																								
	Ending Balance	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133	795,079
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Item		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
2.7.4.2	Replace metal picket fencing																								826,295	
2.7.5.1	Repair the retaining walls			5,202										6,341										7,730		
2.7.6.1	Allowance for replacement of mature trees						3,312	3,378	3,446	3,515	3,585	3,657	3,730	3,805	3,881	3,958	4,038	4,118	4,201	4,285	4,370	4,458	4,547	4,638	4,731	4,825
2.7.6.2	Refill beach sand due to erosion							13,514										16,473								
2.7.7.1	Repair/replacement allowance for irrigation system		3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657	3,730	3,805	3,881	3,958	4,038	4,118	4,201	4,285	4,370	4,458	4,547	4,638	4,731	4,825
2.7.8.1	Allowance to replace site furniture						5,520					6,095					6,729					7,430				
2.7.8.2a	Replace the playground equipment and surfacing at Heritage Isle (1 playground)	315,000																								
2.7.8.2b	Relocated playground equipment	29,000																								
2.7.8.2c	Replace the playground equipment and surfacing at Lake House and north end of lake (2 playgrounds)											255,989														
2.7.8.3a	Replace metal waste/recycling bins																								66,230	
2.7.8.3b	Replace composite waste/recycling/compost bins																						22,735			
2.7.8.3c	Replace plastic waste, recycling, and compost bins (for homes throughout the site)					8,659					9,561					10,556					11,654					12,867
2.7.8.4a	Replace the gas fire pit burner			3,121										3,805										4,638		
2.7.8.4b	Replace the gas fire pit									3,515																
2.7.9.3a	Replace some aeration diffusers (20) for lake			5,202			5,520			5,858		6,217				6,597			7,001			7,430			7,884	
2.7.9.3b	Rebuild air compressors serving aeration diffusers (9 compressors)		4,080		4,245		4,416		4,595		4,780		4,973		5,174		5,383		5,601		5,827		6,063		6,308	
2.7.9.3c	Replace air compressors serving aeration diffusers (8 compressors)										11,951															16,084
2.7.9.3d	Replace air compressors serving aeration diffusers (1 compressor)															2,639										
2.7.9.4a	Replace lake pump										32,267															43,428
2.7.9.4b	Replace the lake pump VFD														15,523											
2.7.9.6a	Replace the floating and stationary dock at the Lake House						43,059																			
2.7.9.6b	Replace the stationary dock at the north end of the lake																12,113									
2.7.9.6c	Resurface the docks, including allowance for local repairs		4,080		4,245		4,416		4,595		4,780		4,973		5,174		5,383		5,601		5,827		6,063		6,308	
2.8.1.1.a	Replace Kubota side-by-side															27,709										
2.8.1.1.b	Replace Kubota brush attachment																			7,141						
2.8.1.1.c	Replace Kubota blade attachment																			5,713						
2.8.1.1.d	Replace Kubota snow blower attachment																			8,569						

Table 2 - Cash Flow Plan (25 year term)
Lake at Heritage Pointe Resident's Association - October 26, 2023

																								Inflation Rate	2.0%	
																								Interest Rate	4.0%	
																								Starting Fund	429,281	
																								Periods per year	12	
																								Starting Annual Contribution	135,803	
	Starting Balance	429,281	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133	
	Total Expense	344,000	30,600	28,091	98,692	11,907	202,047	33,785	21,825	227,302	106,363	327,909	141,745	50,730	589,885	117,434	68,639	177,089	96,617	1,101,178	32,050	53,494	62,142	68,023	996,600	152,802	
	Interest	16,844	17,676	22,805	26,890	31,575	34,498	37,219	43,774	46,845	48,473	48,284	47,510	52,382	48,623	43,519	48,778	53,198	57,384	43,406	30,314	37,808	45,160	52,679	41,975	29,318	
	Contribution	135,803	138,519	141,289	144,115	146,998	149,937	152,936	155,995	159,115	162,297	165,543	168,854	172,231	175,676	179,189	182,773	186,428	190,157	193,960	197,839	201,796	205,832	209,949	214,148	218,431	
	Lump Sum Contribution	150,000																									
	Ending Balance	387,928	513,523	649,526	721,838	888,505	870,893	1,027,263	1,205,207	1,183,865	1,288,272	1,174,189	1,248,808	1,422,692	1,057,106	1,162,381	1,325,293	1,387,830	1,538,755	674,943	871,046	1,057,156	1,246,006	1,440,610	700,133	795,079	
	Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Item		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	
2.8.1.1.e	Replace (two) Club Cadet drive mowers									37,493															50,461		
2.8.1.1.f	Replace Polaris snowmobile													13,951													
2.8.1.1.g	Replace Snow-Razor tracksetter													5,073													
2.8.1.1.h	Replace vechicle lift																			15,711							
2.8.2.1a	Replace (11) inflatable stand-up paddleboards	9,180				10,135						11,190						12,355					13,641				
2.8.2.1b	Replace (3) canoes															5,278											
2.8.2.1c	Replace aluminum boat									5,858																	
2.8.2.1d	Replace aluminum boat motor			5,306																							
2.8.2.1e	Replace petal boats (6)											18,285															
2.8.2.1f	Replace stand-up paddle boards (4 boards currently in use)			3,184						3,515					3,881					4,285					4,731	
2.8.2.1g	Replace kayaks (6)															6,597											
2.8.2.1h	Replace 10' row boats (2)	7,140																9,609									
2.9.1.1	Update lifecycle assessment					15,457						17,066					18,842						20,803				
2.9.1.2	Allowance for consultant evaluations			5,306						5,858					6,468					7,141					7,884	

Graph 1

At Inflation = 2.0% and Interest = 4.0%



Estimated annual values for contribution, forecast, expenditures, and balance can be found in Table 2

APPENDIX C - STUDY EXCLUSIONS, LIMITATIONS AND ASSUMPTIONS

EXCLUSIONS

Our scope of work specifically excluded:

- Material sampling and testing
- Seismic review
- Fire and life safety code review
- Accessibility code review
- Compliance review of Municipal Property Standards and By-laws
- Environmental assessment
- Verifying operations of systems
- Inspection of concealed elements, intrusive openings or opening of system components for internal inspection
- Engineering design/analysis
- Fixtures, appliances, loose furnishings, or equipment not listed in the components list above
- Detailed discussion of existing systems and detailed breakdown of repair tasks and costs (components will be discussed at high level and cost estimates will be order of magnitude estimates, in accordance with industry standards)
- A detailed photographic record of the building and components reviewed
- Accessing areas that are unsafe to the reviewer(s), such as confined spaces, sloped roofs, roof areas that appear unsafe etc.

LIMITATIONS AND ASSUMPTIONS

This BCA report provides an assessment of the current conditions at the reviewed facility based on the specific Scope of Service and to support the specific objectives identified previously.

This report was prepared for the exclusive use of our Client, and may not be reproduced in whole or in part, or used or relied upon by any other party. MH accepts no responsibility for any damages suffered by any third party as a result of decisions made or actions taken based on this report.

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.

Though the visual review and interviews with the building staff, we have attempted to identify symptoms of component deterioration or distress that affect the remaining life of the systems. Given that our review has been made on a random sampling basis and that building elements were generally not subjected to their full design loads or operating at full capacity, this type of review is very limited in identifying hidden or latent defects.

INFORMATION USED

The assessment is based, in part, on information provided by others. Unless specifically noted, we have assumed that this information was correct and have relied on it in developing our conclusions.

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

VISUAL REVIEW

Conclusions are based on a visual walk-through review of a sampling of building elements for the purpose of identifying major deficiencies within the building, building elements and site. Observations were made only of those areas that were readily accessible during our review. The general findings reported may not be extended to portions of the facility that were unavailable for direct observation at the time of the Morrison Hershfield visit.

Detailed discussions of the existing elements and required repairs / replacements, and reporting on minor repairs or preventive maintenance requirements, were beyond the scope of this assessment.

OPINIONS OF PROBABLE COST

Opinions of probable cost are provided only as an indication of possible cost of remedial work. They are based on costs of past repairs at the building as reported by the maintenance staff, recent costing data such as “Means Repair and Remodeling Cost Data - Commercial/ Residential” and “Hanscomb’s Yardsticks for Costing”, or our professional judgment.

More precise cost estimates would require more detailed investigation to define the scope of work.

All costs are identified in current fiscal year Canadian dollars, and include for consulting fees and contingencies (where applicable) and GST has been excluded, as requested. For consulting fees, we typically apply a budget allowance of 10% to 20% of the costs identified.

All opinions of probable cost assume that regular annual maintenance and repairs will be performed to all elements at the facility.

APPENDIX D - FINANCIAL TERMS, ASSUMPTIONS AND CALCULATIONS

Inflation

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 to 3 per cent, with the Bank's monetary policy aimed at keeping inflation at the 2 per cent target midpoint. This policy has continued to be renewed since implementation in 1991, and currently extends to December 31, 2026. Inflation of building and site construction work and materials are a small subset of this overall average and may or may not closely reflect it, which is why we default to a recommended 3% conservative long term inflation rate. As requested by the Association, we have accounted for a 2% inflation rate for this study.

The total annual estimated expenditures are shown in the **Condition Assessment and Capital Plan table** in current fiscal year dollars. The expenditures shown in the **Funding Scenario** are inflated annually by the inflation percentage shown.

Interest

We have applied an interest rate of 4%, as requested by the Association.

The interest earned on the Reserve Fund for each year is based on a **Mid-Year Interest Calculation i**n accordance with generally accepted accounting practice. Over the 25-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:

$$Interest = InterestRate \times (StartingBalance - \frac{Expenses}{2} + \frac{AnnualContribution}{2})$$

Starting Balance

MH requested information regarding the Reserve Fund balance at the start of the current fiscal year. Where appropriate documents are provided, we confirm the opening balance against the financial statements provided. We assume Board of Directors confirms the starting balance is correct to the best of their knowledge prior to authorizing us to finalize the report.

Contributions

MH requested information regarding the present annual contribution to the Reserve Fund. We assume the Board of Directors confirms the current annual contribution is correct (or near-correct, understanding that there may be a margin of error) to the best of their knowledge prior to authorizing us to finalize the report.

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. Sample annual contributions that would result in an adequate Reserve Fund are indicated in the attached **Funding Scenario**.

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).

Minimum Reserve Fund Balance

The minimum balance is the lowest balance that the reserve fund is allowed to go down to within the **Funding Scenario**. It typically falls within, or just beyond a year in which numerous and/or very large expenditures are anticipated (the “critical year”). The intent of the minimum balance is to act as a contingency or “buffer” in such years, given the “high-level” nature of estimating in reserve fund studies. The contingency is also for unforeseen issues, such as breakage of buried piping or damage to the lake system liners.

We typically recommend carrying a minimum balance that is equal to around 10 to 20% of the expenditures in the critical year. The minimum balance in the **Funding Scenario** follow this recommendation, except where the Board requests otherwise. If the Board requests a minimum balance that is higher than 20% of the critical year, we will carry the higher amount provided it is reasonable.

APPENDIX E – GLOSSARY OF TERMS

The following is a list of terms and abbreviations which may have been used in the report produced for the noted project. All of the terms and abbreviations used are standard within the industry, but the glossary may be of some aid for those not familiar with construction terms.

Air Barrier:	An assembly of one or more materials, including joints, that prevents the continuous passage of air, and whatever it contains, between different environments under a difference of pressure.
Ampere (A):	The unit of measurement of electric current. The greater the amperage, the larger the size of the conductor required to carry the current.
Annunciator Panel:	A lighted panel that provides information about the location of an activated fire alarm in a building, typically located near the main entrance of a building.
Backflow Preventer:	A device used in plumbing systems to prevent potentially contaminated water from moving back into the clean water supply.
Bitumen:	The term covering numerous mixtures of hydrocarbons such as those found in asphalt and mineral pitch.
Built-Up Roof:	Waterproof membrane constructed of multiple felt layers mopped down with bitumen.
Caulking:	Material with widely different chemical compositions used to make a seam or joint air-tight or watertight.
CCTV:	Closed Circuit Television, a video camera system that transmits video images to specific monitors as opposed to broadcasting the signal over air waves. Typically used in security applications.
CFM	Cubic feet per minute, the common unit of air flow measurement.
Cladding:	Any material that covers an interior or exterior wall.
Control Joint:	Also Movement Joint, a continuous joint in a structure or element, used to regulate the amount of cracking and separation resulting from relative movement.
Condenser:	A device used to remove heat from refrigerating equipment by circulating hot refrigerant gas through coils in the unit and blowing outdoor air across the coils with a fan. Cooling the gas causes it to condense back into a liquid.
Cooling Tower:	A device used to cool condenser water in a chiller by evaporation. Condenser water is sprayed into the top of the cooling tower. The droplets fall through the tower as air is blown upward through the tower, partly evaporating the droplets, which cools the remaining water. Water leaving the cooling tower is typically 10 degrees cooler than when it entered.
Delamination:	A separation along a plane parallel to a surface.
Direct expansion:	A refrigeration method in which an air cooling coil contains refrigerant rather than a secondary coolant glycol or brine.

Drip Edge:	A projection detailed to direct water run-off away from the wall or window face below.
Efflorescence:	Deposits of salt, usually white, due to the migration of salt-laden (in solution) water through concrete or masonry units.
EPDM:	Synthetic rubber membrane usually applied in single-ply applications.
Exhaust Air:	Air mechanically removed from a building to reduce the concentration of moisture, cooking odours and other contaminants from the building.
Fan Coil Unit:	A device consisting of a fan and water coil that can heat an area by circulating hot water through the coil and cool by circulating chilled water through the coil.
Fire Detector:	A fire alarm system component which senses the presence of a possible fire through the presence of smoke particles or heat (i.e. smoke detector, heat detector).
Flashing:	A thin waterproof sheet material, flexible or rigid, used to direct water out of, or away from, the structure.
Glazing:	A generic term for the transparent, or sometimes translucent, material in a window or door. Often, but not always, glass.
Glazing Bead:	A molding or stop around the inside of a frame to hold the glass in place.
Glazing Unit:	That part of a window which includes more than one glazing layer sealed around the outside edge to prevent air or moisture from entering the airspace and eliminating dirt and condensation between glazing's.
Heat Exchanger:	A device used to heat a fluid or gas with another fluid or gas without the two streams coming in direct contact with each other and mixing. For example a radiator heats air using hot water. The air and water circulate through the heat exchanger (the radiator) but do are prevented from coming in contact with each other by the radiator.
Heat Pump:	A mechanical device designed to provide both winter heating and summer cooling.
HID:	High Intensity Discharge, a generic term for mercury, vapour, metal halide and high pressure sodium light fixtures. Light in these fixtures is produces by an electric arc between two electrodes.
House Panelboard:	A panelboard which supplies power to common area loads
Hydronic Heating:	A means of heating a space through the use of hot water circulated through heating coils or a radiator in the space
Initiating Device:	A fire alarm system component which initiates a fire alarm (i.e. pull station).
Inverted Roof:	Where the roof membrane is located below the insulation and ballast (also Protected Membrane Roof).
Joist:	One of several parallel, horizontal and relatively closely spaced concrete, wood or steel members directly supporting a floor or roof slab or deck.
kVA:	Kilo-Volt-Ampere, the unit used to measure apparent power. This is what is charged by the utility.

kW:	Kilowatt, the unit used to measure real power. This is power that is actually used by the customer.
Lintel:	A horizontal structural support above an opening in a wall.
Makeup Air:	Fresh, outdoor air that is mechanically introduced to a building to make up for the air removed from buildings by exhaust systems.
Panelboard:	A component of an electrical distribution system which divides an electrical power feed into subsidiary circuits, while providing a protective fuse or circuit breaker for each circuit all contained in a common enclosure.
Pre-Formed Insulation:	Insulation that has been fabricated at the factory to conform to the shape of pipe fittings such as elbows, or to equipment such as valves and pumps. Usually designed to be easily removable so it can be removed from equipment for servicing and then re-installed when the work is complete.
Refractory:	A ceramic insulating material used in boilers and similar equipment because it can withstand very high temperatures.
Retaining Wall:	A wall constructed to hold back earth, water or other backfill.
Riser:	Pipes or ductwork used to transport water, effluent, air or service cables vertically through a multi-storey building for distribution of services.
Roof Structural Deck:	An elevated platform consisting of a variety of materials such as wood planks or metal pans, often supported by structural joists, beams and columns made of steel or wood, all structurally designed to support loads such as a roofing system.
Scaling:	A degradation of the surface of a concrete element, consisting of local flaking or peeling away of the near-to-surface sand and cement portion of hardened concrete or mortar.
Sealant:	A flexible material used on the inside (or outside) of a building to seal gaps in the building envelope in order to prevent uncontrolled air infiltration and exfiltration.
Sealed Units:	Two pieces (lites) of glass sealed around the perimeter, increasing the thermal resistance of the window.
Shear Wall:	A wall that resists horizontal forces applied in the plane of the wall, usually due to wind or seismic effects (also Flexural Wall).
Signaling Device:	A fire alarm system component which visually or audibly alarms (i.e. bell, strobe).
Slab-on-Grade:	A concrete floor slab placed directly on compacted fill and deriving its support from this fill (also Slab-on-Ground).
Spall:	A fragment of concrete or masonry detached from a larger mass by a blow, weather action, internal pressure, or efflorescence within the mass (sub flourescence).
Stucco:	A finish consisting of cement plaster, used for coating exterior building surfaces.
Switchboard:	A board or panel equipped with apparatus for controlling the operation of a system of electric circuits.

Terminal Board:	An insulating base on which terminals for wires or cables have been mounted
Thermographic Scanning:	Also known as infra-red scanning. A photograph that detects hot spots of electrical equipment or temperature differences at building surfaces.
Tuckpointing:	Also Repointing, the process of removing deteriorated mortar from the joints of masonry and replacing it with new mortar.
Uninterruptible Power Supply (UPS)	A power electronic device primarily used as a back-up power source for computers and computer networks to ensure on-going operation in the event of a power failure. Sophisticated units also have power conditioning and power monitoring features.
Vapour Barrier:	A material or combination of materials having a high resistance to water vapour diffusion, used to separate a high water vapour pressure environment from a low water vapour pressure environment.
Vent:	An opening placed in a facing wall or window assembly to promote circulation of air within a cavity behind the facing, usually to encourage drying of the cavity and/or to moderate the pressure across the facing.
Volt (V):	A unit of potential energy equal to the potential difference between two points on a conductor carrying a current of 1 ampere.
VRLA	Valve Regulated Lead-Acid, low maintenance batteries which use much less battery acid than traditional lead-acid batteries typically used in UPS applications.
Weather-strip	A strip of material placed around an operating window or door to reduce air leaks.
Weephole:	An opening placed in a wall or window assembly to permit the escape of liquid water from within the assembly. Weepholes can also act as vents.
Weeping Tiles:	Drainage pipes placed at the base of foundation walls.