Arriva Condominium

2024 Reserve Fund Study

Prepared for:

Arriva Condominium Corporation
Corporation No. 1014767
433 11 Avenue SE

c/o FirstService Residential
1100, 840 7 Avenue SW
Calgary, AB T2P 3G2

Prepared by:

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Site Walkthrough: June 12, 2024
RJC.028168.0075

Executive Summary

The intent of a Capital Reserve Fund analysis is to develop the financial requirements to establish and maintain a Capital Replacement Reserve Fund to finance the future major repairs and/or replacement of the common property components.

RJC Engineers has performed a visual review of the complex to determine the general condition of common property building components. The anticipated life and replacement costs of each component are derived from published data, discussion with contractors, and our experience. With the present equivalent age and the expected normal life determined, the remaining life was calculated.

Based on estimated remaining life and replacement costs, Reserve Fund projections are prepared based on the present annual contributions as well as the calculated future contributions in order to maintain a minimum balance in the reserve fund.

Legislation requires that the Reserve Fund analysis and cash flow charts be updated at a maximum of five years to reflect the current condition of the common property as well as requirements of the Corporation. Also, a Board must, for each fiscal year, prepare an annual report respecting the reserve fund per the requirements of section 29 of the Condominium Property Regulation.

Reserve Fund Background Information:

Condominium Plan No.:	1014767	Site Review Date:	June 12, 2024
Number of Units:	164	Draft Issue Date:	July 24, 2024
Construction Year:	2008	Draft 2 Issue Date:	August 14, 2024
Year End:	April 30	Final Issue Date:	September 09, 2024
Anticipated Opening Balance:	$342,595 as of May 1, 2025		
Current Annual Contribution:	$325,000		
Reserve Fund Projection:	30 years		
Minimum Fund Balance:	$175,000		

Table of Contents

EXECUTIVE SUMMARY

1.0 TERMS OF REFERENCE

2.0 HISTORY AND DESCRIPTION OF COMPLEX

3.0 DISCUSSION

4.0 RECOMMENDATIONS – RESERVE FUND CONTRIBUTIONS

5.0 ADDITIONAL INVESTIGATIONS

APPENDIX A CONDITION SURVEY
- 1.0 Building Interior Common Property
- 2.0 Building Exterior Common Property
- 3.0 Exterior Landscape and Miscellaneous
- 4.0 Parking Structure
- 5.0 Roofing Systems
- 6.0 Mechanical Systems
- 7.0 Electrical Systems
- 8.0 Fire Safety Systems
- 9.0 Elevator Systems

APPENDIX B RESERVE FUND CALCULATIONS
- Items Schedule
- Expenditure Schedule
- Cash Flow Projections

1.0 Terms of Reference

RJC Engineers was commissioned to perform a capital replacement reserve fund study for Arriva condominium complex, located at 433 11 Avenue SE by FirstService Residential on behalf of the Board of Directors. The intent and terms of this study are outlined in our proposal dated January 16, 2024 and include the following:

- Determine the inventory of major common property as stipulated in the Condominium plan.
- Perform review of the common property components to form an opinion of their general condition, and assess the remaining life of the components.
- Review the operation and maintenance history of the complex, including the associated costs, with the property manager.
- Determine the repair and replacement requirements for the major common property components based upon their age, condition and expected remaining life.
- Offer an opinion of probable cost for work required.
- Develop financial requirements to establish and maintain a capital replacement reserve fund to finance the future repair and replacement of the common property.

No destructive testing was performed to confirm actual conditions during the preparation of our report.

A summary of our condition survey is provided in Appendix A. Reserve Fund calculation sheets are included in Appendix B.

1.1 Study Team

The study team are qualified reserve fund study providers, and there are no grounds of disqualification for any team member under section 21.1 or 21.2 of the Alberta Condominium Property Regulation. The primary study team consisted of the following:

Stacey McDougall, P.Tech.(Eng), LEED AP
Stacey is a Technologist with RJC's Building Science and Restoration group. Over the last 17 years at RJC she has developed structural drawing sets, performed construction site reviews, performed evaluations of existing structure and facilities, and completed over 100 Reserve Fund Studies.

Ryan Coles, BSc, P.Eng., LCCI
Ryan is a Principal with RJC's Building Science and Restoration group. Over the last 15 years Ryan has completed over 400 facility assessments and Reserve Fund Studies as well as numerous building envelope and roofing programs. Ryan is currently the president of Canadian Condominium Institute's South Alberta Chapter (CCI).

Scott MacKay, Enermac Consultants Inc.
Scott is the owner of Enermac Consultants Inc. and will perform visual reviews of the condominium mechanical, electrical and elevator systems. Scott is a former registered Certified Operating Engineer in Alberta and Associate Technician with the Alberta Society of Engineering Technologists (ASET) with over 40 years of experience in building operations and maintenance.

1.2 Capital Replacement Reserve Fund

Those definitions provided in the Province of Alberta Condominium Property Act, Revised Statutes of Alberta 2000 Chapter C-22 with revisions up to and including those of November 16, 2022 and in conjunction with the Condominium Property Regulations 168/2000 with amendments up to and including Alberta regulation 218/2022 were used for the purposes of this reserve fund study.

The capital replacement reserve fund is an amount of money "used to provide sufficient funds that can reasonably be expected to provide for major repairs and replacement of any real and personal property owned by the Corporation, and the common property, where the repair and replacement is of a nature that does not normally occur annually" (Section 38.1). Items of routine or annual maintenance are not included, and must be considered separately by the Board, with budgets allocated accordingly.

This reserve fund projection is intended to be a dynamic document, which should be reviewed annually by the Board. Updates to the financial forecasts may be prudent at times when large unplanned expenditures have occurred. RJC can provide assistance with financial updates, typically on an hourly rates basis. In addition, the reserve fund projection should be re-evaluated periodically on a maximum of every five years, in order to reflect the current condition of the common property components, the requirements of the Corporation, inflation and the cost of construction.
For the purposes of this reserve fund projection, we have shown repair and replacement expenditures which are expected to be required within the next 30 years.

1.3 Replacement Versus Maintenance

Typically, reserve fund calculations are based on the replacement of capital items based on their expected normal life. Replacement costs for the various components noted in the reserve fund can be significant. In some cases, the Board will need to decide whether to maintain a component beyond its expected service life or to replace it. Maintenance is required to help the component reach its expected normal life.

As the component reaches the end of its expected life, maintenance of the component might not be economically feasible or practical. In these instances, maintaining the component beyond its expected service life could result in higher maintenance costs and there could be increased risks associated with failure of the component.

For the reserve fund calculations, we are providing costs for replacement or major repairs (depending on the particular component). The decision to maintain or replace an item is one that the Board needs to consider as the component approaches the end of its useful life. This requires review of the particular component by qualified individuals and assessment of the costs, risks, and benefits of performing this work. This type of decision-making process is not part of a reserve fund study.

1.4 Methodology for Calculations

The Condominium Act requires that a financial study be in place to deal with the capital replacement of items on a project. This study must allow for sufficient funds for replacement of common property over the life of the complex. The function of the study is intended to provide a quantitative expression for the corporation to use to develop a proposed plan of action. For the purpose of this study, a minimum fund balance approach has been used.

The minimum fund balance is intended to maintain the reserve fund closing balance at or above a predetermined minimum cash balance during the specified period of the study. The replacement schedule is intended to act as a guideline and can vary over the timeframes used in the study, depending on the actual condition of the component as it approaches the end of its life. This approach incorporates a rolling budget concept such that the reserve contribution requirements are anticipated to change in subsequent updates to account for the actual replacement of components.

Since the reserve fund balance is kept to a set minimum value, the annual contributions may need to be adjusted throughout the life of the complex. In using this method, the study will require ongoing management to reflect changing conditions.

The minimum fund for this complex has been set at $175,000 plus an annual increase for inflation. This value was selected, as this amount should be sufficient to pay for one or two large unexpected expenditures that might occur sooner than anticipated.

1.5 Common Property

The Condominium Property Act defines that "Common Property means so much of the parcel as is not comprised in any unit shown on the Condominium Plan, but does not include land shown on the condominium plan that has been provided for the purposes of roads, public utilities and reserve land" (Section 1 (1) f).

For the purposes of this Reserve Fund Study, we have defined common property to include the following:

- Exterior walls,
- Unit entrance doors from corridors/hallways,
- Exterior windows, balcony doors, patio doors, building entrance/exit doors,
- The roof and all roofing materials,
- Roadways
- Sidewalks,
- Amenity rooms
- Exterior patios, walkways and balconies,
- The building structures,
- Landscaping works and chattels owned or kept by the Corporation,
- Common stairways, hallways, and lobby and entrance areas,
- Common area interior doors,
- Boiler rooms,
- Parkade areas,
- All utility services, on, under or through the common property,
- Elevators,
- All other outside facilities and accoutrements affecting the appearance, usability, value or safety of the parcel or the units.

For the purpose of this study, we have not included fixtures or finishes contained wholly within a unit, such as paint, floor and wall coverings, lights, receptacles, or plumbing fixtures, which do not have an effect on other Units or the Corporation. In addition, components that may require repair or replacement beyond the 30 year projections (such as total replacement of underground services) may not appear in the expenditures; however, a brief discussion is provided separately in the condition survey (Appendix A) and they are included in the items schedule.

1.6 Life Expectancy and Replacement Costs

We attempt to accurately estimate the life expectancy, replacement cost, and present condition of reserve fund elements, however, this is not an exact science, especially with respect to underlying or buried elements hidden from view. Opinions of costs and present condition rely on published data on expected normal lives of components, discussion with contractors and on our previous experience. Actual conditions may differ significantly from the assumed conditions. In addition, the maintenance performed on components can often help to extend the life of many of the components. For this reason, it is important to update technical assessments periodically in order to keep the fund current. Recommendations for additional/updated detailed technical evaluations are included in Section 5.0.

The projected timing of expenditures is estimated and should not necessarily be used to determine the actual timing of repairs or replacements. Year to year adjustments to timing and/or phasing of repair programs have little effect on the Required Annual Contribution. The Board should develop their annual budgets based on actual conditions at that time. They should not rely upon the projection represented on the Reserve Fund Expenditure Schedule, which attempts to predict expenditures too far into the future to be reliable in the short term.

2.0 History and Description of Complex

The Arriva condominium complex was constructed between 2005 and 2007 and contains 164 apartment style units in one building. The podium is shared with a separate commercial condominium corporation. The building utilizes conventionally reinforced concrete construction and contains four levels of parking. The exterior is clad with aluminum framed curtain wall, composite metal panels, and brick and masonry at the podium level. Heating is provided by central boilers.

Photo 1: Tower

3.0 Background Information

A visual examination of the complex was performed to review the general condition of the common property elements and to assist in the preparation of the reserve fund study. Appendix A summarizes the findings of our site examination. We were provided with the following documents to assist in preparation of the Reserve Fund Study:

- Original development drawings of the residential portion of the building
- Bylaws of the corporation dated May 6, 2008
- Audited financial statements from the past five years listing reserve fund expenditures
- Easement Agreement dated May 1, 2008
- ENMAX vault Letter of Opinion produced by Designcore dated October 25, 2022

Appendix B includes spreadsheets which calculate reserve fund contributions based on the present fund balance indicated by the Board, our opinion of the cost of repairs/replacement, estimated life-span, and estimated remaining life of each item. Calculations include adjustments for selected interest and inflation rates based on an assumed average rate of inflation of 2.5% and an annual interest rate of 2.5%. GST is not recoverable and so has been included in the costs. Inflation and interest rates can vary significantly over time; however, the difference between these rates is the factor that most impacts future expenditures and reserve fund studies.

Costs and life predictions are based on published book values, discussions with contractors, and our experience with similar projects. These are not firm costs for repair and the actual cost and life predictions will vary. There may also be unforeseen conditions that could affect the proposed expenditure schedule. This could require adjustment to the time frames for the work and in some cases, could result in special assessments, should there be a large, unbudgeted expense in any particular year.

The Items Schedule lists all the proposed major capital items included in calculating the annual contributions. This schedule summarizes each of the items and includes the current costs of the work, expected life, present equivalent age and the estimated remaining life.

The Expenditure Schedule lists the proposed work to be completed in each year for the next 30 years, based on the data provided in the Items Schedule for each item in the complex. This can be used as a guideline to schedule work for the first 3 to 5 years. Changes to the work for future years would be adjusted during periodic updates of the reserve fund.

4.0 Recommendations – Reserve Fund Contributions

It is our understanding that as of May 1, 2025, the balance in the reserve fund will be approximately $342,595. In the scenarios presented we have maintained a minimum fund balance of $175,000 (increased for inflation) throughout the 30 year period where possible to allow for one or two large unexpected expenditures that might occur sooner than anticipated and while the reserve fund balance is projected to be at its lowest.

It is not possible to maintain the current annual capital reserve fund contributions and accommodate the 30 year term forecasted expenditures. An increase in annual reserve fund contributions will be required. We typically suggest increasing contributions by a certain percentage each year.

In order to comply with the Condominium Property Act, the Board must approve a scenario and develop a plan for adequately funding and maintaining the reserve fund. These amounts are designated for capital expenditures, and are in addition to other condominium fees, which the Board may normally assess for maintenance and operations.

Multiple funding scenarios are presented for the Board's review in draft versions of the study. Each scenario provides the closing balance and required contributions for the next 30 years of the building's life based on various levels of contribution to the reserve fund. The Board subsequently chooses a scenario for issuance with this study.

As there are numerous factors that can affect the longevity and performance of a component, it is difficult to accurately predict the anticipated expenditures over the 30-year period. In some cases, components could require replacement earlier or later than what is noted in this document. It is therefore essential that the Owners and the Board understand that the reserve fund report should be used to establish fees and expenditures for the first three to five years (note that the legislation requires that the plan be updated at a period not to exceed five years). Annual contributions could then be adjusted as required.

In addition, the Board may wish to consider updating only the financial calculations for the reserve fund annually, similar to updating the maintenance and operating budgets. This would consist of recording the actual work performed in that year, updating the costs and possibly modifying the expenditures in the short term.

5.0 Additional Investigations

Further investigation is recommended for some of the items noted in our Condition Survey. The reserve fund condition survey was limited to primarily visual review and did not incorporate dismantling of finishes or materials testing. We suggest that additional investigations be performed as follows:

- The cladding, caulking materials, windows, and doors should be examined every five years to determine where repairs are required to reduce the risk of water penetration into the buildings. If any evidence of moisture infiltration is identified, remedial waterproofing should be initiated promptly to mitigate damage.
- Annual review of the roofs is recommended to determine areas where maintenance may be required and to allow for prompt repair.
- Periodic review of the balcony liquid applied membrane, at least every five years and more frequently as membrane nears the end of its expected life, is recommended to identify areas of required maintenance to ensure a watertight seal and prevent moisture from contacting the underlying structure.
- Annual review of the fire rated doors is recommended.
- The City of Calgary's Building Maintenance Bylaw requires that buildings five storeys or greater and more than 10 years old require visual assessments of building exterior components every five years. We assume Arriva condominium had a BEVA completed around 2018 and so is now due for a new BEVA.
- Annual review of the suspended parking slab traffic deck coating is recommended to identify areas of required maintenance to ensure a watertight seal and prevent moisture and road salt from penetrating the parking slabs.
- We recommend regular cleaning of in-slab dryer vents to prevent lint build up which could lead to moisture induced deterioration of the soffit around the vents
- Regular cleaning and infrared scanning of the electrical system should be completed.
- Regular cleaning of the elevator room and equipment is recommended.
- Annual inspection of boiler flues is required per the National Fire Code – 2023 Alberta Edition.
- A weathered plywood cap is visible on the masonry build out at the parkade entrance. We recommend this be reviewed and replaced with something more weather resistant.
- We recommend a review of balconies to determine if spalling concrete around railing post bases observed at one balcony is an isolated issue.

- Mechanical expenditures in the last five years are higher than expected. We recommend further review to determine the cause.

Based on the findings from the above noted investigations, the Board would have a better understanding of the condition of the components and the priorities for repair. Additionally, this information can be helpful in preparing the appropriate details and specifications for the work. This type of preparation could reduce the potential risk of unexpected repairs and minimize costly changes that could arise from an unclear scope of work.

Thank you for selecting RJC to assist you with this study. Should you have any questions or comments, or if we may be of further assistance, please do not hesitate to contact our office.

Yours truly,

READ JONES CHRISTOFFERSEN LTD.

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The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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Principal

Engineers

Appendix A

Condition Survey

June 12, 2024
RJC Job No.: RJC.028168.0075

Condition Survey

RJC Engineers performed a condition survey consisting of a review of the visibly accessible elements of the Common Property. The following is a brief description and our comments regarding some of the more significant items included in the reserve fund projection.

We have included our assumptions for the "Expected Life" of the component under normal use, the "Present Equivalent Age" (our estimate of its age based on our visual review or based on the present age of the component) and the "Estimated Remaining Life" which is the difference of the expected life and its present equivalent age. These are used in the reserve fund calculations for the various components and are based on published data, discussion with contractors and our previous experience. In some cases we have used an average age for calculating components, which may have experienced previous replacement or partial replacement. Additionally, we may present an age that differs from actual for components that are experiencing premature deterioration or those that are in better condition than their age resembles.

The actual life of many of these components will vary depending upon factors such as maintenance and quality of the original products. In addition, design decisions made at the start of construction may have the biggest impact on both the functionality and aesthetics. Areas such as the building orientation, the number and style of windows, the type of roof construction and insulation values are some of the major components that are dependent on each other's performance. Factors such as the snow removal, repainting/staining, and lawncare practices can also influence the life of exterior components.

Per Section 38 of the Alberta Condominium Property Act, the reserve fund provides for major repairs and replacement of any real and personal property owned by the corporation, common property and managed property, where the repair or replacement is of a nature that does not occur annually. Funds are not to be used for capital improvements unless authorized by a special resolution with 75% owner support, except where those improvements have been included in current reserve fund study by the reserve fund study provider or to comply with health, building and maintenance and occupancy standards as required by law. Replacement of common property with the contemporary equivalent of an obsolete property or a lower cost equivalent of the existing property is not considered a capital improvement.

This report has been prepared after a site visit and a review of any existing drawings and records made available. No calculations or testing of the common property components, systems or equipment has been undertaken. This report reflects the best judgements in the light of the information available at the time of preparation.

A 1.0 Building Interior Common Property

In this section, allowances have been made for repairs such as painting and replacement of the interior building finishes within the common areas, based upon both our understanding of the current repair and replacement schedules and those recommendations presented by the Board.

The frequency of refinishing work or replacement will need adjustment according to both wear and the desire to update appearance. The condition of these areas will depend on regular maintenance, and the level of usage. The renovation budgets provided allow for repair and replacement of similar materials. Exterior finishes, electrical, mechanical, elevators and safety components are addressed separately in their applicable sections of this report.

Annual repairs will be required to address localized damage or problems that typically occur. No budgets have been included for these types of annual repairs as they are usually included in the maintenance and operations budgets.

A quantity survey and condition review were taken of each common area and included in the total budgets for each of these areas. The following is a breakdown of those areas reviewed.

1.01 GROUND FLOOR LOBBY FINISHES

Lobby wall finishes are a combination of wood panels, painted finishes, and tile. Flooring is tile and the ceiling is painted. Finishes appeared to be in good condition at the time of review. We have included a budget for renovation of the lobby. We have included a budget for painting touchups in the hallway finishes.

Photo 2: Lobby finishes

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Renovation budget: $50,000

1.02 HALLWAY WALL FINISHES

Photo 3: Typical hallway finishes

Hallways walls below the 30th floor have painted walls and ceilings. 30th floor and above walls have wallpaper and panelling. Finishes in the upper floor hallways and laundry rooms appeared to be in good condition at the time of review. We have included a budget for painting walls and ceilings in these spaces, as well as replacement of wallpaper.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Renovation budget: $70,000

1.03 COMMON AREA CARPET FLOORING

The carpet flooring in the hallways appeared to be in reasonable condition at the time of our review. The fourth floor carpet flooring near the social room is in poor condition. We have allowed for complete replacement of the carpet flooring in the reserve fund calculations.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $150,000

1.04 COMMON AREA TILE FINISHES

The tile flooring in the main floor lobby and hallways, fourth floor common washrooms, and guest suite bathroom flooring appeared to be in good condition at the time of our review. We anticipate that replacement cost of any damaged tile or mortar would be included in the maintenance budget. We have allowed for complete replacement of the tile flooring in the reserve fund calculations.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $75,000

1.05 STAIRWELL FINISHES

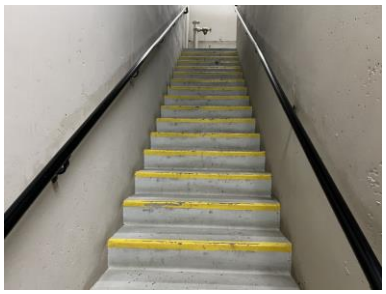

Photo 4: Stairwell finishes

The stairwell walls and stair nosings have been painted and were in reasonable condition at the time of our review. The following budget includes painting of the walls, ceilings and stair nosings. No budgets have been included for the handrails within the stairwells at this time.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Renovation budget: $60,000

1.06 COMMON AREA INTERIOR DOORS

Photo 5: Typical unit door

Included under this item are interior doors associated with common property such as entry doors to units, common, mechanical and electrical rooms, interior stairwell, and storage rooms. Overall, the common area doors appeared to be in good condition. Door sizes, styles and construction vary throughout the building. Included are insulated and non-insulated hollow metal doors, and wood core doors. We noted that the fire rating labels located on the edges of the doors appear to have been removed. This should be avoided as it prevents future determination of whether or not the doors and frames are appropriately fire rated. Annual review of the fired rated doors is recommended.

Regular maintenance of doors and hardware will be required throughout the life of the complex. These maintenance costs are anticipated to cover replacement of the hardware, and are expected to be covered under the operating expenses and not part of the reserve fund.

Complete replacement of door hardware has been accounted for at the time of door replacement. Note that budgets are included for individual doors including those areas where double doors have been installed. The Board will need to review each door replacement to ensure the appropriate fire rating is maintained.

Expected Normal Life:	45	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	29	Years

Replacement budget: $240,000

1.07 SOCIAL ROOM FINISHES

Finishes in the social room include hardwood floors and painted walls/ceilings. We have allowed for replacement of the flooring and repainting in the reserve fund calculations.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

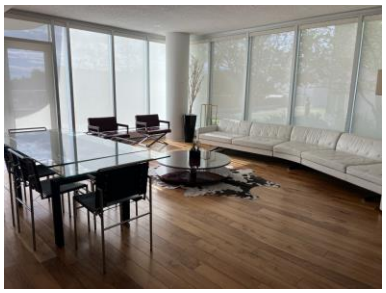

Photo 6: Social room

Renovation budget: $10,000

1.08 GUEST SUITE FINISHES

Finishes in the two guest suites include carpet flooring, painted walls/ceilings, and a partial t-bar ceiling. We have allowed for renovation of the finishes in the reserve fund calculations.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Photo 7: Guest suite

Renovation budget: $10,000

1.09 COMMON AREA FURNITURE

The following budget includes for replacement of the furniture located throughout common areas, amenity rooms and guest rooms. Furniture appeared to be in reasonable condition at the time of our review.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $10,000

A 2.0 Building Exterior Common Property

In this section, allowances have been made for repair or replacement of components or finishes on the exterior areas of the building. These areas consist of the exterior walls, balconies, soffit, exterior doors and windows.

The exterior wall cladding of the complex consists of aluminum framed curtain wall, composite metal panels, and brick and masonry at the podium level. A visual review of the cladding suggests they are performing reasonably well.

The cladding assemblies noted above function as "concealed barrier" wall systems. In a concealed barrier system, the exterior cladding components act to shed water away however, should water penetrate behind the exterior face, the underlying moisture barrier acts to protect the underlying framing members. The in-situ construction was not confirmed and selective removal of finishes would be required to confirm the construction details. Destructive testing of the assembly was not performed to determine if moisture related deterioration was occurring within the wall assemblies.

2.01 BRICK RESTORATION

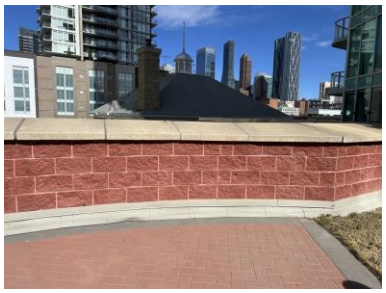

Photo 8: Masonry at terrace level guard wall

The majority of the brick and masonry on the exterior of the podium are the responsibility of the commercial condominium, however there are select areas at the terrace and around the loading dock which are Arriva's responsibility. Typically, construction of these wall finishes consist of building paper placed over the wall sheathing followed by caulking and/or flashing at penetrations. Metal ties are secured to the wall, and are intended to provide lateral support for the brick veneer. An air space is incorporated in the assembly to drain any moisture penetrating the brick to the exterior. Weep holes are typically incorporated along the top and bottom portions of the wall at regular intervals. These weep holes serve both a venting and water drainage function.

We recommend periodic review of the masonry work be undertaken, preferably on a five year basis. This review will help to identify problems that can be corrected as part of a maintenance program. During our site walkthrough, we did not observe any signs of displacement or cracking. However, a plywood cap is visible on the masonry build out at the parkade entrance. We recommend this be reviewed and replaced with something more weather resistant.

For the purpose of this report we have included a restoration allowance that would account for re-pointing joints, cleaning of brick veneer surfaces, and minor selective repairs to spalled and damaged brick units. The brick is expected to last the life of the complex so replacement costs have not been included in this study.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Restoration allowance: $10,000

2.02 COMPOSITE ALUMINUM PANELS – REPLACE

Portions of the exterior wall are clad with composite aluminum panels. The panels are in good condition. The following budget includes replacement of the metal panels.

Expected Normal Life:	45	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	29	Years

Photo 9: Aluminum panels at roof

Restoration budget: $2,500,000

2.03 METAL CLADDING

The mechanical penthouse is clad with metal panels, which appeared to be in good condition at the time of review. The following budget includes replacement of the metal panels.

Expected Normal Life:	45	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	29	Years

Photo 10: Penthouse metal cladding

Restoration budget: $30,000

2.04 BALCONY WATERPROOFING

Balconies are finished with a liquid applied waterproofing membrane to protect the underlying structure from moisture infiltration. We expect future repair of the balcony structure will not be required provided the balcony waterproofing is maintained, however future reapplication and localized repairs of the waterproof membrane will be required and is included in this budget. We reviewed one balcony with spalling concrete around railing post bases. This issue was identified in a report produced by Entuitive and dated January 11, 2017, which referenced an earlier (2015) report on delaminated concrete at slab edges. We understand a balcony repair program was completed between 2017 and 2020, but do not know if concrete repairs around railing posts was included. We recommend a review of the balconies to determine the extent of spalling concrete at railing posts bases.

Regular review and maintenance of the waterproofing membrane and sealant around the railing posts is advised to prevent moisture induced damage to the concrete structure beneath. We expect the costs of review and maintenance of the waterproofing will be included in the operating/maintenance budget.

At the time of membrane reapplication we recommend that the slopes on the balconies be assessed and improved if required to eliminate ponding water. We have adjusted the present equivalent age to reflect the recent balcony restoration program. We have provided an allowance for repairs to balcony concrete in item 3.01. We assume sealant at railing bases will be replaced at the time of waterproofing membrane reapplication.

Expected Normal Life:	20	Years
Present Equivalent Age:	6	Years
Estimated Remaining Life:	14	Years

Reapplication budget: $600,000

2.05 BALCONY RAILINGS

Photo 11: Typical railings

Metal railings with glass infill panels are used to enclose the balconies. The railing posts are set in steel brackets cast into the concrete slab. The report produced by Entuitive noted deformation and splitting of the railing posts, likely due to freezing of water trapped inside the posts. We were not able to determine whether the railings were repaired as part of the balcony restoration program, but during our review, we visited a balcony railing with deformation and splitting. The deformed post is now in contact with the glass infill panel, which may create a risk of glass breakage. Given the nature of the railing assembly, we expect isolated repairs and/or replacement will be needed in the short term. We have provided a repair budget in 2025 and 2026.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $750,000

2.06 BALCONY SOFFIT PAINT

The balcony slab soffits have been painted and appeared to be in generally good condition. The following budget allows for repainting.

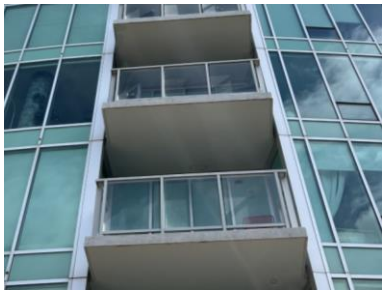

Photo 12: Balcony soffits

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Restoration budget: $90,000

2.07 CURTAIN WALL – RESTORATION

Photo 13: Curtain wall

Curtain wall glazing systems are provided throughout the tower. This glazing system is composed of components such as the aluminum frames, sealed glass units, spandrel panels, flashings, and exterior joint sealants. These components provide the primary line of defense against water penetration by forming a rain-shedding screen and by minimizing the number and size of penetrations through which direct rain penetration can occur. The curtain wall system is exterior glazed. The overall curtain wall appears to be in good condition and the normal life expectancy of this system can be extended with regular maintenance.

We recommend that periodic review of the curtain wall be undertaken, preferably on a five year basis. This review will help to identify problems that can be corrected as part of a maintenance program. For the purpose of this report we have included restoration budgets that would account for replacement of glazing, gaskets, seals and sealants. Complete replacement of the entire curtain wall assembly is not expected to occur.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Year
Estimated Remaining Life:	19	Years

Restoration budget: $12,000,000

2.08 EXTERIOR PATIO AND BUILDING ENTRANCE DOORS

Photo 14: Building entrance doors

Exterior doors provide access on to the patio/balcony deck areas and into the building common areas. No problems were reported with the doors at the time of our review. Regular maintenance of the doors will be required over the life of the units. These maintenance costs are typically included in the operating expenses and have not been included in this study.

An estimated budget for complete replacement of all the exterior doors in the complex is provided for the reserve fund calculations. We have not included any allowance for associated wall repairs if

deterioration is discovered during unit replacements. Appropriate detailing of the wall openings is required for all door replacements to ensure the building envelope is not negatively impacted.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $450,000

2.09 EXTERIOR BUILDING SEALANT

Measures should be taken to periodically review and maintain the sealant at any joints or discontinuities in the cladding system, including window and door openings. Care and judgement must be used where sealant is installed along the building so that it does not restrict water flow outwards from behind the claddings. Periodic removal and re-installation of sealant at podium cladding transitions, around railing bases, at pipe penetrations through the exterior walls and around various roofing components is anticipated. The longevity of these sealant materials will vary with the quality of the material and installation. We have included a budget in the reserve fund to address this work.

Based on previous projects at other complexes, we suggest this work be performed on a maximum 15-year cycle.

Expected Normal Life:	15	Years
Present Equivalent Age:	12	Years
Estimated Remaining Life:	3	Years

Replacement budget: $15,000

A 3.0 Exterior Landscape and Miscellaneous

In this section, allowances have been made for repair or replacement of components or finishes on the exterior landscaped areas. These areas consist of the sidewalks, fences and other common complex areas.

Planters add to the surrounding building aesthetics. These items will require frequent maintenance to uphold the appearance of the complex. No budgets have been included in the reserve fund for these items as it is assumed that landscaping maintenance is included in the operating/maintenance budget.

3.01 CONCRETE ELEMENTS

Repairs or replacement of the concrete sidewalks, curbs, building structure, concrete walls around the ground level chiller, rear laneway, parkade wheelstops, and other miscellaneous areas is anticipated throughout the life of the complex. Typically, de-icing salts and freezing and thawing conditions will significantly affect the surfaces of these concrete elements. In addition, damage can occur to curbs from the blade of a snowplough during snow removal. We understand the lift out panel of the Enmax vault is deteriorated and requires repairs. Parkade wheelstops are corroded and spalling. One balcony reviewed also requires repairs, as noted in item 2.04.

Depending on the extent of deterioration, repairs to exterior concrete elements could be required seasonally. For the purpose of the reserve fund, we have included a contingency for the repair of damaged concrete elements every 5 years. This budget may require some adjustment with each update to the reserve fund study and such records for these types of repairs should be maintained for these updates. Additional amounts have been provided in 2025 and 2026 for balcony repairs.

Expected Normal Life:	5	Years
Present Equivalent Age:	4	Years
Estimated Remaining Life:	1	Year

Repair budget: $30,000

3.02 EXTERIOR PLAZA WATERPROOFING

The plaza is considered all areas above the underground parking that are not within the footprint of the building. The structural slabs in these areas have had a waterproofing membrane installed. The plaza is predominantly covered with concrete topping. As the waterproof membrane is hidden below the overburden, review of the waterproofing could not be performed.

Photo 15: Plaza on east elevation

There was no reported or observed leakage occurring through the plaza areas at the time of our review. The following budget allows for removal and replacement of the plaza overburden and waterproofing materials. We have assumed that the drivelane on the west elevation is considered a common foundation, with a 80% cost share for the residential condominium corporation.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $580,000

3.03 ENTRANCE CANOPY

Photo 16: Entrance canopy

A metal canopy is provided above the residential entrance. The metal appeared to be in good condition at the time of our review, however there is some surface corrosion, indicating the canopy is in need of painting. We have provided a budget for periodic repainting and repairs to the canopy. We have not provided for replacement as we expect the structure to last the light of the building.

Expected Normal Life:	15	Years
Present Equivalent Age:	13	Years
Estimated Remaining Life:	2	Years

Repainting allowance: $20,000

3.04 RESERVE FUND STUDY UPDATE

We have included the cost of the reserve fund study in the following budget.

Expected Normal Life:	5	Years
Present Equivalent Age:	0	Years
Estimated Remaining Life:	5	Years

Update budget: $9,600

3.05 BUILDING EXTERIOR VISUAL ASSESSMENT (BEVA)

We have included the cost of the BEVA in the following budget. We have assumed that a BEVA will be completed in 2024.

Expected Normal Life:	5	Years
Present Equivalent Age:	0	Years
Estimated Remaining Life:	5	Years

Update budget: $11,000

A 4.0 Parking Structure

In this section, budgets have been made for repair or replacement of components or finishes associated to the parking structure. The Easements, Covenents, and Restrictions agreement indicates that the residential condominium corporation is responsible for a 75% share of P1 repairs, and 100% for other parkade levels.

We assume that painting of the parkade lines, walls, and ceilings will be covered in the maintenance budget and therefore has not been included in the study at this time.

4.01 PARKING DECK – MISCELLANEOUS REPAIRS

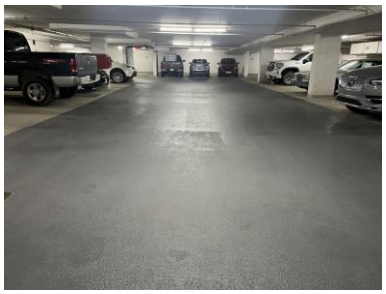

Photo 17: Parkade suspended slab

The suspended slab in the parkade is subject to deterioration due to exposure to water and road salts tracked into the facility by vehicles. A parkade maintenance program was completed in 2023. We understand a parkade condition review is planned for fall 2024, and assume there will be another maintenance program in 2025. Areas of efflorescence staining were observed on the soffit below the commercial parking area. We recommend cleaning and painting of these areas to better monitor through slab leakage.

For the reserve fund calculations, an allowance has been provided for selected concrete and traffic deck coating repairs.

Expected Normal Life:	3	Years
Present Equivalent Age:	2	Years
Estimated Remaining Life:	1	Year

Repair budget: $80,000

4.02 PARKING DECK – DRIVE AISLE WEARCOURSE REAPPLICATION

Portions of the drive aisle traffic deck coating on the suspended slab in the parkade was reapplied in 2023. Periodic cleaning of the parking decks is anticipated as part of regular maintenance. The frequency of parkade cleaning has a significant impact on the coating lifecycle. The more frequent cleaning, the less maintenance and reapplication will be required. Based on our experience with similar facilities we would expect that reapplication of the traffic deck coating wearcourse would be required in high traffic areas at 3-7 year intervals to maintain protection to the underlying waterproofing layer. Areas such as the entrance ramp and first drivelane corner may require more frequent reapplication and full system repair at select locations where worn or damaged.

Expected Normal Life:	7	Years
Present Equivalent Age:	2	Years
Estimated Remaining Life:	5	Years

Wearcourse reapplication budget: $200,000

4.03 PARKING DECK –PARKING STALL WEARCOURSE REAPPLICATION

We expect reapplication of the traffic deck coating wearcourse will be required in low traffic areas such as parking stalls at 15 year intervals to maintain protection to the underlying waterproofing layer.

Expected Normal Life:	15	Years
Present Equivalent Age:	14	Years
Estimated Remaining Life:	1	Year

Wearcourse reapplication budget: $250,000

4.04 PARKING DECK – TRAFFIC DECK COATING REPLACEMENT

Budgets noted above are costs that have been associated with the normal expected wear. The existing system is expected to perform for its expected normal life however, replacement of the traffic deck coating throughout the parking area will be required in the future, as the system approaches the end of its design life.

An elastomeric membrane coating's design life and rate of degradation are dependent on several factors. Traffic volume, exposure to chemical fluids, temperature, ventilation, ponding water, initial application defects, aging of materials, etc. can cause the system to eventually fail and no longer protect the concrete. Efforts made through recoating areas where the wearcourse has become depleted during the service life of the system help by reducing the membrane to direct wearing and as a result premature failure. Annual reviews of the traffic decks will help to identify any required maintenance.

Expected Normal Life:	45	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	29	Years

Replacement budget: $1,000,000

4.05 PARKADE REPAINT

The following budget allows for repainting of the parkade walls, ceilings, and columns. Painted finishes were in good condition at the time of review.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Repainting budget: $150,000

A 5.0 Roofing Systems

The following section provides information regarding the building roof components that will eventually require replacement. Failure of some of these components can cause water penetration to occur and could reduce the life of the overall building structure. We have not included budgets for the underlying structural components since we anticipate that replacement of these members will not be required assuming that the roof is maintained in good condition.

We recommend performing annual roofing reviews as part of a preventative maintenance program, and that the Estimated Remaining Life of the roofing be revised as appropriate. If any evidence of moisture infiltration is identified, remedial waterproofing should be initiated promptly to mitigate damage.

A davit system has been installed on the roof as well as 30th and 33rd floor balconies. Access system drawings were posted at the roof door. An equipment log including operating instructions, installation records, and records of inspection and maintenance as required by the Alberta Occupational Health Act and the CSA Z91-17 and CSA Z271-20 was not found at the roof door. We did not verify whether it is kept in an alternate location. In accordance with applicable CSA standards, the davit arms and bases should be inspected on an annual basis or prior to use if the time between uses exceeds 12 months. We assume testing is included in the operations and maintenance budget. Davit arms were being stored on the roof. Best practice is to store the arms where they are protected from weather and other environmental contaminants.

5.01 FLAT ROOFS

The tower flat roof systems are considered protected membrane roofs. Typical protected membrane roof systems have the waterproofing membrane applied to the roof slab or decking, with protection board, drainage mat, and a layer of rigid insulation installed on top of the membrane. Pavers are placed over the insulation to complete the system. There were no reports of leakage at the time of review.

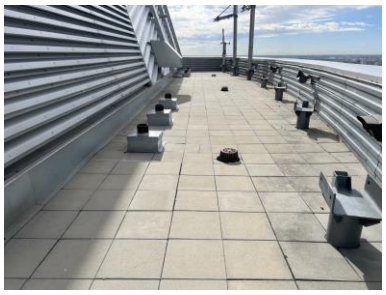

Photo 18: Flat roof with davit bases

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $250,000

5.02 STANDING SEAM METAL ROOF

The drawings indicate there is a standing seam metal roof on the mechanical penthouse. We did not access this roof as part of our review. On-going maintenance and repair of localized deterioration will be required. This is considered an operating and maintenance budget item and is not included in the reserve fund calculations. A budget has been provided for replacement of the roof. No leaks were reported at the time of review.

Expected Normal Life:	50	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	34	Years

Replacement budget: $100,000

5.03 TERRACE ROOFS

The terraced balconies are considered roofs as they are located over interior space. The terraced roofs are also considered protected membrane roof systems. We understand the terraced roof waterproofing systems are from original construction. The following budget allows for removal and reinstallation of the concrete pavers or concrete topping at the time of membrane replacement. A budget has been included for total replacement of the roof assembly including membranes, flashings, and removal and reinstallation of pavers. We did not access the terrace roofs at the time of review.

Proper detailing of the balcony membrane will require removal/reinstallation of finishes at the base of the wall to facilitate a positively lapped moisture barrier. At the time of membrane replacement we recommend that the slopes on the balconies be assessed and improved if required to eliminate ponding water.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $230,000

5.04 4th FLOOR "PARK IN THE SKY" TERRACE ROOF

The fourth floor "Park in the Sky" is a terrace patio with concrete topping and landscaping over the waterproofing membrane. We have assumed the fourth floor terraced patio is considered a "common foundation", therefore budget reflects an 80% cost share for total replacement of the roof assembly including membranes, flashings, and removal and reinstallation of pavers.

Photo 19: Park in the Sky

Proper detailing of the balcony membrane will require removal/reinstallation of finishes at the base of the wall to facilitate a positively lapped moisture barrier.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $1,000,000

A 6.0 Mechanical Systems

Replacement of the various mechanical systems and equipment has been included in the reserve fund study. A report on present conditions and recommendations is included below. The various mechanical systems do comprise a significant portion of the overall building costs. Integral components found in the common areas include piping, valves, and pumps, heating, and cooling systems. The life of these components will vary depending on the level of service and maintenance performed. It is therefore important to note that the life expectancies for these systems are estimates and that the actual life might exceed what is noted below if they are well maintained.

No calculations or testing of the systems or equipment have been undertaken to ascertain the internal condition or capacities of the mechanical systems to meet the heating, cooling, ventilation or the domestic plumbing and fire protection requirements of this building.

In general, historical data provides an average timeline that a component should be expected to last under manufacturer's specified maintenance. Present equivalent age is based on historical data, maintenance logbooks, and a visual review to determine the condition of the component. The estimated remaining life is determined from these factors. Regular maintenance, cleaning, and servicing will have a direct impact on equipment life.

Replacement occurs when a component has reached the end of its expected normal life. It is not advantageous economically to rebuild a component when it has reached or is nearing the end of its expected normal life. Technological up-grades and energy efficient components may justify early replacement of some equipment prior to its design life being reached.

Mechanical systems may have a direct effect on the building envelope. Improper operation not only affects the mechanical components but also the entire seal of the building.

Mechanical expenditures in the last five years are higher than expected. We recommend further review to determine the cause.

6.01 HEATING BOILERS

Four Camus Hydronic Smart Flame 3,150,000 are installed in the 37th floor mechanical room. These boilers provide service to the building heating system. Chemical treatment was not identified at the time of review. Backflow protection has been installed.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Photo 20 - Heating boiler

Replacement budget: $360,000

6.02 BOILER FLUES

Two boiler flues extend to the building rooftop. Annual inspection of the flues is required.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $6,000

6.03 BOILER PUMPS AND MOTORS

Four Armstrong 1.5 HP boiler pumps are installed In the 37th floor mechanical room. These pumps circulate the heated water through the boilers. Regular monitoring is recommended.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Photo 21 - Boiler pump

Replacement budget: $12,000

6.04 HEATING PUMPS AND MOTORS

Two Armstrong 15 HP and two Armstrong 7.5 HP heating pumps are installed in the mechanical room. These pumps circulate the heated water through the boilers to the building distribution piping of the heating system and unit heaters in the building and parkade.

Photo 22 - Heating pumps and motors

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $90,000

6.05 HEATING PUMPS AND MOTORS – MAIN FLOOR

Two Armstrong 10 HP heating pumps are installed in the main floor mechanical room. These pumps service heat to the residential and commercial units in the building. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation based on area served.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $23,000

6.06 PLATE TO PLATE HEAT EXCHANGER

One Armstrong plate to plate heat exchanger is installed in the 37th floor mechanical room. This exchanger is utilized for the use of glycol in the closed loop heating system of the building.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $45,000

6.07 CUSHION TANKS

Installed in the 37th floor mechanical room are seven medium and one large floor mounted cushion tanks. These tanks allow for the expansion and contraction of the heating / cold water at temperature differentials.

Photo 23: Cushion tanks

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $25,000

6.08 CUSHION TANKS – MAIN FLOOR

One large and one small floor mounted cushion tanks are installed in the first-floor mechanical room. These tanks allow for the expansion and contraction of the heating water at temperature differentials. These tanks service both the residential and commercial units in the building. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation based on area served.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $4,800

6.09 HEATING PIPING

The heating piping supply heated water through the heating system of the building. The heating piping supplies the cabinet heaters, unit heaters and unit perimeter radiant heating system.
During site review, It was noted that he heating piping shows signs of corrosion and leaks. It was not determined if chemical treatment is being utilized. Chemical treatment protects the heating piping from premature corrosion and failure. We recommend that the chemical treatment program is reviewed and adjusted to help stop the corrosion.

Isolated leaks should be repaired on an “as needed” basis, however replacement should be considered when more economical than select repair. Monitoring and recording locations and frequency of pipe leaks will help to determine when a replacement program should be implemented.

Budgets have been provided for replacement of the distribution piping based on the approximate distribution area. The actual replacement costs will be influenced by factors such as the quality, quantity, and configuration of the piping installation and the quality of interior finishes that will be affected during the work.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $2,500,000

6.10 UNIT HEATERS

Thirteen unit heaters are installed throughout the building. These unit heaters supply additional heat to the areas where they have been installed.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $75,000

6.11 ZONE VALVES AND THERMOSTATS

Thermostats are installed within the residential units, hallways and common rooms and have been accounted for in this section. These components have a direct effect on the building systems. The thermostats have been changed in the last two years. These thermostats are monitored and can be controlled with the building management system. We assume that the zone valves will be replaced on an "as needed basis".

Expected Normal Life:	20	Years
Present Equivalent Age:	2	Years
Estimated Remaining Life:	18	Years

Replacement budget: $200,000

6.12 DOMESTIC HOT WATER HEATERS

Six A. O. Smith Masterfit 179,100 BTU 100 US gallon domestic hot water heaters are installed in the 37th floor mechanical room. These heaters supply heated water to the residents of the upper floors in the building.

Photo 24 – 37th floor domestic hot water heaters

Expected Normal Life:	10	Years
Present Equivalent Age:	8	Years
Estimated Remaining Life:	2	Years

Replacement budget: $90,000

6.13 DOMESTIC HOT WATER HEATERS – MAIN FLOOR

Six A. O. Smith Masterfit 351,000 BTU 100 US gallon domestic hot water heaters are housed in the first-floor mechanical room. These heaters supply hot water to the lower residential units and commercial units. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation based on area served.

Expected Normal Life:	10	Years
Present Equivalent Age:	8	Years
Estimated Remaining Life:	2	Years

Replacement budget: $68,000

6.14 DOMESTIC HOT WATER CIRCULATION PUMP

One Armstrong ¼ HP recirculation pump is housed in the 37th floor mechanical room. This pump recirculates the hot water in the piping to keep the water hot for the residential units.

Expected Normal Life:	15	Years
Present Equivalent Age:	13	Years
Estimated Remaining Life:	2	Years

Replacement budget: $2,000

6.15 DOMESTIC HOT WATER CIRCULATION PUMPS ADDITION

Two recirculation pumps have been added to the domestic water system.

Expected Normal Life:	15	Years
Present Equivalent Age:	5	Years
Estimated Remaining Life:	10	Years

Replacement budget: $4,000

6.16 DOMESTIC HOT WATER CIRCULATION PUMPS – MAIN FLOOR

Two Armstrong 1 HP domestic hot water circulation pumps are installed in the first-floor mechanical room. These pumps service the lower floor residential units and commercial units. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation based on area.

Expected Normal Life:	15	Years
Present Equivalent Age:	13	Years
Estimated Remaining Life:	2	Years

Replacement budget: $3,000

6.17 DOMESTIC HOT WATER HEAT EXCHANGER – MAIN FLOOR

One plate to plate heat exchanger is installed in the first-floor mechanical room. This heat exchanger insures hot water to the building lower residential units and commercial units of the building. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation based on area.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $27,000

6.18 DOMESTIC WATER PIPING

The original to construction domestic water piping was noted to be copper with brass valves, copper intake, copper risers and PEX distribution with a cast pipe sanitary system. This system has backflow protection installed.

It was noted at the time of review that the domestic hot water system has been experiencing leaks. It was also noted that the sanitary piping visible in the parkade are showing signs of leakage and repairs. The sanitary piping risers were not visible to review. We recommend that a piping review of the condition of the entire piping system is completed to help determine a precise replacement schedule.

The actual timing of the replacement and costs will be influenced by factors such as the quality, quantity and configuration of the piping and its installation and the quality of interior finishes that will be affected during the work. The timing of the replacement of the piping will be a function of the rate of failure that occurs in the building. Isolated leaks can be repaired on an “as needed” basis; however, replacement should be considered when frequency and extent of leaks increases significantly. Monitoring and recording dates and locations of pipe leaks will help to determine when a replacement program should be implemented. Also, ultra sonic testing of selected areas of piping can be completed in the future to determine remaining pipe wall thickness. This is a non-destructive test that could help to provide information on localized areas of the pipe and may help to predict the condition of the system and when replacement is necessary.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $2,600,000

6.19 SANITARY PIPING CONTINGENCY

The sanitary piping in the parkade is showing significant signs of corrosion. A sanitary piping contingency has been set up for sectional replacements on an as-needed basis.

Expected Normal Life:	5	Years
Present Equivalent Age:	4	Years
Estimated Remaining Life:	1	Year

Replacement budget: $10,000

6.20 CHILLED WATER PUMPS AND MOTORS

Two Armstrong 5 HP and two 2HP chilled water pumps are installed in the 37th floor mechanical room. These pumps circulate chilled water throughout the upper portion of the building.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $28,000

6.21 CHILLED WATER PUMPS AND MOTORS - MAIN FLOOR

Two Armstrong 7.5 HP and two Armstrong 3 HP chilled water pumps are installed in the first-floor mechanical room. These pumps service the lower residential units and commercial units of the building. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $32,000

6.22 DOMESTIC COLD WATER PUMP PACKAGE

Installed in the first-floor mechanical room is the Armstrong 20 HP and 40 HP domestic cold water pump package.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $120,000

6.23 CHILLED WATER PIPING

The chilled water piping was noted to be copper with brass valves with copper main water intake risers and distribution to the residential units. This piping supplies chilled water to the cooling in the residential units of the building.

The actual timing of the replacement and costs will be influenced by factors such as the quality, quantity and configuration of the piping and its installation and the quality of interior finishes that will be affected during the work. The timing of the replacement of the piping will be a function of the rate of failure that occurs in the building. Isolated leaks can be repaired on an "as needed" basis; however, replacement should be considered when frequency and extent of leaks increases significantly. Monitoring and recording dates and locations of pipe leaks will help to determine when a replacement program should be implemented. Also, ultra sonic testing of selected areas of piping can be completed in the future to determine remaining pipe wall thickness. This is a non-destructive test that could help to provide information on localized areas of the pipe and may help to predict the condition of the system and when replacement is necessary.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $1,700,000

6.24 FAN COIL UNITS

The residential units have fan coils for the heating and cooling systems installed in the ceiling areas. These fan coils require regular maintenance. We recommend that the Board establish a scheduled maintenance program for these fan coils.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $2,500,000

6.25 CHILLERS

Two Aqua Snap R-410A Chiller and condensers are installed in the 37th floor rooftop. A chiller and condenser is also installed in the main floor mechanical room. These chillers supply chilled water to the building heating / cooling systems.

Photo 25 - Rooftop chiller unit

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $600,000

6.26 HALLWAY MAKE UP AIR SYSTEM

One Engineered Air 850,000 BTU 6380 CFM hallway make up air unit with cooling is installed in the 37th floor mechanical room. This unit supplies the upper floors with fresh air and pressurizes the hallways in the event of fire.

Photo 26 - 37th floor make up air system

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $100,000

6.27 HALLWAY MAKE UP AIR SYSTEM – MAIN FLOOR

One Engineered Air 6,800,000 BTU hallway make up air system is installed in the first-floor mechanical room. This unit services the middle and lower levels of the building. There is a small make up air unit in the ceiling area of the garbage room also. This shared system is not addressed in the ECR agreement, however we have assigned a 75% cost share to the Arriva condominium corporation.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $240,000

6.28 EXHAUST FANS

Eight exhaust fans are included in this section. These fans are installed in the elevator rooms, washrooms and guest suites of the building. These fans supply the removal of odors and ventilation in the areas where the fans have been installed.

Expected Normal Life:	30	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	14	Years

Replacement budget: $12,000

6.29 SUMP PUMPS

Four sump pumps and pits are installed in the parkade of the building. Monthly testing of these pumps is recommended to maintain operation when needed.

Expected Normal Life:	10	Years
Present Equivalent Age:	7	Years
Estimated Remaining Life:	3	Years

Replacement budget: $8,000

6.30 PARKADE MAKE UP AIR SYSTEM

Two Engineered Air 1,120,000 BTU 10,000 CFM and two Engineered Air 2,739,000 BTU 24,900 CFM units are installed in the building parkade. Included in system are wall mounted exhaust fans and carbon monoxide detection devices. This system was operational at the time of site review.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $220,000

6.31 PARKADE DOOR AND CONTROLLER - COMMERCIAL

Two single Rytec high performance parkade doors with controllers are installed at the entrance of the parkade. We understand these are the responsibility of the commercial corporation and therefore have not provided a budget for replacement.

6.32 PARKADE DOOR AND CONTROLLER - RESIDENTIAL

Two single Rytec high performance parkade doors with controllers are installed between the commercial and residential private parking. These doors were operational at the time of site review.

Photo 27: Parkade door

Expected Normal Life:	20	Years
Present Equivalent Age:	13	Years
Estimated Remaining Life:	7	Years

Replacement budget: $60,000

6.33 BMS SYSTEM CONTINGENCY

A Delta Controls Building Management system was noted to have been installed approximately two years ago. A contingency has been established for the upgrading of the system.

Expected Normal Life:	10	Years
Present Equivalent Age:	1	Years
Estimated Remaining Life:	9	Years

Replacement budget: $100,000

6.34 OFFICE EQUIPMENT

Included in this section are a computer, HP laser-jet P1005 printer, a keyboard and telephone. Items are located at the concierge desk.

Expected Normal Life:	10	Years
Present Equivalent Age:	7	Years
Estimated Remaining Life:	3	Years

Replacement budget: $5,000

6.35 APPLIANCES

Included in this section are budgets to replace the Miele built-in refrigerator and microwave, a dishwasher, and three Breville coffee machines. These appliances are installed in the meeting room and guest suites.

Expected Normal Life:	20	Years
Present Equivalent Age:	15	Years
Estimated Remaining Life:	5	Years

Replacement budget: $10,000

6.36 PLUMBING FIXTURES

Included in this section are all plumbing fixtures in the common areas. This includes washroom toilets, washroom sinks, bar sinks, janitor sinks and tub / shower units.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $4,300

6.37 ELECTRONIC EQUIPMENT

A Panasonic 42-inch flat screen television has been installed in the guest suites. Monies for this replacement has been accounted for in this section. We assume that these items will be replaced on an “as needed basis”.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $1,000

6.38 SNOW SWEEPER

We have provided a budget for replacement of the snow sweeper.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $4,000

6.39 IRRIGATION SYSTEM CONTINGENCY

A contingency has been established for the replacement of sprinkler heads and piping of the Rainbird irrigation system on the 4th floor Park in the Sky.

Expected Normal Life:	10	Years
Present Equivalent Age:	6	Years
Estimated Remaining Life:	4	Years

Replacement budget: $10,000

6.40 UNDERGROUND SERVICES CONTINGENCY

The storm and sanitary services consist of the underground lines that could be constructed of concrete and/or cast iron, which can deteriorate over time. Visual inspection of these underground services was not performed as part of this report.

A budget for selective replacement of these components has been included in the reserve fund calculations. Typically, the sewer piping will not require complete replacement but may have sectional failures. We have not allowed for full replacement of the various underground service lines at this time; however, we have provided an allowance for selected repair/replacement of lengths of pipe. Should repairs become significant or too frequent, replacement of the systems could be required.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $100,000

A 7.0 Electrical Systems

Replacement of electrical systems and equipment has been included in the reserve fund. The electrical systems within the units are not part of common property and are not included in the reserve fund calculations.

During review, it was noted that energy efficient light bulbs are being utilized.

A proper preventive maintenance schedule typically includes periodic cleaning and infrared scans of all panel, disconnects, motor starters and distribution centres. It is recommended that this practise be implemented. In addition, it would be anticipated that such a maintenance program would need to be increased in frequency as the building ages.

7.01 LIGHTING SYSTEM

We have included for replacement of the lighting fixtures in the common areas, parkade, and exterior areas.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $195,000

7.02 ELECTRICAL DISTRIBUTION

Budgets have been included for the electrical disconnects, equipment disconnects, and distribution centres located throughout the property, which provide for electrical distribution of the buildings. Regular cleaning and infrared scanning of the electrical system is recommended as part of the building maintenance program.

Photo 28 - Main electrical disconnects

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $450,000

7.03 FREQUENCY DRIVERS

Eight frequency drivers have been installed on various pumps in the 37th floor mechanical room. The frequency drivers provide for greater energy efficiency of the pumps.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $40,000

7.04 BASEBOARD HEATERS

Baseboard heaters are installed in the two guest suite bathrooms.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $2,000

7.05 INTERCOMS

Installed at the main front entrance of the building and parkade entrance are two Touch Screen intercoms. The intercoms are part of the security system of the building. Regular scheduled maintenance is recommended.

Photo 29 - Typical intercom

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $20,000

7.06 AUTOMATED DOORS

Installed at the main entrance of the building are two sets of automated doors for the accessibility of physically challenged individuals entering or exiting the building. This system was operational at the time of site review.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $22,000

7.07 SECURITY SYSTEM

The building digital security system is comprised of sixty-five cameras strategically mounted throughout the buildings and parkade. This system provides additional security to the residents and visitors. Per the ECR, we have allocated a 50% cost share for this item.

Expected Normal Life:	10	Years
Present Equivalent Age:	5	Years
Estimated Remaining Life:	5	Years

Replacement budget: $65,000

7.08 KEYLESS ACCESS SYSTEM

The keyless access system is comprised of fifteen readers strategically mounted throughout the buildings and parkade. This system provides additional security to the building residents.

Expected Normal Life:	10	Years
Present Equivalent Age:	5	Years
Estimated Remaining Life:	5	Years

Replacement budget: $30,000

A 8.0 Fire Safety Systems

In this section, allowances have been made for replacement of the fire safety systems within the building. It is our understanding that the fire alarm system is tested and serviced on an annual basis.

8.01 FIRE ALARM SYSTEM

The original fire system is comprised of three booster panels, pull stations, horn strobes, and smoke detectors / heat sensors. We understand that this system is serviced annually. Replacement costs of the current devices are included but does not include the cost for replacement of the wiring as it is expected to outlast the term of the study. Per the ECR, we have provided an 80% cost share for this item.

Photo 30 - Fire alarm panel

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $540,000

8.02 FIRE PUMP CONTROLLER / TRANSFER SWITCH

Installed in the main floor mechanical room are two Eaton fire alarm controller / transfer switches. Per the ECR, we have assigned an 80% cost share to the corporation.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Replacement budget: $90,000

8.03 FIRE PUMPS AND MOTORS

One Armstrong 100 HP fire pump supplies additional pressure to the fire sprinkler systems and standpipe. Per the ECR, we have assigned an 80% cost share to the corporation.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Replacement budget: $120,000

8.04 BUILDING FIRE SPRINKLER SYSTEM

Installed throughout the building is the fire sprinkler system. Scheduled servicing and maintenance are assumed.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $3,800,000

8.05 PARKADE FIRE SPRINKLER SYSTEM

Located throughout the parkade and storage areas is the parkade fire sprinkler system. Scheduled servicing and maintenance are assumed. Per the ECR, we have assigned an 80% cost share to the Arriva condominium corporation.

Expected Normal Life:	40	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	24	Years

Replacement budget: $700,000

8.06 EMERGENCY GENERATOR

Installed in the main floor mechanical room is the Detroit Diesel 529 KVA emergency generator. It is our understanding that this generator is tested monthly, and load tested be completed once a year. Per the ECR, we have assigned an 80% cost share to Arriva.

Expected Normal Life:	35	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	19	Years

Photo 31 - Emergency generator

Replacement budget: $200,000

A 9.0 Elevators

It is our understanding that the condominium presently has an elevator maintenance contract, which is intended to cover repair or replacement of various elevator equipment and elements as necessary. This does not include finishes to the cabs or doors, therefore an allowance is provided for refinishing these areas.

Prior to the completion date of the current maintenance contract, we recommend that a detailed review of the elevators be performed to determine their condition and life expectancy and to determine whether work performed to date has complied with the existing maintenance contract. Such a review will also determine the present level of service the elevators are actually receiving and whether this service meets the requirements within the current maintenance contract.

9.01 ELEVATOR MOTORS AND CONTROLS

Three Fuji-Tech 56 KW traction elevators provide service to the residents and visitors from the parkade to all floors within the building. We have included a budget for periodic modernization of the system, which may include require fire alarm and electrical upgrades to meet current code at the time of modernization.

Expected Normal Life:	25	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	9	Years

Photo 32 - Elevator motor and pulleys

Replacement budget: $1,200,000

9.02 ELEVATOR CAB FINISHES

The interior surface of the elevator car will be subject to everyday wear from normal use. The current maintenance contract does not include finishes to the cabs or doors; therefore, an allowance is provided for refinishing these areas. Any changes to the elevator cab materials will need to be approved by an elevator contractor or consultant to ensure finishes meet code requirements and do not add to the weight of the cab.

Expected Normal Life:	20	Years
Present Equivalent Age:	16	Years
Estimated Remaining Life:	4	Years

Replacement budget: $60,000

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Appendix B

Reserve Fund Calculations

Items Schedule

Expenditure Schedule

Cash Flow Projections

June 12, 2024
RJC Job No.: RJC.028168.0075

ARRIVA CONDOMINIUM (PLAN No. 1014767) CAPITAL REPLACEMENT ITEMS SCHEDULE 30 YEAR PROJECTION

Financial Analysis for Year Ended:	2024
Date of Study:	Jun-2024
Anticipated Fund Balance:	$342,595
RJC Job #	CAL.028168.0075
Interest Rate :	2.5%
Inflation Rate:	2.5%

Item	Description of work	Action at end of Lifecycle	Budget Cost For Repair or Replacement (Present $'s)	Expenditure Spread (Years)	Expenditure per year (Present $'s)	Expected Normal Life (Years)	Present Equivalent Age (Years)	Estimated Life Remaining (Years)	Total Budget Cost Over 30 Year Projection (Present $'s)
BUILDING INTERIOR COMMON PROPERTY									
1.01	Ground Floor Lobby Finishes	Renovate	$50,000	2	$25,000	25	16	9	$50,000
1.02	Hallway Wall Finishes	Renovate	$70,000	1	$70,000	20	16	4	$140,000
1.03	Common Area Carpet Flooring	Replace	$150,000	2	$75,000	20	16	4	$300,000
1.04	Common Area Tile Finishes	Replace	$75,000	1	$75,000	30	16	14	$75,000
1.05	Stairwell Finishes	Replace	$60,000	4	$15,000	25	16	9	$60,000
1.06	Common Area Interior Doors	Replace	$240,000	4	$60,000	45	16	29	$180,000
1.07	Social Room Finishes	Replace	$10,000	2	$5,000	20	16	4	$20,000
1.08	Guest Suite Finishes	Replace	$10,000	3	$3,333	20	16	4	$20,000
1.09	Common Area Furniture	Replace	$10,000	1	$10,000	20	16	4	$20,000
BUILDING EXTERIOR COMMON PROPERTY									
2.01	Brick Restoration	Restore	$10,000	1	$10,000	20	16	4	$20,000
2.02	Composite Aluminum Panels - Replace	Replace	$2,500,000	8	$312,500	45	16	29	$1,562,500
2.03	Metal Cladding	Restore	$30,000	1	$30,000	45	16	29	$30,000
2.04	Balcony Waterproofing	Restore	$600,000	1	$600,000	20	6	14	$600,000
2.05	Balcony Railings	Replace	$750,000	2	$375,000	40	16	24	$850,000
2.06	Balcony Soffit Paint	Restore	$90,000	4	$22,500	25	16	9	$90,000
2.07	Curtain Wall - Restoration	Restore	$12,000,000	5	$2,400,000	35	16	19	$12,000,000
2.08	Exterior Patio and Building Entrance Doors	Replace	$450,000	1	$450,000	35	16	19	$450,000
2.09	Exterior Building Sealant	Replace	$15,000	1	$15,000	15	12	3	$30,000
EXTERIOR LANDSCAPE & MISCELLANEOUS									
3.01	Concrete Elements	Repair	$30,000	1	$30,000	5	4	1	$250,000
3.02	Exterior Plaza Waterproofing	Restore	$580,000	1	$580,000	40	16	24	$580,000
3.03	Entrance Canopy	Restore	$20,000	1	$20,000	15	13	2	$40,000
3.04	Reserve Fund Study Update	Update	$9,600	1	$9,600	5	0	5	$57,600
3.05	Building Exterior Visual Assessment (BEVA)	Update	$11,000	1	$11,000	5	0	5	$66,000
PARKING STRUCTURE									
4.01	Parking Deck - Miscellaneous Repairs	Repair	$80,000	1	$80,000	3	2	1	$560,000
4.02	Parking Deck - Drive Aisle Wearcourse Reapplication	Restore	$200,000	2	$100,000	7	2	5	$800,000
4.03	Parking Deck - Parking Stall Wearcourse Reapplication	Restore	$250,000	3	$83,333	15	14	1	$500,000
4.04	Parking Deck - Traffic Deck Coating Replacement	Replace	$1,000,000	3	$333,333	45	16	29	$1,000,000
4.05	Parkade Repaint	Restore	$150,000	2	$75,000	25	16	9	$150,000
ROOFING SYSTEMS									
5.01	Flat Roofs	Replace	$250,000	1	$250,000	30	16	14	$250,000
5.02	Standing Seam Roof	Replace	$100,000	6	$16,667	50	16	34	$0
5.03	Terrace Roofs	Replace	$230,000	1	$230,000	35	16	19	$230,000
5.04	4th Floor "Park in the Sky" Terrace Roof	Replace	$1,000,000	1	$1,000,000	35	16	19	$1,000,000

ARRIVA CONDOMINIUM (PLAN No. 1014767) CAPITAL REPLACEMENT ITEMS SCHEDULE 30 YEAR PROJECTION

Financial Analysis for Year Ended:	2024
Date of Study:	Jun-2024
Anticipated Fund Balance:	$342,595
RJC Job #	CAL.028168.0075
Interest Rate :	2.5%
Inflation Rate:	2.5%

Item	Description of work	Action at end of Lifecycle	Budget Cost For Repair or Replacement (Present $'s)	Expenditure Spread (Years)	Expenditure per year (Present $'s)	Expected Normal Life (Years)	Present Equivalent Age (Years)	Estimated Life Remaining (Years)	Total Budget Cost Over 30 Year Projection (Present $'s)
MECHANICAL SYSTEMS									
6.01	Heating Boilers	Replace	$360,000	4	$90,000	35	16	19	$360,000
6.02	Boiler Flues	Replace	$6,000	2	$3,000	30	16	14	$6,000
6.03	Boilers Pumps and Motors	Replace	$12,000	4	$3,000	25	16	9	$12,000
6.04	Heating Pumps and Motors	Replace	$90,000	4	$22,500	25	16	9	$90,000
6.05	Heating Pumps and Motors - Main floor	Replace	$23,000	2	$11,500	25	16	9	$23,000
6.06	Plate to Plate Heat Exchanger	Replace	$45,000	1	$45,000	30	16	14	$45,000
6.07	Cushion Tanks	Replace	$25,000	2	$12,500	30	16	14	$25,000
6.08	Cushion Tank - Main Floor	Replace	$4,800	1	$4,800	30	16	14	$4,800
6.09	Heating Piping	Replace	$2,500,000	5	$500,000	40	16	24	$2,500,000
6.10	Unit Heaters	Replace	$75,000	4	$18,750	30	16	14	$75,000
6.11	Zone Valves and Thermostats	Replace	$200,000	2	$100,000	20	2	18	$200,000
6.12	Domestic Hot Water Heaters	Replace	$90,000	3	$30,000	10	8	2	$270,000
6.13	Domestic Hot Water Heaters - Main Floor	Replace	$68,000	3	$22,667	10	8	2	$204,000
6.14	Domestic Hot Water Recir Pump	Replace	$2,000	1	$2,000	15	13	2	$4,000
6.15	Domestic Hot Water Recir Pumps Addition	Replace	$4,000	2	$2,000	15	5	10	$8,000
6.16	Domestic Hot Water Recir Pumps 65 / 35	Replace	$3,000	2	$1,500	15	13	2	$6,000
6.17	Dom Hot Water \heat Exchanger 65 / 35	Replace	$27,000	1	$27,000	30	16	14	$27,000
6.18	Domestic Water Piping	Replace	$2,600,000	5	$520,000	30	16	14	$2,600,000
6.19	Sanitary Piping Contingency	Replace	$10,000	1	$10,000	5	4	1	$60,000
6.20	Chilled Water Pumps and Motors	Replace	$28,000	4	$7,000	25	16	9	$28,000
6.21	Chilled Water Pumps and Motors - Main Floor	Replace	$32,000	2	$16,000	25	16	9	$32,000
6.22	Domestic Cold Water Pump Pkg	Replace	$120,000	1	$120,000	25	16	9	$120,000
6.23	Chilled Water Piping	Replace	$1,700,000	5	$340,000	40	16	24	$1,700,000
6.24	Fan Coil Units	Replace	$2,500,000	4	$625,000	25	16	9	$2,500,000
6.25	Chillers	Replace	$600,000	3	$200,000	35	16	19	$600,000
6.26	Hallway Make Up Air System	Replace	$100,000	1	$100,000	35	16	19	$100,000
6.27	Hallway Make Up Air System - Main Floor	Replace	$240,000	1	$240,000	35	16	19	$240,000
6.28	Exhaust Fans	Replace	$12,000	4	$3,000	30	16	14	$12,000
6.29	Sump Pumps	Replace	$8,000	4	$2,000	10	7	3	$24,000
6.30	Parkade Make Up Air Systems	Replace	$220,000	4	$55,000	35	16	19	$220,000
6.31	Parkade Doors and Controllers - Commercial	Replace							$0
6.32	Parkade Doors and Controllers - Residential	Replace	$60,000	2	$30,000	20	13	7	$120,000
6.33	BMS System Contingency	Replace	$100,000	1	$100,000	10	1	9	$300,000
6.34	Office Equipment	Replace	$5,000	1	$5,000	10	7	3	$15,000
6.35	Appliances	Replace	$10,000	4	$2,500	20	15	5	$20,000
6.36	Plumbing Fixtures	Replace	$4,300	2	$2,150	35	16	19	$4,300
6.37	Electronic Equipment	Replace	$1,000	2	$500	20	16	4	$2,000
6.38	Snow Sweeper	Replace	$4,000	1	$4,000	25	16	9	$4,000
6.39	Irrigation System	Replace	$10,000	1	$10,000	10	6	4	$30,000
6.40	Underground Services	Replace	$100,000	1	$100,000	40	16	24	$100,000
ELECTRICAL SYSTEMS									
7.01	Lighting System	Replace	$195,000	2	$97,500	25	16	9	$195,000
7.02	Electrical Distribution	Replace	$450,000	5	$90,000	40	16	24	$450,000
7.03	Frequency Drivers	Replace	$40,000	8	$5,000	40	16	24	$40,000
7.04	Baseboard Heaters	Replace	$2,000	1	$2,000	25	16	9	$2,000
7.05	Intercoms	Replace	$20,000	2	$10,000	20	16	4	$40,000
7.06	Automated Doors	Replace	$22,000	2	$11,000	20	16	4	$44,000
7.07	Security System	Replace	$65,000	1	$65,000	10	5	5	$195,000
7.08	Keyless Access Readers	Replace	$30,000	1	$30,000	10	5	5	$90,000
FIRE SAFETY SYSTEM									
8.01	Fire Alarm System	Replace	$540,000	1	$540,000	25	16	9	$540,000
8.02	Fire Pump Controller / Tran Switch	Replace	$90,000	2	$45,000	25	16	9	$90,000
8.03	Fire Pump and Motor	Replace	$120,000	1	$120,000	35	16	19	$120,000
8.04	Building Sprinkler System	Replace	$3,800,000	2	$1,900,000	40	16	24	$3,800,000
8.05	Parkade Sprinkler System	Replace	$700,000	1	$700,000	40	16	24	$700,000
8.06	Emergency Generator	Replace	$200,000	1	$200,000	35	16	19	$200,000
ELEVATOR SYSTEMS									
9.01	Electric Elevator Motors and Controls	Replace	$1,200,000	3	$400,000	25	16	9	$1,200,000
9.02	Elevator Cab Finhises	Replace	$60,000	3	$20,000	20	16	4	$120,000
							Total Expenditures For 30 Year Period:		$42,498,200

rjc Engineers

ARRIVA CONDOMINIUM (PLAN No. 1014767)
EXPENDITURE SCHEDULE

Financial Analysis for Year Ended:	**2024**
Date of Study:	**Jun-24**
Anticipated Fund Balance:	**$342,595**
RJC Job #	**CAL.028168.0075**
Interest Rate :	**2.5%**
Inflation Rate:	**2.5%**

Item	Description	Year-->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
BUILDING INTERIOR COMMON PROPERTY																	
1.01	Ground Floor Lobby Finishes	Renovate									$25,000	$25,000					
1.02	Hallway Wall Finishes	Renovate				$70,000											
1.03	Common Area Carpet Flooring	Replace				$75,000	$75,000										
1.04	Common Area Tile Finishes	Replace														$75,000	
1.05	Stairwell Finishes	Replace								$15,000	$15,000	$15,000	$15,000				
1.06	Common Area Interior Doors																
1.07	Social Room Finishes					$5,000	$5,000										
1.08	Guest Suite Finishes				$3,333	$3,333	$3,333										
1.09	Common Area Furniture	Replace				$10,000											
BUILDING EXTERIOR COMMON PROPERTY																	
2.01	Brick Restoration	Restore				$10,000											
2.02	Composite Aluminum Panels - Replace	Replace															
2.03	Metal Cladding	Restore															
2.04	Balcony Waterproofing	Restore														$600,000	
2.05	Balcony Railings	Replace	$50,000	$50,000													
2.06	Balcony Soffit Paint	Restore								$22,500	$22,500	$22,500	$22,500				
2.07	Curtain Wall - Restoration	Restore															
2.08	Exterior Patio and Building Entrance Doors	Replace															
2.09	Exterior Building Sealant	Replace			$15,000												
EXTERIOR LANDSCAPE & MISCELLANEOUS																	
3.01	Concrete Elements	Repair	$50,000	$50,000				$30,000					$30,000				
3.02	Exterior Plaza Waterproofing	Restore															
3.03	Entrance Canopy	Restore		$20,000													
3.04	Reserve Fund Study Update	Update					$9,600					$9,600					$9,600
3.05	Building Exterior Visual Assessment (BEVA)	Update					$11,000					$11,000					$11,000
PARKING STRUCTURE																	
4.01	Parking Deck - Miscellaneous Repairs	Repair	$80,000			$80,000			$80,000			$80,000			$80,000		
4.02	Parking Deck - Drive Aisle Wearcourse Reapplication	Restore					$100,000	$100,000						$100,000	$100,000		
4.03	Parking Deck - Parking Stall Wearcourse Reapplication	Restore	$83,333	$83,333													$83,333
4.04	Parking Deck - Traffic Deck Coating Replacement	Replace															
4.05	Parkade Repaint	Restore									$75,000	$75,000					
ROOFING SYSTEMS																	
5.01	Flat Roofs	Replace														$250,000	
5.02	Standing Seam Roof	Replace															
5.03	Terrace Roofs	Replace															
5.04	4th Floor "Park in the Sky" Terrace Roof	Replace															

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ARRIVA CONDOMINIUM (PLAN No. 1014767)
EXPENDITURE SCHEDULE

Financial Analysis for Year Ended:	**2024**
Date of Study:	**Jun-24**
Anticipated Fund Balance:	**$342,595**
RJC Job #	**CAL.028168.0075**
Interest Rate :	**2.5%**
Inflation Rate:	**2.5%**

Item	Description	Year-->	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
BUILDING INTERIOR COMMON PROPERTY																	
1.01	Ground Floor Lobby Finishes	Renovate															
1.02	Hallway Wall Finishes	Renovate									$70,000						
1.03	Common Area Carpet Flooring	Replace									$75,000	$75,000					
1.04	Common Area Tile Finishes	Replace															
1.05	Stairwell Finishes	Replace															
1.06	Common Area Interior Doors														$60,000	$60,000	$60,000
1.07	Social Room Finishes										$5,000	$5,000					
1.08	Guest Suite Finishes									$3,333	$3,333	$3,333					
1.09	Common Area Furniture	Replace									$10,000						
BUILDING EXTERIOR COMMON PROPERTY																	
2.01	Brick Restoration	Restore									$10,000						
2.02	Composite Aluminum Panels - Replace	Replace											$312,500	$312,500	$312,500	$312,500	$312,500
2.03	Metal Cladding	Restore														$30,000	
2.04	Balcony Waterproofing	Restore															
2.05	Balcony Railings	Replace									$375,000	$375,000					
2.06	Balcony Soffit Paint	Restore															
2.07	Curtain Wall - Restoration	Restore		$2,400,000	$2,400,000	$2,400,000	$2,400,000	$2,400,000									
2.08	Exterior Patio and Building Entrance Doors	Replace				$450,000											
2.09	Exterior Building Sealant	Replace			$15,000												
EXTERIOR LANDSCAPE & MISCELLANEOUS																	
3.01	Concrete Elements	Repair	$30,000					$30,000					$30,000				
3.02	Exterior Plaza Waterproofing	Restore									$580,000						
3.03	Entrance Canopy	Restore		$20,000													
3.04	Reserve Fund Study Update	Update					$9,600					$9,600					$9,600
3.05	Building Exterior Visual Assessment (BEVA)	Update					$11,000					$11,000					$11,000
PARKING STRUCTURE																	
4.01	Parking Deck - Miscellaneous Repairs	Repair	$80,000			$80,000											
4.02	Parking Deck - Drive Aisle Wearcourse Reapplication	Restore				$100,000	$100,000						$100,000	$100,000			
4.03	Parking Deck - Parking Stall Wearcourse Reapplication	Restore	$83,333	$83,333													$83,333
4.04	Parking Deck - Traffic Deck Coating Replacement	Replace													$333,333	$333,333	$333,333
4.05	Parkade Repaint	Restore															
ROOFING SYSTEMS																	
5.01	Flat Roofs	Replace															
5.02	Standing Seam Roof	Replace															
5.03	Terrace Roofs	Replace				$230,000											
5.04	4th Floor "Park in the Sky" Terrace Roof	Replace				$1,000,000											

ARRIVA CONDOMINIUM (PLAN No. 1014767)
EXPENDITURE SCHEDULE

Financial Analysis for Year Ended: 2024
Date of Study: Jun-24
Anticipated Fund Balance: $342,595
RJC Job # CAL.028168.0075
Interest Rate : 2.5%
Inflation Rate: 2.5%

Item	Description	Year-->	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
MECHANICAL SYSTEMS																	
6.01	Heating Boilers	Replace															
6.02	Boiler Flues	Replace														$3,000	$3,000
6.03	Boilers Pumps and Motors	Replace								$3,000	$3,000	$3,000	$3,000				
6.04	Heating Pumps and Motors	Replace								$22,500	$22,500	$22,500	$22,500				
6.05	Heating Pumps and Motors - Main floor	Replace									$11,500	$11,500					
6.06	Plate to Plate Heat Exchanger	Replace														$45,000	
6.07	Cushion Tanks	Replace														$12,500	$12,500
6.08	Cushion Tank - Main Floor	Replace														$4,800	
6.09	Heating Piping	Replace															
6.10	Unit Heaters	Replace													$18,750	$18,750	$18,750
6.11	Zone Valves and Thermostats	Replace															
6.12	Domestic Hot Water Heaters	Replace	$30,000	$30,000	$30,000								$30,000	$30,000	$30,000		
6.13	Domestic Hot Water Heaters - Main Floor	Replace	$22,667	$22,667	$22,667								$22,667	$22,667	$22,667		
6.14	Domestic Hot Water Recir Pump	Replace		$2,000													
6.15	Domestic Hot Water Recir Pumps Addition	Replace										$2,000	$2,000				
6.16	Domestic Hot Water Recir Pumps 65 / 35	Replace		$1,500	$1,500												
6.17	Dom Hot Water \heat Exchanger 65 / 35	Replace														$27,000	
6.18	Domestic Water Piping	Replace												$520,000	$520,000	$520,000	$520,000
6.19	Sanitary Piping Contingency	Replace	$10,000					$10,000					$10,000				
6.20	Chilled Water Pumps and Motors	Replace								$7,000	$7,000	$7,000	$7,000				
6.21	Chilled Water Pumps and Motors - Main Floor	Replace									$16,000	$16,000					
6.22	Domestic Cold Water Pump Pkg	Replace									$120,000						
6.23	Chilled Water Piping	Replace															
6.24	Fan Coil Units	Replace								$625,000	$625,000	$625,000	$625,000				
6.25	Chillers	Replace															
6.26	Hallway Make Up Air System	Replace															
6.27	Hallway Make Up Air System - Main Floor	Replace															
6.28	Exhaust Fans	Replace													$3,000	$3,000	$3,000
6.29	Sump Pumps	Replace		$2,000	$2,000	$2,000	$2,000							$2,000	$2,000	$2,000	$2,000
6.30	Parkade Make Up Air Systems	Replace															
6.31	Parkade Doors and Controllers - Commercial	Replace															
6.32	Parkade Doors and Controllers - Residential	Replace							$30,000	$30,000							
6.33	BMS System Contingency	Replace									$100,000						
6.34	Office Equipment	Replace			$5,000										$5,000		
6.35	Appliances	Replace				$2,500	$2,500	$2,500	$2,500								
6.36	Plumbing Fixtures	Replace															
6.37	Electronic Equipment	Replace				$500	$500										
6.38	Snow Sweeper	Replace									$4,000						
6.39	Irrigation System	Replace				$10,000										$10,000	
6.40	Underground Services	Replace															
ELECTRICAL SYSTEMS																	
7.01	Lighting System	Replace									$97,500	$97,500					
7.02	Electrical Distribution	Replace															
7.03	Frequency Drivers	Replace															
7.04	Baseboard Heaters	Replace									$2,000						
7.05	Intercoms	Replace				$10,000	$10,000										
7.06	Automated Doors	Replace				$11,000	$11,000										
7.07	Security System	Replace					$65,000										$65,000
7.08	Keyless Access Readers	Replace					$30,000										$30,000
FIRE SAFETY SYSTEM																	
8.01	Fire Alarm System	Replace									$540,000						
8.02	Fire Pump Controller / Tran Switch	Replace									$45,000	$45,000					
8.03	Fire Pump and Motor	Replace															
8.04	Building Sprinkler System	Replace															
8.05	Parkade Sprinkler System	Replace															
8.06	Emergency Generator	Replace															
ELEVATOR SYSTEMS																	
9.01	Electric Elevator Motors and Controls	Replace								$400,000	$400,000	$400,000					
9.02	Elevator Cab Finhises	Replace			$20,000	$20,000	$20,000										
		TOTALS	$326,000	$261,500	$99,500	$309,333	$344,933	$142,500	$112,500	$1,125,000	$2,131,000	$1,467,600	$789,667	$674,667	$781,417	$1,571,050	$758,183
		FUTURE DOLLARS	*$326,000*	*$268,038*	*$104,537*	*$333,118*	*$380,742*	*$161,226*	*$130,466*	*$1,337,271*	*$2,596,417*	*$1,832,831*	*$1,010,840*	*$885,221*	*$1,050,919*	*$2,165,710*	*$1,071,293*

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ARRIVA CONDOMINIUM (PLAN No. 1014767)
EXPENDITURE SCHEDULE

Financial Analysis for Year Ended: 2024
Date of Study: Jun-24
Anticipated Fund Balance: $342,595
RJC Job # CAL.028168.0075
Interest Rate : 2.5%
Inflation Rate: 2.5%

Item	Description	Year-->	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054
MECHANICAL SYSTEMS																	
6.01	Heating Boilers	Replace			$90,000	$90,000	$90,000	$90,000									
6.02	Boiler Flues	Replace															
6.03	Boilers Pumps and Motors	Replace															
6.04	Heating Pumps and Motors	Replace															
6.05	Heating Pumps and Motors - Main floor	Replace															
6.06	Plate to Plate Heat Exchanger	Replace															
6.07	Cushion Tanks	Replace															
6.08	Cushion Tank - Main Floor	Replace															
6.09	Heating Piping	Replace							$500,000	$500,000	$500,000	$500,000	$500,000				
6.10	Unit Heaters	Replace	$18,750														
6.11	Zone Valves and Thermostats	Replace			$100,000	$100,000											
6.12	Domestic Hot Water Heaters	Replace						$30,000	$30,000	$30,000							
6.13	Domestic Hot Water Heaters - Main Floor	Replace						$22,667	$22,667	$22,667							
6.14	Domestic Hot Water Recir Pump	Replace		$2,000													
6.15	Domestic Hot Water Recir Pumps Addition	Replace										$2,000	$2,000				
6.16	Domestic Hot Water Recir Pumps 65 / 35	Replace		$1,500	$1,500												
6.17	Dom Hot Water \heat Exchanger 65 / 35	Replace															
6.18	Domestic Water Piping	Replace	$520,000														
6.19	Sanitary Piping Contingency	Replace	$10,000					$10,000					$10,000				
6.20	Chilled Water Pumps and Motors	Replace															
6.21	Chilled Water Pumps and Motors - Main Floor	Replace															
6.22	Domestic Cold Water Pump Pkg	Replace															
6.23	Chilled Water Piping	Replace							$340,000	$340,000	$340,000	$340,000	$340,000				
6.24	Fan Coil Units	Replace															
6.25	Chillers	Replace			$200,000	$200,000	$200,000										
6.26	Hallway Make Up Air System	Replace				$100,000											
6.27	Hallway Make Up Air System - Main Floor	Replace				$240,000											
6.28	Exhaust Fans	Replace	$3,000														
6.29	Sump Pumps	Replace							$2,000	$2,000	$2,000	$2,000					
6.30	Parkade Make Up Air Systems	Replace			$55,000	$55,000	$55,000	$55,000									
6.31	Parkade Doors and Controllers - Commercial	Replace															
6.32	Parkade Doors and Controllers - Residential	Replace												$30,000	$30,000		
6.33	BMS System Contingency	Replace				$100,000										$100,000	
6.34	Office Equipment	Replace								$5,000							
6.35	Appliances	Replace									$2,500	$2,500	$2,500	$2,500			
6.36	Plumbing Fixtures	Replace				$2,150	$2,150										
6.37	Electronic Equipment	Replace									$500	$500					
6.38	Snow Sweeper	Replace															
6.39	Irrigation System	Replace									$10,000						
6.40	Underground Services	Replace									$100,000						
ELECTRICAL SYSTEMS																	
7.01	Lighting System	Replace															
7.02	Electrical Distribution	Replace							$90,000	$90,000	$90,000	$90,000	$90,000				
7.03	Frequency Drivers	Replace						$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000		
7.04	Baseboard Heaters	Replace															
7.05	Intercoms	Replace									$10,000	$10,000					
7.06	Automated Doors	Replace									$11,000	$11,000					
7.07	Security System	Replace										$65,000					
7.08	Keyless Access Readers	Replace										$30,000					
FIRE SAFETY SYSTEM																	
8.01	Fire Alarm System	Replace															
8.02	Fire Pump Controller / Tran Switch	Replace															
8.03	Fire Pump and Motor	Replace				$120,000											
8.04	Building Sprinkler System	Replace									$1,900,000	$1,900,000					
8.05	Parkade Sprinkler System	Replace									$700,000						
8.06	Emergency Generator	Replace				$200,000											
ELEVATOR SYSTEMS																	
9.01	Electric Elevator Motors and Controls	Replace															
9.02	Elevator Cab Finhises	Replace								$20,000	$20,000	$20,000					
		TOTALS	$745,083	$2,506,833	$2,861,500	$5,467,150	$2,867,750	$2,642,667	$989,667	$1,018,000	$4,819,333	$3,456,933	$1,392,000	$450,000	$740,833	$835,833	$809,767
		FUTURE DOLLARS	*$1,079,103*	*$3,721,408*	*$4,354,111*	*$8,526,888*	*$4,584,529*	*$4,330,317*	*$1,662,226*	*$1,752,560*	*$8,504,247*	*$6,252,645*	*$2,580,690*	*$855,132*	*$1,442,995*	*$1,668,737*	*$1,657,112*

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RESERVE FUND PROJECTIONS FOR

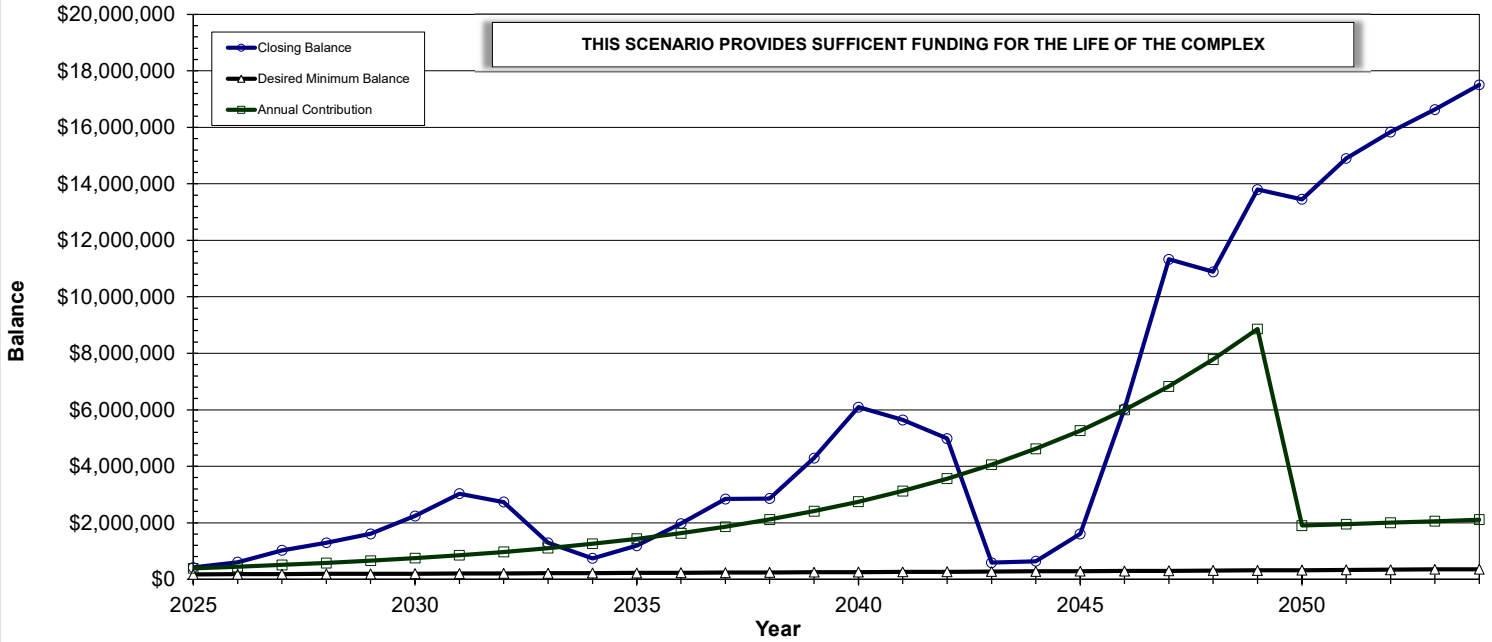
ARRIVA CONDOMINIUM (PLAN No. 1014767)

SCENARIO ONE - APPROVED SCENARIO

For Year Ending:	**2024**
Date Of Study:	**June 2024**
Cash Flow Projection:	**30 Years**
Interest Rate :	**2.5%**
Inflation Rate	**2.5%**

Initial Annual Contribution of $390,000.
Annual Increase of 13.9% Up to 2049
Adjusted Contribution of $1,900,000 in 2050
Annual Increase of 2.7% thereafter

RJC Job # **CAL.028168.0075**
Number of Units: **164**

Year starting May 1	Opening Balance	Predicted Annual Contribution (future dollars)	Special Assessment	Expenditure Adjusted for Inflation	Interest	Closing Balance	**Approximate Monthly Contribution Per Suite to the Reserve Fund
							**not based on Unit Factors
2025	**$342,595**	**$390,000**		$326,000	$9,365	$415,960	**$198**
2026	$415,960	$444,210		$268,038	$12,601	$604,734	**$226**
2027	$604,734	$505,955		$104,537	$20,136	$1,026,288	**$257**
2028	$1,026,288	$576,283		$333,118	$28,697	$1,298,149	**$293**
2029	$1,298,149	$656,386		$380,742	$35,899	$1,609,693	**$334**
2030	$1,609,693	$747,624		$161,226	$47,572	$2,243,663	**$380**
2031	$2,243,663	$851,544		$130,466	$65,105	$3,029,847	**$433**
2032	$3,029,847	$969,908		$1,337,271	$71,154	$2,733,638	**$493**
2033	$2,733,638	$1,104,726		$2,596,417	$49,695	$1,291,641	**$561**
2034	$1,291,641	$1,258,282		$1,832,831	$25,109	$742,202	**$639**
2035	$742,202	$1,433,184		$1,010,840	$23,834	$1,188,380	**$728**
2036	$1,188,380	$1,632,396		$885,221	$39,049	$1,974,604	**$829**
2037	$1,974,604	$1,859,299		$1,050,919	$59,470	$2,842,454	**$945**
2038	$2,842,454	$2,117,742		$2,165,710	$70,462	$2,864,948	**$1076**
2039	$2,864,948	$2,412,108		$1,071,293	$88,384	$4,294,147	**$1226**
2040	$4,294,147	$2,747,391		$1,079,103	$128,207	$6,090,642	**$1396**
2041	$6,090,642	$3,129,278		$3,721,408	$144,864	$5,643,377	**$1590**
2042	$5,643,377	$3,564,248		$4,354,111	$131,211	$4,984,726	**$1811**
2043	$4,984,726	$4,059,678		$8,526,888	$68,778	$586,294	**$2063**
2044	$586,294	$4,623,974		$4,584,529	$15,150	$640,889	**$2350**
2045	$640,889	$5,266,706		$4,330,317	$27,727	$1,605,005	**$2676**
2046	$1,605,005	$5,998,778		$1,662,226	$94,332	$6,035,889	**$3048**
2047	$6,035,889	$6,832,608		$1,752,560	$214,398	$11,330,336	**$3472**
2048	$11,330,336	$7,782,341		$8,504,247	$274,235	$10,882,665	**$3954**
2049	$10,882,665	$8,864,086		$6,252,645	$304,710	$13,798,816	**$4504**
2050	$13,798,816	**$1,900,000**		$2,580,690	$336,462	$13,454,587	**$965**
2051	$13,454,587	$1,951,300		$855,132	$350,067	$14,900,822	**$992**
2052	$14,900,822	$2,003,985		$1,442,995	$379,533	$15,841,345	**$1018**
2053	$15,841,345	$2,058,093		$1,668,737	$400,901	$16,631,601	**$1046**
2054	$16,631,601	$2,113,661		$1,657,112	$421,497	$17,509,647	**$1074**
TOTALS		**$79,855,776**	**$0**	**($66,627,329)**	**$3,938,604**		

30 Year Projection - Scenario One